DRAFT ENVIRONMENTAL IMPACT REPORT

India Basin Mixed-Use Project

PLANNING DEPARTMENT
CASE NO. **2014-002541ENV**

STATE CLEARINGHOUSE NO. 2016062003

SAN FRANCISCO PLANNING DEPARTMENT

Draft	Draft EIR Publication Date:	**September 13, 2017**
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TO: Distribution List for the India Basin Mixed-Use Project Draft EIR

FROM: Lisa Gibson, Environmental Review Officer

SUBJECT: Request for the Final Environmental Impact Report for the India Basin Mixed-Use Project (Planning Department File No. 2014-002541ENV)

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

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

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

Thank you for your interest in this project.

Draft
Environmental Impact Report

India Basin Mixed-Use Project

Prepared for

San Francisco Planning Department,
Environmental Planning Division

Prepared by

AECOM

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September 13, 2017

TABLE OF CONTENTS

Section **Page**

Appendices

Figures

Tables

Acronyms and Other Abbreviations

°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACL	absolute cumulative limit
ACS	American Community Survey
AC Transit	Alameda–Contra Costa County Transit District
Action Plan	*San Francisco Sea Level Rise Action Plan*
ADA	Americans with Disabilities Act
ADRP	archeological data recovery plan
AERMOD	American Meteorological Society/EPA Regulatory Model
APE	Area of Potential Effects
ARB	California Air Resources Board
ARPP	Archeological resource preservation plan
ASR	archeological survey report
ATP	archeological testing plan
AUF	acoustical usage factor
AWSS	Auxiliary Water Supply System
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
basin plan	water quality control plan
Basin Plan	*Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin*
Bay	San Francisco Bay
Bay Area	San Francisco Bay Area
Bay Area Clean Air Plan	*Bay Area Clean Air Plan: Spare the Air, Cool the Climate*
Bay Bridge	San Francisco–Oakland Bay Bridge
Bay-Delta	San Francisco Bay/Sacramento–San Joaquin Delta
Bay Plan	*San Francisco Bay Plan*
Bay Trail	San Francisco Bay Trail
Bay Trail Plan	*San Francisco Bay Trail Plan*
Bay Water Trail	San Francisco Bay Water Trail
BCDC	San Francisco Bay Conservation and Development Commission
B.C.E.	Before Common Era
Better Streets Plan	*San Francisco Better Streets Plan*
Bicycle Plan	*San Francisco Bicycle Plan*
Blue Book	*Regulations for Working in San Francisco Streets*
BMP	best management practice
BMT	BMT Fluid Mechanics
B.P.	Before Present
BTEX	benzene, toluene, ethylbenzene, and total xylenes
C-APE	California Environmental Quality Act Area of Potential Effects
ca.	circa
CAA	Clean Air Act
CAAQS	California ambient air quality standards

CalEEMod	California Emissions Estimator Model
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CAP	clean air plan
CARE	Community Air Risk Evaluation
Carl Moyer Program	Carl Moyer Memorial Air Quality Standards Attainment Program
CBC	California Building Standards Code
CBIA v. BAAQMD	*California Building Industry Association v. Bay Area Air Quality Management District*
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDE	California Department of Education
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH_4	methane
CHP	California Highway Patrol
cis-1,2-DCE	cis-1,2-dichloroethene
City	City and County of San Francisco
Clean Air Plan	*Bay Area 2010 Clean Air Plan*
Climate Action Plan	*Climate Action Plan for San Francisco*
Climate Action Strategy	*San Francisco Climate Action Strategy*
CNEL	community noise equivalent level
CNG	compressed natural gas
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
COA	certificate of appropriateness
CO-CAT	Coastal and Ocean Working Group of the California Climate Action Team
COMM	commercial and sport fishing beneficial use
COPC	chemical of potential concern
CPHPS	Candlestick Point–Hunters Point Shipyard
CPHPS EIR	*Candlestick Point–Hunters Point Shipyard Phase II Development Plan Project Environmental Impact Report*
CPHPS Shipyard Streetscape Plan	*Candlestick Point–Hunters Point Shipyard Phase II Project Streetscape Plan*
CPHPS Transportation Plan	*Candlestick Point & Hunters Point Shipyard Phase II Transportation Plan*
Community Vision	*India Basin Shoreline: The Community Vision*
COPC	chemical of potential concern
CRHR	California Register of Historical Resources
CRRP-HRA	Community Risk Reduction Plan Health Risk Assessment
CSD	combined sewer discharge
CSLC	California State Lands Commission

CSO	combined sewer overflow
CTR	California Toxics Rule
CUPA	certified unified program agency
CWA	Clean Water Act
CY	cubic yard(s)
dB	decibel(s)
dBA	A-weighted decibel(s)
dB/DD	decibels per doubling of distance
DBI	San Francisco Department of Building Inspection
Delta	Sacramento–San Joaquin Delta
Demands Report	*City and County of San Francisco Retail Water Demands and Conservation Potential*
diesel PM	diesel particulate matter
DMMO	Dredged Material Management Office
DNL	day-night (noise) level
DOT	U.S. Department of Transportation
DPH	San Francisco Department of Public Health
DSG	design standards and guidelines
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EFH	Essential Fish Habitat
EHSL	ecological habitat screening level
EIR	environmental impact report
EMFAC	EMission FACtors
EMS	emergency medical services
Endangerment Finding	Proposed Endangerment and Cause or Contribute Finding for Greenhouse Gases
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ERO	Environmental Review Officer
ESA	Environmental Site Assessment
ESL	environmental screening level
EST	estuarine habitat beneficial use
ESU	Evolutionarily Significant Unit
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
FARR	final archeological resources report
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	flood insurance rate map
First Update	*First Update to the Climate Change Scoping Plan*
FR	*Federal Register*
FTA	Federal Transit Administration
gal/sq. ft.	gallons per square foot
General Plan	*San Francisco General Plan*

GGBHTD	Golden Gate Bridge, Highway and Transportation District
GGT	Golden Gate Transit
GHG	greenhouse gas
GMLP	"global" maximum load point
GPCD	gallons per capita per day
gpd	gallons per day
gpd/sq. ft.	gallons per day per square foot
gpm	gallons per minute
gsf	gross square feet
Gt	gigatonne(s)
GWP	global warming potential
HABS	Historic American Building Survey
HAER	Historic American Engineering Record
HASP	health and safety plan
HFC	hydrofluorocarbon
HHSL	human health screening level
HI	hazard index
HMBP	hazardous materials business plan
HMUPA	Hazardous Materials Unified Program Agency
hp	horsepower
HPC	Historic Preservation Commission
HPP	historic preservation plan
HPX	Hunters Point Express
HRE	historic resource evaluation
HVAC	heating, ventilation, and air conditioning
HWCL	Hazardous Waste Control Law
I-280	Interstate 280
IBTAP	*India Basin Transportation Action Plan*
in/sec	inches per second
IPCC	Intergovernmental Panel on Climate Change
ITE	Institute of Transportation Engineers
K-8	kindergarten through 8th grade
K-12	kindergarten through 12th grade
KVP	key viewpoint
Langan	Langan Treadwell and Rollo
lb/day	pounds per day
L_{dn}	day-night (noise) level
LEED	Leadership in Energy and Environmental Design
L_{eq}	equivalent noise level
LID	Low Impact Development
L_{max}	maximum noise level
L_{min}	minimum noise level
LMLP	local maximum load point
LNG	liquefied natural gas
LOS	level of service
M-1	Light Industrial zoning

M-2	Heavy Industrial zoning
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MCL priority ESL	Maximum Contaminant Level Priority Direct Exposure Human Health Risk Level
mgd	million gallons per day
MHHW	mean higher high water
MHW	mean high water
MLD	Most Likely Descendant
MLP	maximum load point
MMPA	Marine Mammal Protection Act
MMRP	mitigation monitoring and reporting program
MMT	million metric tons
mph	miles per hour
MS4	Municipal Separate Storm Sewer System
msl	mean sea level
MSM	Mobile Source Measure
MT	metric tons
MTC	Metropolitan Transportation Commission
$MTCO_2e$	metric tons of carbon dioxide equivalent
Muni	San Francisco Municipal Railway
N_2O	nitrous oxide
N/A	not applicable
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NAV	navigation beneficial use
NAVD88	North American Vertical Datum of 1988
NC-2	Small-Scale Neighborhood Commercial zoning
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NL	Not Listed
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
Noise Control Ordinance	San Francisco Noise Control Ordinance
NOP	Notice of Preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NPPA	California Native Plant Protection Act
NPS	National Park Service
NRAMP	Natural Resource Management Plan
NRC	National Research Level
NRHP	National Register of Historic Places
NSR	New Source Review
NTR	National Toxics Rule
OBL	Obligate
OEHHA	California Office of Environmental Health Hazard Assessment

OHP	Office of Historic Preservation
OPR	Governor's Office of Planning and Research
OS	Open Space Height and Bulk District
OSHA	Occupational Safety and Health Administration
P	Public zoning
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethylene
PEA	preliminary environmental assessment
PFC	perfluorocarbons
PFC-14	tetrafluoromethane
PFC-116	hexafluoroethane
PG&E	Pacific Gas and Electric Company
Planning Code	San Francisco Planning Code
Planning Department	San Francisco Planning Department
PM	particulate matter
$PM_{2.5}$	particulate matter equal to or less than 2.5 microns in diameter
PM_{10}	particulate matter equal to or less than 10 microns in diameter
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1969
ppb	parts per billion
ppm	parts per million
ppT	parts per trillion
PPV	peak particle velocity
PRC	Public Resources Code
project	India Basin Mixed-Use Project
proposed project	proposed residential project
proposed transportation impact guidelines	*Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA*
Public Trust	the common-law public trust under the Burton Act, as amended
QACL	Qualified Archeological Consultants List
R&D	research and development
RAG	remedial action goal
RAP	remedial action plan
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
REC1	water contact recreation beneficial use
REC2	noncontact water recreation beneficial use
RECP	Regional Emergency Coordination Plan
Regional Housing Needs Plan	*Regional Housing Needs Plan for the San Francisco Bay Area*: *2014–2022*
Revitalization Concept Plan	*Bayview Hunters Point Community Revitalization Concept Plan*
RMS	root mean square
ROG	reactive organic gas
ROW	right-of-way
RPD	San Francisco Recreation and Parks Department
RWQCB	regional water quality control board
RWS	Regional Water System (of the San Francisco Public Utilities Commission)
SAM	Site Assessment and Mitigation

SamTrans	San Mateo County Transit District
San Francisco Sustainability Plan	*Sustainability Plan for the City of San Francisco*
San Francisco Waterfront SAP	*San Francisco Waterfront Special Area Plan*
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
Scoping Plan	*Climate Change Scoping Plan*
SEL	sound exposure level
SF	San Francisco
SF_6	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SF-CHAMP	San Francisco Chained Activity Model Process
SFCTA	San Francisco County Transportation Authority
SFDPH	San Francisco Department of Public Health
SFFD	San Francisco Fire Department
SF Guidelines	*Transportation Impact Analysis Guidelines for Environmental Review*
sfh	square foot–hours
SFMTA	San Francisco Municipal Transportation Agency
SFO	San Francisco International Airport
SFPD	San Francisco Police Department
SFPL	San Francisco Public Library
SF Port	Port of San Francisco
SFPUC	San Francisco Public Utilities Commission
SFPW	San Francisco Public Works
SFUSD	San Francisco Unified School District
Shipyard	Hunters Point Shipyard Phase I
SIP	State Implementation Plan
SMP	site mitigation plan
SMR	*San Francisco Stormwater Management Requirements and Design Guidelines*
SO_2	sulfur dioxide
SOI Standards	Secretary of the Interior's Standards
SoMa	South of Market
SPCC	Spill Prevention, Control, and Countermeasure
Special Area Plan	*San Francisco Waterfront Special Area Plan*
SPL	sound pressure level
sq. ft.	square feet
SSIP	Sewer System Improvement Program
SSM	stationary-source control measure
SSMP	San Francisco Sewer System Master Plan
SU-30	single-unit (truck)
Sub-Area Plan	*India Basin Shoreline Sub-Area Plan*
SUD	special use district
SVOC	semivolatile organic compound
SWMP	stormwater management plan
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
TAAS	Theoretical Available Annual Sunlight

TAC	toxic air contaminant
TAZ	transportation analysis zone
TCE	trichloroethylene
TCM	Transportation Control Measure
TDM	transportation demand management
TeNS	*Technical Noise Supplement to the Traffic Noise Analysis Protocol*
TIS	Transportation Impact Study
TMDL	total maximum daily load
TPH	total petroleum hydrocarbon
TPH-d	total petroleum hydrocarbons as diesel
TPH-mo	total petroleum hydrocarbons as motor oil
tpy	tons per year
Trust Exchange Agreement	public trust settlement and exchange agreement with the California State Lands Commission
TSF	Transportation Sustainability Fee
TTLC	Total Threshold Limit Concentration
UCL	Upper Confidence Limit
UPL	Upland
U.S. 101	U.S. Highway 101
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
UWMP	Urban Water Management Plan
variant	maximum commercial variant
VdB	vibration decibel(s)
VDECS	Verified Diesel Emission Control Strategies
VMT	vehicle miles traveled
VOC	volatile organic compound
Water Report	*2015 Retail Water Conservation Plan*
WB-40	semi-trailer (truck)
WDR	waste discharge requirement
WEAP	worker environmental awareness program
WETA	Water Emergency Transportation Authority
WHO	World Health Organization
WILD	wildlife habitat beneficial use
WRA	WRA Environmental Consultants
WSA	water supply assessment
XP1	Extended Phase 1

SUMMARY

This Environmental Impact Report (EIR) chapter summarizes the proposed India Basin Mixed-Use Project and its potential environmental impacts. This summary is intended to highlight major areas of importance in the environmental analysis as required by Section 15123 of the California Environmental Quality Act Guidelines (CEQA Guidelines). This summary provides a synopsis of the proposed project and the variant; a summary of potential environmental impacts and proposed mitigation measures, a description of the alternatives to the proposed project and variant that are addressed in this EIR and a comparison of the impacts of those alternatives to those of the proposed project or the variant; and a summary of environmental issues to be resolved and areas of controversy.

This summary should not be relied upon for a thorough understanding of the proposed project, variant, individual impacts, and mitigation measures. Please refer to Chapter 2 for a more complete description of the proposed project and variant, Chapter 3 for a more complete description of associated impacts and mitigation measures, and Chapter 4 for a more complete description of identified alternatives to the proposed project and variant, and comparative significant impacts.

PROJECT SYNOPSIS

As co–project sponsors, the San Francisco Recreation and Parks Department (RPD) and BUILD propose to redevelop their respective adjacent parcels along the India Basin shoreline of San Francisco Bay (Bay). The project site encompasses publicly and privately owned parcels, including existing streets, totaling approximately 38.24 acres.

RPD would improve 8 acres of publicly owned parcels along the shoreline plus 1.58 acres of unimproved paper streets[1] to create a publicly accessible network of new and/or improved parkland and open space. This new shoreline network would extend the Blue Greenway—a portion of the San Francisco Bay Trail (Bay Trail) that will ultimately connect The Embarcadero to the north to Candlestick Point to the south—and would provide pedestrian and bicycle connections to and along the shoreline, fronting the Bay.

BUILD would develop 17.12 acres of privately owned land plus 5.94 acres of developed and undeveloped public rights-of-way (ROWs) in phases with residential, retail, commercial, office, institutional, flex space (space that can be used for small local retail or office and residents), and recreational and art uses. BUILD would also redevelop 6.2 acres of RPD property along the shoreline, adjacent to privately owned land, into enhanced wetlands, a boardwalk, and a beach. The BUILD component consists of developing a mixed-use urban village on the 700 Innes property. This component of the project would include two options: (1) a residentially-oriented project with approximately 1,240 dwelling units, 275,330 square feet of commercial space, 50,000 square feet of institutional space, and 1,800 parking spaces; or (2) a commercially-oriented variant with approximately 500 dwelling units, 1,000,000 square feet of commercial space, 50,000 square feet of institutional space, and 1,932 parking spaces. Both BUILD options would include recreation and open space facilities. Table S-1 summarizes the components of the proposed project and the variant.

[1] Roadways that appear on maps but have not been built.

Table S-1: Summary of Proposed Project and Variant Components

Proposed Feature	Proposed Project	Variant
Residential Space (# of units)	1,240,100 gsf (1,240 units)	417,300 gsf (500 units)
Commercial Space—retail, office, R&D	275,330 gsf	1,000,000 gsf
Institutional/Educational Space	50,000 gsf	50,000 gsf
Parking Space (# of spaces)	679,900 gsf (1,800 spaces)	717,365 gsf (1,932 spaces)
Publicly Accessible Recreation/Open Space (# of acres)	1,067,220 sq. ft. (24.5 acres)	1,067,220 sq. ft. (24.5 acres)
Total Space	**3,312,550 gsf**	**3,251,885 gsf**
Building Heights (# of floors)	160 feet (14 floors)	160 feet (14 floors)
Building Footprint (# of acres)	422,532 gsf (9.7 acres)	422,532 gsf (9.7 acres)
# of Bike Spaces	1,240 spaces	500 spaces

Notes: gsf = gross square feet; R&D = research and development; sq. ft. = square feet
Source: Compiled by AECOM in 2017

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Table S-2 displays a summary of potential impacts and proposed mitigation measures that would avoid, eliminate, minimize, or reduce potential impacts. The level of significance of the potential impact following implementation of each mitigation measure is identified. Each potential impact and its significance conclusion are followed by the mitigation requirement. Where applicable, this table identifies project revisions or conditions, expressed as mitigation measures that would reduce the identified impact(s) to less-than-significant levels. The impact's level of significance after implementation of the required mitigation measure is provided in the column labeled "CEQA Impacts after Mitigation Measure(s)." All mitigation measures and improvement measures that are applicable to the proposed project are also applicable to the variant. Impacts are analyzed and the respective assessment and findings are included in this Draft EIR, applying the following levels of significance:

- **No Impact.** A conclusion of No Impact is reached if no potential exists for impacts or if the environmental resource does not occur in the project area or the area of potential impacts.
- **Less-than-Significant Impact.** This determination applies if the impact 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. No mitigation is required for impacts determined to be less than significant.
- **Less-than-Significant Impact with Mitigation.** This determination applies if the project would result in a significant impact, exceeding the established significance criteria, but feasible mitigation is available that would reduce the impact to a less-than-significant level.

- **Significant and Unavoidable Impact.** This determination applies if the project would result in an adverse impact that exceeds the established significance criteria, and no feasible mitigation is available to reduce the impact to a less-than-significant level. Therefore, the residual impact would be significant and unavoidable.
- **Significant and Unavoidable Impact with Mitigation.** This determination applies if the project would result in an adverse impact that exceeds the established significance criteria, and although feasible mitigation might lessen the impact, the residual impact would be significant, and therefore, the impact would be unavoidable.

For detailed descriptions of project impacts and mitigation measures, please see Sections 3.1 through 3.16.

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
3.1 Land Use and Land Use Planning			
Impact LU-1: The proposed project or variant would not physically divide an established community.	Less than Significant	None	Less than Significant
Impact LU-2: The proposed project or variant would not result in conflicts with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.	Less than Significant	None	Less than Significant
Impact C-LU-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would not result in significant cumulative impacts related to land use and land use planning.	Less than Significant	None	Less than Significant
3.2 Aesthetics			
Impact AE-1: The proposed project or variant would not have a substantial adverse effect on scenic vistas or scenic resources.	Less than Significant	None	Less than Significant
Impact AE-2: The proposed project or variant would not degrade the existing visual character or quality of the site and its surroundings.	Less than Significant	**Improvement Measure I-AE-1: Prepare and Implement Construction Staging, Access, and Parking Plan to Reduce Impacts on Visual Character/Quality During Construction.** As an improvement measure to further reduce impacts of project construction activities on the visual character/quality of the site, construction documents should require all construction contractors to provide for the cleanliness of construction equipment stored or driven outside of the limits of the construction work area. Construction equipment, including equipment used for staging, should be parked on the project site. Staging areas should be screened from view at street level with solid wood fencing or a green fence for areas under construction for extended periods of time. Before the issuance of building permits, the project	Less than Significant

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		sponsors (through the construction contractor[s]) should submit a construction staging, access, and parking plan to the San Francisco Department of Building Inspection for review and approval. Construction worker vehicles should not be parked at on-street parking spaces.	
Impact AE-3: The proposed project or variant would create a new source of substantial light or glare that would adversely affect day or nighttime views in the area or would substantially affect other people or properties.	Significant	**Mitigation Measure M-AE-3: Implement Good Lighting Practices** The project sponsor of the 700 Innes property shall develop a lighting plan for that property, subject to approval by the Planning Department, to address light spillover during operation of the proposed project or variant. The lighting plan shall include the following measures, which would reduce the impact of new lighting sources at the 700 Innes property: • Professionally recommended lighting levels for each activity shall be designed by a professional electrical consulting engineer to meet minimum illumination levels while preventing over-lighting and reducing electricity consumption. • The location, height, cutoff, and angle of all lighting shall be correctly focused on the project site to avoid directing light at neighboring areas. • Shielded fixtures with efficient light bulbs shall be used in uncovered parking areas to prevent any glare and light spillage beyond the property line.	Less than Significant with Mitigation
Impact-C-AE-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would substantially contribute to cumulative impacts related to aesthetics.	Significant	See **Mitigation Measure M-AE-3**	Less than Significant with Mitigation

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
3.3 Population and Housing			
Impact PH-1: The proposed project or variant would not induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through the extension of roads or other infrastructure).	Less than Significant	None	Less than Significant
Impact PH-2: The proposed project or variant would not displace substantial numbers of people or existing housing units, necessitating the construction of replacement housing.	Less than Significant	None	Less than Significant
Impact-C-PH-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would not substantially contribute to cumulative impacts related to population and housing.	Less than Significant	None	Less than Significant

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
3.4 Cultural Resources			
Impact CR-1: Construction under the proposed project or variant would cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5, including those resources listed in Article 10 or Article 11 of the San Francisco Planning Code.	Significant	**Mitigation Measure M-CR-1a: Prepare and Implement Historic Preservation Plans and Ensure that Rehabilitation Plans Meet Performance Criteria** The project sponsors shall retain a professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History and is on the Planning Department's qualified consultant list. This professional shall prepare, and the project sponsors shall implement, a historic preservation plan (HPP) for each of the three historical resources identified on the project site. Each HPP shall consider the historic resource evaluation reports prepared for this project. The HPPs shall incorporate rehabilitation recommendations for protecting character-defining features of the historical resources to be retained and shall include the following elements: • **Historic Preservation Protective Measures.** Each HPP shall be prepared and implemented to aid in preserving those portions of the historical resource that would be retained and/or rehabilitated as part of the project. The HPP shall establish measures to protect the character-defining features from construction equipment that may inadvertently come in contact with the resource. If deemed necessary upon further assessment of the resource's condition, the plan shall include the preliminary stabilization before construction to prevent further deterioration or damage. Specifically, the protection measures shall incorporate construction specifications for the proposed project that require the construction contractor(s) to use all feasible means to avoid damage to historical resources, including but not necessarily limited to the following: – staging equipment and materials as far as possible from historic buildings to avoid direct impact damage; – maintaining a buffer zone when possible between heavy equipment and historical resource(s) as identified by the Planning Department; – appropriately shoring excavation sidewalls to prevent movement of adjacent structures; – ensuring adequate drainage; and ensuring appropriate security to minimize risks of vandalism and fire. • **Relocation Plan for 702 Earl Street.** The HPP for 702 Earl Street shall include a relocation plan to be reviewed and approved by the Planning Department to ensure that character-defining features of the building will be retained. The relocation plan shall include required qualifications for the building relocation company ensuring that the relocation is undertaken by a company that is experienced in moving historic buildings of a similar size and/or structural system as 702 Earl Street. The relocation plan shall ensure that the building will be moved without disassembly and that the building will be separated from its existing foundation without irreparably damaging the character-defining historic fabric of the building. • **Rehabilitation and Retention Plan for India Basin Scow Schooner Cultural Landscape.** The HPP for the cultural landscape shall finalize the designs for the Shipwright's Cottage, and the Tool Shed interpretative structure, if included in the final design. It shall also include a plan for rehabilitation of the	Significant and Unavoidable with Mitigation

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)

Marineway rails.

- **New Construction and Maintenance Guidelines for the India Basin Scow Schooner Cultural Landscape.** The HPPs for the India Basin Scow Schooner Cultural Landscape shall establish protocols for the ongoing protection of the character-defining features of the cultural landscape and guidelines to evaluate all future development proposals within the cultural landscape. These guidelines shall include the following:
  - New construction and site development within or adjacent to the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape shall be compatible with the character of the cultural landscape and shall maintain and support the landscape's character-defining features.
  - New construction shall draw its form, materials, and color palette from the historic texture and materials of the cultural landscape.
  - New construction shall be contextually appropriate in terms of massing, size, scale, and architectural features, not only with the remaining historic buildings, but with one another.
  - New construction shall comply with the Secretary of the Interior's Rehabilitation Standard No. 9: "New Addition, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale and architectural features to protect the integrity of the property and its environment."
  - A building and structural maintenance plan shall be developed to ensure that the character-defining structures of the cultural landscape are maintained.
  - A planting and landscape maintenance plan shall be developed to provide ongoing protection of character-defining landscape features of the cultural landscape that will be rehabilitated and/or protected by the project, such as open areas and circulation routes. The plan shall provide guidelines for landscape design within the cultural landscape that maintains the historic and industrial character of the landscape.
- **Salvage.** Each HPP for the Shipwright's Cottage and the India Basin Scow Schooner Cultural Landscape shall further investigate and incorporate preservation recommendations regarding the salvage of historic materials for reuse and/or interpretation. The recommendations in the HPPs shall include but not be limited to the following:
  - Materials to be salvaged from the interior of the Shipwright's Cottage and recommendations for reusing those materials.
  - Materials to be salvaged from both contributing and noncontributing features of the India Basin Scow Schooner Boatyard Vernacular Cultural landscape, and recommendations for either incorporating such materials into the proposed new construction on the India Basin Shoreline Park property or otherwise reusing those materials.

For each HPP, the HPP, including any specifications, monitoring schedule, and other supporting documents, shall be incorporated into the site permit application's plan sets. Planning Department Preservation staff

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		shall review and approve the HPP before a site permit, demolition permit, or any other permit is issued by the San Francisco Department of Building Inspection for the rehabilitation of historical resources. The Planning Department shall not issue building permits associated with historical resources until Preservation staff concur that the designs conform to the SOI Standards for Rehabilitation. Should alternative materials be proposed for replacement of historic materials, they shall be in keeping with the size, scale, color, texture, and general appearance, and shall be approved by Planning Department Preservation staff. The performance criteria shall ensure retention of the character-defining features of each historical resource, as identified in the HPP, which in turn shall be developed in accordance with the HRE developed for the project (San Francisco, 2017b). The project sponsors shall ensure that the contractor(s) follows the HPP. Furthermore, in accordance with the HPP's reporting and monitoring requirements, the consultant architectural historian shall conduct regular periodic inspections of the historical resources under rehabilitation during project construction activities to ensure compliance with the HPP and adherence to the SOI Standards for Rehabilitation. The consultant architectural historian shall provide progress reports to the Planning Department throughout the construction period. **Mitigation Measure M-CR-1b: Document Historical Resources** To reduce adverse effects on historical resources, before the start of demolition, rehabilitation, or relocation, the project sponsors shall retain a professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History. This professional shall prepare written and photographic documentation of the three historical resources identified on the project site. The specific scope of the documentation shall be reviewed and approved by the Planning Department but shall include the following elements: • **Measured Drawings.** A set of measured drawings shall be prepared that depict the existing size, scale, and dimension of the historical resources. Planning Department Preservation staff will accept the original architectural drawings or an as-built set of architectural drawings (e.g., plan, section, elevation). Planning Department Preservation staff will assist the consultant in determining the appropriate level of measured drawings. • **Historic American Buildings/Historic American Landscape Survey–Level Photograph.** Either Historic American Buildings/Historic American Landscape Survey (HABS/HALS) standard large-format or digital photography shall be used. The scope of the digital photographs shall be reviewed by Planning Department Preservation staff for concurrence, and all digital photography shall be conducted according to the latest National Park Service (NPS) standards. The photography shall be undertaken by a qualified professional with demonstrated experience in HABS photography. Photograph views for the data set shall include: – contextual views; – views of each side of the building and interior views, where possible;	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		– oblique views of the building; and – detail views of character-defining features, including features on the interior. All views shall be referenced on a photographic key. This photographic key shall be on a map of the property and shall show the photograph number with an arrow to indicate the direction of the view. Historic photographs shall also be collected, reproduced, and included in the data set. • **HABS/HALS Historical Report.** A written historical narrative and report shall be provided in accordance with the HABS Historical Report Guidelines. In addition, video recordation shall be undertaken before demolition or site permits are issued. The project sponsor shall undertake video documentation of the affected historical resource and its setting. The documentation shall be conducted by a professional videographer, one with experience recording architectural resources. The documentation shall be narrated by a qualified professional who meets the standards for history, architectural history, or architecture (as appropriate) set forth by the Secretary of the Interior's Professional Qualification Standards (36 Code of Federal Regulations Part 61). The documentation shall include as much information as possible—using visuals in combination with narration—about the materials, construction methods, current condition, historic use, and historic context of the historical resource. Archival copies of the video documentation shall be submitted to the Planning Department, and to repositories including but not limited to the San Francisco Public Library, the Northwest Information Center of the California Historical Information Resource System, and the California Historical Society. Further, a Print-on-Demand softcover book shall be produced that includes the content from the historical report, historical photographs, HABS/HALS photography, measured drawings, and field notes. The Print-on-Demand book shall be made available to the public for distribution. The project sponsor shall transmit such documentation to the History Room of the San Francisco Public Library, San Francisco Architectural Heritage, the Planning Department, the San Francisco Maritime National Historic Park, and the Northwest Information Center. The HABS/HALS documentation scope will determine the requested documentation type for each facility, and the projects sponsors will conduct outreach to identify other interested groups. All documentation will be reviewed and approved by the Planning Department's Preservation coordinator before any demolition or site permit is granted for the affected historical resource. **Mitigation Measure M-CR-1c: Develop and Implement an Interpretative Plan** The project sponsors shall facilitate the development of an interpretive program focused on the history and environmental setting of each historical resource identified on the project site. This program shall be initially outlined in an interpretive plan subject to review and approval by the Planning Department. The interpretative program shall include but not be limited to the installation of permanent on-site interpretive displays or screens in publicly accessible locations. The plan shall include the proposed format and location of the interpretive content, as well as high-quality graphics and written narratives to be	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		incorporated. Historical photographs, including some of the large-format photographs required by Mitigation Measure M-CR-1b, may be used to illustrate the history. Salvaged materials as required by Mitigation Measure M-CR-1a should also contribute to the interpretative program. The interpretative program should also coordinate with other interpretative displays currently proposed along the Bay, specifically those that focus on shipbuilding at Potrero Point to the north. The interpretative program should also coordinate with maritime or other relevant interpretation programs in San Francisco, such as the San Francisco Maritime National Historic Park and its sailing program that includes the 1891 scow schooner Alma. The interpretative plan should also explore contributing to digital platforms that are publicly accessible, such as the History Pin website or an iPhone application. The primary goal is to educate visitors about the property's historical themes, associations, and lost contributing features within broader historical, social, and physical landscape contexts. **Mitigation Measure M-CR-1d: Retain the Boatyard Office Building** If feasible, character-defining features of the Boatyard Office building shall be retained by RPD in order to ensure that the building remains a significant feature of the cultural landscape. This would include retention of a portion of the roof form, wood frame structure, and wood cladding so that the massing of the building is still expressed. For example, this may include retention of an open-frame or partially open-frame roof structure with wide eaves supported by a wood frame structure with a portion of the structure clad in retained or replaced-in-kind wood cladding. If possible, the porthole openings on the southeast and southwest façade shall be retained. The amount of the wood cladding and roof structure to be retained will depend upon additional condition assessments of the building, public safety concerns, seismic requirements, visibility and sight lines in relation to park design, and RPD programming. **Mitigation Measure M-CR-1e: Vibration Protection Plan** Where construction activity involving pile driving and other heavy equipment and vehicles would occur in proximity to any historical resources, the project sponsors shall undertake a monitoring program to minimize damage to adjacent historic buildings and to ensure that any such damage is documented and repaired. The monitoring program, which shall apply within 150 feet where pile driving would be used and within 35 feet of other heavy equipment operation, shall include the following components: • Prior to the start of any ground-disturbing activity, the project sponsors shall engage a historic architect or qualified historic preservation professional to undertake a pre-construction survey of historical resource(s) identified by the San Francisco Planning Department within 150 feet of planned construction to document and photograph the buildings' existing conditions. The qualified consultant shall conduct regular periodic inspections of each historical resource within 150 feet of planned construction during ground-disturbing activity on the project site in concert with a qualified acoustical/vibration consultant or structural engineer and shall submit monitoring reports to San Francisco Planning Department Preservation staff. The qualified consultant shall submit an existing conditions documentation scope and vibration monitoring plan to San Francisco Planning Department Preservation staff for review and approval. • Based on the construction and condition of the resource(s), a structural engineer or other qualified entity	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		shall establish a maximum vibration level that shall not be exceeded at each historical resource, based on existing conditions, character-defining features, soils conditions and anticipated construction practices in use at the time (0.12 inch per second, peak particle velocity [PPV], consistent with Federal Transit Administration guidance). To ensure that vibration levels do not exceed the established standard, a qualified acoustical/vibration consultant shall monitor vibration levels at each historical resource within 150 feet of planned construction and shall prohibit vibratory construction activities that generate vibration levels in excess of the standard. Should vibration levels be observed in excess of the standard, construction shall be halted and alternative construction techniques put in practice. (For example, pre-drilled piles could be substituted for driven piles, if soil conditions allow; smaller, lighter equipment could possibly also be used in some cases.) The consultant shall conduct regular periodic inspections of each historical resource within 150 feet of planned construction during ground-disturbing activity on the project site. Should damage to a historical resource occur as a result of ground-disturbing activity on the site, the building(s) shall be remediated to its pre-construction condition at the conclusion of ground-disturbing activity on the site.	
Impact CR-2: Construction under the proposed project or variant would cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5.	Significant	**Mitigation Measure M-CR-2a: Undertake an Archeological Testing Program** Based on the results of the archeological investigation completed for the proposed project and variant, the remains of two ships, the *Bay City* and the *Caroline*, occur within the study area. Both sets of remains are contributing elements to the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape. The proposed Marineway would cross over the identified remains of the *Caroline*, and the viewing platform would be placed over the remains of the *Bay City*. The foundation system of the Marineway and viewing platform have not been fully developed, but the potential exists for piles required for the structure to be driven through the buried vessels. There is also a reasonable presumption that additional archeological resources beyond the remains of the *Bay City* and *Caroline* may be present in the study area. Such currently undiscovered resources could include other ship hulks associated with the Hunters Point Ship Graveyard (which in turn would be contributing elements to the vernacular cultural landscape) and both prehistoric and historic-period archeological sites. As such, the following measures shall be undertaken to avoid any significant adverse effect from the proposed project or variant on buried archeological resources. The project sponsors shall retain the services of an archeological consultant from the rotational Qualified Archeological Consultants List (QACL), maintained by the Planning Department's archeologist. The project sponsors 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 project	Less than Significant with Mitigation

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		construction for up to 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 the potential effects on a significant archeological resource, as defined in State CEQA Guidelines Sections 15064.5(a) and 15064.5(c), to less than significant with mitigation. **Consultation with Descendant Communities**. Upon discovery of an archeological site associated with Native Americans, the overseas Chinese, or other potentially interested descendant groups, an appropriate representative of the descendant group and the ERO shall be contacted. The descendant group's representative shall be given the opportunity to monitor archeological field investigations of the site and to consult with the ERO regarding appropriate archeological treatment of the site, data recovered from the site, and if applicable, any 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 Plan**. 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 or variant, the testing method to be used, and the locations recommended for testing. The purpose of the archeological testing program shall be to determine the presence or absence of archeological resources to the extent possible, and to 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 the archeological consultant finds, based on the archeological testing program, that significant archeological resources may be present, the ERO acting in consultation with the archeological consultant shall determine whether additional measures are warranted. Additional measures that may be undertaken include further archeological testing, archeological monitoring, and/or an archeological data recovery program. If the ERO determines that a significant archeological resource is present and that the proposed project or variant could adversely affect the resource, then one of the following measures shall be implemented, at the discretion of the project sponsors, depending on the location of the resource: • The proposed project or variant shall be redesigned to avoid any adverse effect on the significant archeological resource. OR • A data recovery program shall be implemented, unless the ERO determines that the archeological resource is of greater significance for interpretation than for research and that interpretive use of the resource is feasible. **Archeological Monitoring Program**. If the ERO acting in consultation with the archeological consultant determines that an archeological monitoring program (AMP) shall be implemented, the archeological monitoring program shall include the following provisions, at a minimum: • The archeological consultant, the project sponsors (depending on the location of the resource and/or area	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		of concern), and the ERO shall meet and consult on the scope of the archeological monitoring program a reasonable amount of time before the start of any project-related soil-disturbing activities. The ERO, in consultation with the archeological consultant, shall determine which project activities shall be subject to archeological monitoring. A single AMP or multiple AMPs may be produced to be consistent with project phasing. In most cases, any soil-disturbing activities, such as demolition, foundation removal, excavation, grading, installation of utilities, foundation work, pile driving (e.g., foundation, shoring), and site remediation, 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), shall explain how to identify evidence of the expected resource(s), and shall identify the appropriate protocol in case of the apparent discovery of an archeological resource. • The archeological monitor(s) shall be present on the project site according to a 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, and other construction activities and equipment until the deposit is evaluated. If in the case of pile driving activity (e.g., foundation, shoring) the archeological monitor has cause to believe that the pile driving activity may affect an archeological resource, the 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. Intermittent reports shall be submitted for each phase of construction. **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 sponsors (dependent on location of resource requiring implementation of this mitigation measure), and ERO shall meet and agree regarding the scope of the ADRP before preparation of a draft ADRP. The archeological consultant shall submit a draft ADRP to the ERO for each phase of construction or for the overall construction effort. The ADRP shall identify how the proposed data recovery program would preserve the significant information the archeological resource is expected to contain. That is, the ADRP shall 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	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		research questions. Data recovery, in general, will be limited to the portions of the historical property that can be adversely affected by the proposed project or variant. Destructive data recovery methods shall not be applied to portions of the archeological resources if nondestructive methods are practical. The scope of the ADRP shall include: • descriptions of proposed field strategies, procedures, and operations; • a description of the selected cataloguing system and artifact analysis procedures; • a description of and rationale for field and postfield discard and deaccession policies; • consideration of an on-site/off-site public interpretive program during the course of the ADRP; • recommended security measures to protect the archeological resource from vandalism, looting, and unintentionally damaging activities; • a description of the proposed report format and distribution of results; and • a 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. The FARR will be submitted after the conclusion of all construction activities that are required for the entire project. Information that can put any archeological resource at risk 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: • The Northwest Information Center shall receive one copy. • The ERO shall receive a copy of the transmittal of the FARR to the Northwest Information Center. • 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 NRHP/CRHR. In instances of high public interest in or the high interpretive value of the resource, the ERO may require a different final report content, format, and distribution than that presented above.	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
Impact CR-3: Construction under the proposed project or variant would disturb human remains, including those interred outside of formal cemeteries.	Significant	**Mitigation Measure M-CR-3a: Implement Legally Required Measures in the Event of Inadvertent Discovery of Human Remains** The following measures shall be implemented in the event of the discovery, or anticipated discovery, of human remains and associated burial-related cultural materials. The treatment of human remains and of associated or unassociated funerary objects discovered during any soils 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 the ERO, 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) who shall appoint a Most Likely Descendant (MLD) (PRC Section 5097.98). The archeological consultant, project sponsors, ERO, and MLD shall have up to but not beyond 6 days of 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 (State 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 as agreement has been made or, otherwise, as determined by the archeological consultant and the ERO.	Less than Significant with Mitigation
Impact CR-4: Construction under the proposed project or variant would cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074.	Significant	**Mitigation Measure M-CR-4a: Implement Tribal Cultural Resources Interpretive Program** If the ERO determines that preservation in place of the tribal cultural resource pursuant to Mitigation Measure M-CR-2a, "Undertake an Archeological Testing Program," is both feasible and effective, then the archeological consultant shall prepare an archeological resource preservation plan (ARPP). Implementation of the approved ARPP by the archeological consultant shall be required when feasible. If the ERO determines that preservation in place of the tribal cultural resource is not a sufficient or feasible option, then the project sponsors shall implement an interpretive program of the tribal cultural resource in consultation with affiliated Native American tribal representatives. An interpretive plan produced in consultation with affiliated Native American tribal representatives, at a minimum, and approved by the ERO would be required to guide the interpretive program. The plan shall identify proposed locations for installations or displays, the proposed content and materials of those displays or installation, the producers or artists of the displays or installation, and a long-term maintenance program. The interpretive program may include artist installations, preferably by local Native American artists, oral histories with local Native Americans, artifacts displays and interpretation, and educational panels or other informational displays.	Less than Significant with Mitigation

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
Impact-C-CR-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would substantially contribute to cumulative impacts related to cultural resources.	Significant	See **Mitigation Measures M-CR-1a, M-CR-1b, M-CR-2a and M-CR-3**a.	Significant and Unavoidable
3.5 Transportation and Circulation			
Impact TR-1: The proposed project or variant would not cause substantial additional VMT or substantially induce automobile travel.	Less than Significant	None	Less than Significant
Impact TR-2: The proposed project or variant would not cause major traffic hazards.	Less than Significant	**Improvement Measure I-TR-2V: Reconfigure Southbound Approach at Jennings Street/ Evans Avenue/Middle Point Road under the Variant** To improve vehicular mobility at the Jennings Street/Evans Avenue/Middle Point Road intersection under the variant, the project sponsors should fund, and SFMTA should implement, improvements to reconfigure the southbound Jennings Street approach of the Jennings Street/Evans Avenue/Middle Point Road intersection to include a 100-foot left-turn pocket. Adding this turn pocket to the intersection would require that SFMTA restrict parking along the west side of Jennings Street, resulting in the removal of approximately five parking spaces. The project sponsors should fund their fair-share cost of the design and implementation of this improvement. Responsibility for funding the implementation of the improvement measure under the variant would be based on the relative contribution of each of the four project site properties to the increase in traffic volumes at the intersection. At this location, 1 percent of the added vehicle-trips would be generated by the India Basin Shoreline Park property, 0 percent would be generated by the 900 Innes property, 1 percent would be generated by the India Basin Open Space property, and 98 percent would be generated by the 700 Innes property. FivePoint (developer of the Shipyard project) has committed to signalizing the intersection as part of the Shipyard project, and the improvements described above should be coordinated with this effort. Should the changes required at this location as part of the Shipyard project be completed before a decision to implement the proposed left-turn pocket, the project sponsors would be responsible for funding and implementing the improvement measure.	Less than Significant

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
Impact TR-3: The proposed project or variant would cause a substantial increase in transit demand that would not be accommodated by adjacent transit capacity, resulting in unacceptable levels of transit service.	Significant	**Mitigation Measure M-TR-3P: Implement Transit Capacity Improvements (Proposed Project)** The project sponsors of the 700 Innes property shall fund and/or implement transit capacity improvements as described below. Implementation of one of the two options described below would mitigate the transit capacity impact of the proposed project to less than significant. • **Option 1—Fund Temporary Transit Service Improvements Until the Applicable Portion of the Candlestick Point/Hunters Point Shipyard Phase II Transportation Plan is in Operation** The project sponsors of the 700 Innes property shall fund, and SFMTA shall provide, temporary increased frequencies on the 44 O'Shaughnessy for the period of time until similar improvements required as part of the CPHPS Transportation Plan are in operation. Specifically, the frequency of the 44 O'Shaughnessy shall be increased from every 8 minutes to every 6.5 minutes in the a.m. peak period and from every 9 minutes to every 7.5 minutes in the p.m. peak period. This increased frequency is set at the level where project-generated transit trips would no longer result in a significant transit capacity impact. The project sponsors' funding contributions are based on the cost to serve the relative proportion of transit trips generated by each of the four properties that make up the project site, and would include the cost to requisition and operate any additional buses needed to increase the frequencies as specified. Under the project-level analysis for the proposed project, all transit trips generated at the project site result from the proposed development at the 700 Innes property. Under Option 1, the increased frequency on the 44 O'Shaughnessy would result in increased passenger capacity along the route (because more buses would be provided per hour), thereby lowering the average passenger load per bus below the 85 percent capacity utilization threshold. Mitigation Measure M-TR-3P, Option 1 would be implemented prior to the issuance of the building permits for the incremental amount of development at the 700 Innes property (20 transit trips outbound from the project site on the 44 O'Shaughnessy during the weekday a.m. peak hour or 18 transit trips inbound to the project site on the 44 O'Shaughnessy during the weekday p.m. peak hour) that would cause the significant impact. This incremental amount of development would be a subset of the first phase of construction. • **Option 2—Implement a Temporary Shuttle Service Until the Applicable Portion of the Candlestick Point–Hunters Point Shipyard Phase II Transportation Plan is in Operation** If for any reason SFMTA determines that providing increased transit frequency as described under Option 1 is not feasible at the time its implementation would be required, the project sponsors for the 700 Innes property shall implement a temporary shuttle service to supplement existing nearby transit service by providing connections to local and regional rail service. The shuttle would connect the project site (at a stop on Innes Avenue at Arelious Walker Drive or a stop on New Hudson Avenue/New Griffith Street near Innes Avenue) with Muni light rail (T Third Street), Caltrain, and BART. A shuttle service operating at 20-minute headways in the a.m. and p.m. peak periods (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., respectively) could accommodate the estimated demand, although a maximum headway of 15 minutes is recommended in order to provide an adequate level of service for urban commuters. Shuttle operations would be extended outside of these defined periods, if necessary, to	Less than Significant with Mitigation

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		adequately serve the peak period of project travel demand. The shuttle would be required to operate only until the CPHPS Transportation Plan's transit service improvements are in place. If Option 2 is implemented, the shuttle shall operate within all applicable SFMTA and City regulations and programs. The project sponsors for the 700 Innes property shall be required to monitor ridership on the shuttle annually and produce a report to SFMTA describing the level of service provided and associated ridership. If ridership on the overcrowded Muni route is more than 85 percent of overall service capacity as routinely monitored by the SFMTA, additional shuttle frequency shall be provided by the project sponsors for the 700 Innes property to reduce passenger loads to below 85 percent utilization on the corresponding Muni route. Under Option 2, the shuttle service would supplement existing transit routes by providing sufficient capacity to accommodate the demand generated by the proposed project above the 85 percent utilization threshold, with a 20 percent contingency factor. Mitigation Measure M-TR-3P, Option 2 would be implemented prior to the issuance of the Temporary Certificates of Occupancy (TCO) for the incremental amount of development at the 700 Innes property (20 transit trips outbound from the project site on the 44 O'Shaughnessy during the weekday a.m. peak hour or 18 transit trips inbound to the project site on the 44 O'Shaughnessy during the weekday p.m. peak hour) that would cause the significant impact. This incremental amount of development would be a subset of the first phase of construction. **Mitigation Measure M-TR-3V: Implement Transit Capacity Improvements (Variant)** The project sponsors of the 700 Innes property shall fund and/or implement transit capacity improvements as described below. Implementation of one of the two options described would mitigate the transit capacity impact of the variant to less than significant. • **Option 1—Fund Temporary Transit Service Improvements Until the Applicable Portion of the Candlestick Point–Hunters Point Shipyard Phase II Transportation Plan is in Operation** The project sponsors of the 700 Innes property shall fund, and SFMTA shall provide, temporary increased frequencies on the 44 O'Shaughnessy and 48 Quintara–24th Street (which will replace the 19 Polk's route along Evans Avenue, Hunters Point Boulevard, and Innes Avenue) for the period of time until similar improvements required as part of the CPHPS Transportation Plan are in operation. Specifically, the frequency of the 44 O'Shaughnessy shall be increased from every 8 minutes to every 6.5 minutes in the a.m. peak period and from every 9 minutes to every 7.5 minutes in the p.m. peak period. The frequency of the 48 Quintara–24th Street shall be increased from every 15 minutes to every 10 minutes during both the a.m. and p.m. peak periods. These increased frequencies are set at the level where project-generated transit trips would no longer result in a significant transit capacity impact. The project sponsors' funding contributions are based on the cost to serve the relative proportion of transit trips generated by each of the four properties that make up the project site, and would include the cost to requisition and operate any additional buses needed to increase the frequencies as specified. Under the project-level analysis for the variant, all transit trips generated at the project site result from the proposed development at the 700 Innes property.	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		Under Option 1, the increased frequency on the 44 O'Shaughnessy and 48 Quintara–24th Street would result in increased passenger capacity along these routes (because more buses would be provided per hour), thereby lowering the average passenger load per bus below the 85 percent capacity utilization threshold. Mitigation Measure M-TR-3V, Option 1 would be implemented prior to the issuance of building permits for the incremental amount of development at the 700 Innes property (187 transit trips inbound to the project site on the 19 Polk during the weekday a.m. peak hour, 152 transit trips outbound from the project site on the 19 Polk during the weekday p.m. peak hour, 20 transit trips outbound from the project site on the 44 O'Shaughnessy during the weekday a.m. peak hour, or 18 transit trips inbound to the project site on the 44 O'Shaughnessy during the weekday p.m. peak hour) that would cause the significant impact. This incremental amount of development would be a subset of the first phase of construction. • **Option 2—Implement a Temporary Shuttle Service Until the Applicable Portion of the Candlestick Point–Hunters Point Shipyard Phase II Transportation Plan is in Operation** If for any reason SFMTA determines that providing increased transit frequency as described under Option 1 is not feasible at the time its implementation would be required,, the project sponsors for the 700 Innes property shall implement a temporary shuttle service to supplement existing nearby transit service by providing connections to local and regional rail service. The shuttle would connect the project site (at a stop on Innes Avenue at Arelious Walker Drive or a stop on New Hudson Avenue/New Griffith Street near Innes Avenue) with Muni light rail (T Third Street), Caltrain, and BART. A shuttle service operating at 20-minute headways in the a.m. and p.m. peak periods (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., respectively) could accommodate the estimated demand, although a maximum headway of 15 minutes is recommended in order to provide an adequate level of service for urban commuters. Shuttle operations would be extended outside of these defined periods, if necessary, to adequately serve the peak period of project travel demand. The shuttle would be required to operate only until the CPHPS Transportation Plan's transit service improvements are in place. If Option 2 is implemented, the shuttle shall operate within all applicable SFMTA and City regulations and programs. The project sponsors for the 700 Innes property shall be required to monitor ridership on the shuttle annually and produce a report to SFMTA describing the level of service provided and associated ridership. If ridership on the overcrowded Muni routes is more than 85 percent of overall service capacity as routinely monitored by the SFMTA, additional shuttle frequency shall be provided by the project sponsors of the 700 Innes property to reduce passenger loads to below 85 percent utilization on the corresponding Muni routes. Under Option 2, the shuttle service would supplement existing transit routes by providing sufficient capacity to accommodate the demand generated by the variant above the 85 percent utilization threshold, with a 20 percent contingency factor. Mitigation Measure M-TR-3V, Option 2 would be implemented prior to the issuance of the Temporary Certificates of Occupancy (TCO) for the incremental amount of development at the 700 Innes property (187 transit trips inbound to the project site on the 19 Polk during the weekday a.m. peak hour, 152 transit trips outbound from the project site on the 19 Polk during the weekday p.m. peak hour, 20 transit trips	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		outbound from the project site on the 44 O'Shaughnessy during the weekday a.m. peak hour, or 18 transit trips inbound to the project site on the 44 O'Shaughnessy during the weekday p.m. peak hour) that would cause the significant impact. This incremental amount of development would be a subset of the first phase of construction.	
Impact TR-4: The proposed project or variant would not cause a substantial increase in delays or operating costs such that significant adverse impacts in transit service levels could result.	Less than Significant	None	Less than Significant
Impact TR-5: The proposed project or variant would not create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the site or adjoining areas.	Less than Significant	None	Less than Significant
Impact TR-6: The proposed project or variant would not 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.	Less than Significant	**Improvement Measure I-TR-6: Implement Queue Abatement Strategies** It should be the responsibility of the owner/operator of any off-street parking facility located on the 700 Innes property with more than 20 parking spaces (excluding loading and carshare spaces) to ensure that recurring vehicle queues do not occur regularly on the public right-of-way. A vehicle queue is defined as one or more vehicles (destined to the parking facility) blocking any portion of any public street, alley, or sidewalk for a consecutive period of three minutes or longer on a daily or weekly basis. If a recurring queue occurs, the owner/operator of the parking facility should employ abatement methods as needed to abate the queue. Appropriate abatement methods will vary depending on the characteristics and causes of the recurring queue, as well as the characteristics of the parking facility, the street(s) to which the facility connects, and the associated land uses (if applicable). Suggested abatement methods include, but are not limited to, the following: redesign of facility to improve vehicle circulation and/or on-site queue capacity; employment of parking attendants; installation of "LOT FULL" signs with active management by parking attendants; use of valet parking or other space-efficient parking techniques; use of off-site parking facilities or shared parking with nearby uses; use of parking occupancy sensors and signage directing drivers to available spaces; travel demand management strategies such as additional bicycle parking, customer shuttles, or delivery services; and/or parking demand management strategies such as parking time limits, paid parking, time-of-day parking surcharge, or validated parking. If the Planning Director, or his or her designee, reasonably believes that a recurring queue is present, the Planning Department should notify the property owner in writing. The Property Owner would have no less than 45 days to take reasonable measures to abate the queues. If, after 45 days, the Planning Director, or his or her designee, reasonably believes, upon further examination, that the abatement measures have not been	Less than Significant

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		effective, then the Planning Director may suggest additional measures or may request that the owner/operator hire a qualified transportation consultant to evaluate the conditions at the site for no less than 7 days. The consultant would prepare a monitoring report to be submitted to the Planning Department for review. If the Planning Department determines that a recurring queue does exist, the facility owner/operator would have 90 days from the date of the written determination to implement measures to abate the queue.	
Impact TR-7: Except for the passenger loading activities associated with the proposed school, the proposed project or variant, would result in a loading demand during the peak hour of loading activities that would be accommodated within proposed on-site loading facilities or within convenient on-street loading zones, and would not create potentially hazardous conditions affecting traffic, transit, bicycles, or pedestrians or significant delays affecting transit.	Significant	**Improvement Measure I-TR-7: Implement an Active Loading Management Plan** If the project sponsor for the 700 Innes property proposes to provide fewer loading spaces than required under the Special Use District (SUD) for the proposed project or variant, the project sponsor should, at their discretion, develop an develop an Active Loading Management Plan for review and approval by the Planning Department to address operational loading activities. The Active Loading Management Plan would facilitate efficient use of loading spaces and may incorporate the following ongoing actions to address potential ongoing loading issues: • Direct residential and commercial tenants to schedule all move-in and move-out activities and deliveries of large items (e.g., furniture) with the management for their respective building(s). • Direct commercial and retail tenants to schedule deliveries, to the extent feasible. • Reduce illegal stopping of delivery vehicles by directing building lobby attendants and retail tenants to notify any illegally stopped delivery personnel (i.e., in the red zones) that delivery vehicles should be parked in the on-street commercial loading spaces. • Design the loading areas to include sufficient storage space for deliveries to be consolidated for coordinated deliveries internal to project facilities (i.e., retail and residential). • Design the loading areas to allow for unassisted delivery systems (i.e., a range of delivery systems that eliminate the need for human intervention at the receiving end), particularly for use when the receiver site (e.g., retail space) is not in operation. Examples include the receiver site providing a key or electronic fob to loading vehicle operators, which enables the loading vehicle operator to deposit the goods inside the business, or in a secured area that is separated from the business but accessible from a public ROW. A draft Active Loading Management Plan should be included as part of the Design Guidelines and Standards document for the project site. A final Active Loading Management Plan and all subsequent revisions, if implemented, would be reviewed and approved by the Planning Department. The Final Active Loading Management Plan would be approved prior to receipt of the first Certificate of Occupancy for the first parking/loading garage. The Draft and Final Active Loading Management Plans (if implemented) would be evaluated by a qualified transportation professional, retained by the project sponsors and approved by the Planning Department, after the combined occupancy of the commercial and residential uses reaches 50 percent and once a year going forward until the Planning Department determines that the evaluation is no longer necessary or may be done at less frequent intervals. The content of the evaluation report would be determined by Planning Department staff, in consultation with SFMTA, and generally may include an assessment of on-site and on-street loading conditions, including actual loading demand, observations of loading operations, and an assessment of how	Less than Significant with Mitigation

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		the project meets this improvement measure. The evaluation report would be reviewed by Planning Department staff, who would make the final determination whether there are conflicts associated with loading activities. In the event of such conflicts, the project sponsors may propose modifications to the above Final Active Loading Management Plan requirements to reduce conflicts and improve performance under the Plan (such as hour and day restrictions or restrictions on the number of loading vehicle operations permitted during certain hours). The project sponsors would submit any proposed modifications to the Plan for review and approval by the Planning Department.	
Impact TR-8: Under either the proposed project or variant, passenger loading demand associated with the school during the peak hour of loading activities would not be accommodated within proposed on-site passenger loading facilities or within convenient on-street loading zones, and would create potentially hazardous conditions affecting traffic, transit, bicycles, or pedestrians or significant delays affecting transit.	Significant	**Mitigation Measure M-TR-8: Implement Passenger Loading Strategies for the School** Once school enrollment reaches 22 students, the school proposed for the 700 Innes property shall provide and enforce a pick-up/drop-off plan subject to review and approval by SFMTA to minimize disruptions to traffic, bicycle, and pedestrian circulation associated with school pick-up/drop-off activities and ensure safety for all modes. This plan shall include elements such as the size and location of loading zone(s), parking monitors, staggered drop-offs, a number system for cars, one-way circulation, encouragement of carpools/ride-sharing, and a safety education program. The safety education program shall be targeted at school students, guardians, and staff, as well as residents and businesses near the school site. Informational materials targeted to guardians and nearby residents and employees shall focus on the importance of vehicular safety, locations of school crossings, and school zone speed limits and hours.	Less than Significant with Mitigation
Impact TR-9: The proposed project or variant would not result in inadequate emergency access to the project site or adjoining areas.	Less than Significant	None	Less than Significant
Impact TR-10: The duration and magnitude of temporary construction activities would not result in substantial interference with pedestrian, bicycle, or vehicle circulation and accessibility to adjoining areas, thereby resulting in potentially hazardous conditions.	Less than Significant	**Improvement Measure I-TR-10: Implement Construction Management Strategies** As an improvement measure to further reduce impacts of project construction activities, the project sponsors should implement the following measures: • **Prepare a Traffic Control Plan for Construction.** To reduce potential conflicts between construction activities and pedestrians, transit, and automobiles during construction activities, the project sponsors should require that the construction contractor(s) prepare a traffic control plan for major phases of construction (e.g., demolition, construction, or renovation of individual buildings). The project sponsors and their construction contractor(s) should meet with relevant City agencies to coordinate feasible measures to reduce traffic congestion during major construction phases, including temporary relocation of transit stops and other measures to reduce potential traffic and transit disruption and to ensure bicycle and pedestrian safety in the immediate vicinity of the project site. For any work within the public right-of-way, the contractor would be required to comply with SFMTA's Regulations for Working in San	Less than Significant

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		Francisco Streets, which establish rules and permit requirements to assure that construction activities are completed safely and with the least possible interference with pedestrians, bicyclists, transit, and vehicular traffic. The construction time frames of the major phases may overlap with those of other development projects adjacent to the project site. Should overlapping occur, the project sponsors should coordinate with City agencies through the Transportation Advisory Staff Committee and the adjacent developer(s) to minimize the severity of any disruption to adjacent land uses and transportation facilities by overlapping construction-related transportation impacts. The project sponsors, in conjunction with the adjacent developer(s), could propose a construction traffic control plan that includes measures to reduce potential construction traffic conflicts to the extent feasible and commercially reasonable in light of noise regulations, labor and contract requirements, available daylight hours, and critical-path construction schedules. The plan could include measures such as coordinating material drop-offs and offering collective worker parking and transit to the job site. • **Reduce Single-Occupant-Vehicle Mode Share for Construction Workers.** To minimize parking demand and vehicle-trips by construction workers, the project sponsors should require that the construction contractor include methods in the construction traffic control plan to encourage workers to walk, bicycle, carpool, or use transit to access the project site. • **Provide Project Construction Updates to Adjacent Residents and Businesses.** To minimize construction impacts on access for nearby residences, institutions, and businesses, the project sponsors should provide regular updates on project construction to nearby residents and adjacent businesses via a newsletter and/or website. The updates could describe construction activities, peak construction vehicle activities (e.g., concrete pours), and travel lane closures.	
Impact TR-11: The proposed project or variant would not result in a substantial parking deficit that could create hazardous conditions affecting traffic, transit, bicycles, or pedestrians or significant delays affecting transit, where particular characteristics of the project or its site demonstrably render use of other modes infeasible.	Less than Significant	None	Less than Significant

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
Impact C-TR-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would not substantially contribute to cumulative impacts related to transportation and circulation for VMT, traffic hazards, transit capacity, pedestrians, bicycles, loading, emergency access, or construction transportation.	Less than Significant	**Improvement Measure I-C-TR-1: Reconfigure Eastbound Approach at Jennings Street/Evans Avenue/Middle Point Road** To improve vehicular mobility at the Jennings Street/Evans Avenue/Middle Point Road intersection under either the proposed project or the variant, the project sponsors should fund, and SFMTA should implement, improvements to reconfigure the eastbound Evans Avenue approach of the Jennings Street/Evans Avenue/Middle Point Road intersection from one 100-foot left-turn pocket, one shared through/left lane, and one shared through/right lane to one 100-foot left turn pocket, one through lane, and one shared through/right lane. No additional right-of-way would be required to implement this improvement. The project sponsors should fund their fair-share cost of the design and implementation of this improvement. Responsibility for funding the implementation of this improvement measure would be based on the relative contribution of each of the four properties to the increase in traffic volumes at the intersection. At this location, 1 percent of the added vehicle-trips would be generated by the India Basin Shoreline Park property, 0 percent would be generated by the 900 Innes property, 1 percent would be generated by the India Basin Open Space property, and 98 percent would be generated by the 700 Innes property. This improvement is feasible pending endorsement and subsequent funding commitment from SFMTA.	Less than Significant
Impact C-TR-2: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would substantially contribute to significant cumulative impacts related to transportation and circulation for transit delay.	Significant	**Mitigation Measure M-C-TR-2: Implement Transit-Only Lanes** SFMTA shall convert one of the two travel lanes in each direction of the Evans Avenue–Hunters Point Boulevard–Innes Avenue–Donohue Avenue corridor from a mixed-flow lane to a transit-only lane between the Jennings Street/Evans Avenue/Middle Point Road and Donahue Street/Robinson Street intersections. The transit-only lanes would be located in the curbside lanes, similar to those identified for Evans Avenue between Third Street and Jennings Street as part of the CPHPS EIR, and would improve bus travel speed and travel time reliability along the corridor. The project sponsors shall fund, and the SFMTA shall implement, this measure prior to the time the proposed project or variant would result in an increase in transit travel time to 18 minutes, 14 seconds during the weekday a.m. peak hour or 18 minutes, 39 seconds during the weekday p.m. peak hour, whichever comes first. The SFMTA shall monitor transit service and travel time along the corridor to assess when this threshold is met and the project sponsors shall pay their respective fair share amounts after invoicing by SFMTA. The project sponsors' fair-share portion of this cumulative mitigation measure under either the proposed project or the variant shall be based on the relative proportion of vehicle-trips contributed by the proposed project or the variant to cumulative traffic conditions such that mitigation would be needed. In this case, the fair share was determined by calculating the ratio of the total trips added by the project at the three study intersections adjacent to the 700 Innes property to the sum of eastbound and westbound through traffic without the project. Since the impact would occur during both the weekday a.m. and p.m. peak periods, the higher of the ratios for each individual peak period was conservatively selected to determine the fair-share contribution. This fair-share contribution would be 38 percent for the proposed project and 50 percent for	Significant and Unavoidable with Mitigation

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		the variant. Responsibility among the project sponsors for the four properties would then be further subdivided based on the relative proportion of vehicle-trips generated by each of the four properties. In this case, 1 percent of the vehicle-trips would be generated by the India Basin Shoreline Park property, 0 percent would be generated by the 900 Innes property, 1 percent would be generated by the India Basin Open Space property, and 98 percent would be generated by the 700 Innes property.	
3.6 Noise			
Impact NO-1: Construction of the proposed project or variant would not expose persons to noise levels in excess of standards established in the local general plan or noise ordinance (Sections 2907 and 2908 of the San Francisco Noise Control Ordinance).	Less than Significant	None	Less than Significant
Impact NO-2: Construction of the proposed project or variant would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	Significant	**Mitigation Measure M-NO-2a: Implement Noise Control Measures during Project Construction** The project sponsor shall include in all construction contracts a requirement to implement the following noise control measures at all project site properties during construction: • Power construction equipment shall be equipped with best available state-of-the-art noise-shielding and muffling devices. All equipment shall be properly maintained to prevent the generation of additional noise attributable to worn or improperly maintained parts. • Stationary-source construction equipment that may have a flexible location on-site (e.g., generators and compressors) shall be located to maintain the greatest feasible distance from sensitive land uses, and unnecessary idling of equipment shall be prohibited. • Where construction activities are to occur within 100 feet of a noise-sensitive receptor, either an existing off-site receptor or a future on-site receptor, a temporary noise barrier that will break the line of sight between the construction equipment and the sensitive receptor shall be placed to provide a minimum of 3-5 dBA noise reduction at the exterior of the noise-sensitive receptor. **Mitigation Measure M-NO-2b: Implement Noise Control Measures for Pile Driving** The project sponsor shall include in all construction contracts a requirement to implement the following noise control measures for pile driving at all project site properties during construction: • When pile driving is to occur within 600 feet of a noise-sensitive receptor (e.g., residential use), alternative quiet-pile driving techniques (i.e., non-impact type) shall be applied in lieu of conventional impact pile driving where feasible (based on soil/strata and other conditions as reviewed by and approved	Less than Significant with Mitigation

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		by the project engineer). Alternative quiet-pile driving techniques shall include but are not limited to methods such as screw, auger cast-in-place, or drilled-displacement. At the noise-sensitive receptor, noise from non-impact type pile-driving methodology shall not exceed an hourly L_{eq} equal to the applicable ambient + 10 dBA standard. • When applied within 600 feet of a noise-sensitive receptor (e.g., residential use), impact-type pile driving equipment shall be properly fitted with an intake and exhaust muffler and a sound-attenuating shroud, as specified by the manufacturer. The net effect of these noise control and sound-attenuating measures, which can also include a temporary sound barrier, shall provide sufficient noise reduction, relative to a non-shrouded operating impact pile-driving process, so that hourly L_{eq} noise from the pile-driving equipment at the noise-sensitive receptor does not exceed the applicable ambient + 10 dBA standard.	
Impact NO-3: Noise from stationary sources associated with operation of the proposed project or variant would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	Significant	**Mitigation Measure M-NO-3: Design Future Noise-Generating Uses near Residential Uses to Minimize the Potential for Noise Conflicts** Future noise-generating land uses shall be designed to minimize the potential for sleep disturbance at any future nearby residential uses (700 Innes) or existing nearby offsite residential receptors. Design approaches such as the following could be incorporated into future development plans for future noise-generating land uses to minimize the potential for noise conflicts from such uses with on-site sensitive receptors. • **Design of Future Noise-Generating Uses.** To reduce potential conflicts between sensitive receptors and new noise-generating land uses located adjacent or nearby 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 (residences). If this is not feasible, these types of facilities shall be enclosed or equipped with appropriate noise shielding. • **Stationary Equipment Noise Controls.** Noise attenuation measures shall be incorporated into all stationary equipment (including HVAC equipment, and emergency generators if present) installed on all buildings that include such stationary equipment. These noise attenuation measures shall be incorporated 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 can include providing sound enclosures/barriers, adding roof parapets to block noise, increasing setback distances from sensitive receptors, providing louvered vent openings, locating vent openings away from adjacent commercial uses, and restricting generator testing to the daytime hours.	Significant and Unavoidable with Mitigation
Impact NO-4: Noise from surface transportation sources associated with operation of the proposed project or variant would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	Significant	There are no feasible mitigation measures.	Significant and Unavoidable

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
Impact NO-5: The occupants of the proposed project or variant site would not be substantially affected by future noise levels on the site.	Less than Significant	None	Less than Significant
Impact NO-6: The proposed project or variant would result in exposure of persons to or generate excessive groundborne vibration.	Significant	**Mitigation Measure M-NO-6: Implement Vibration Mitigation Measure for Pile Driving** The project sponsor shall implement the following vibration control measure for pile driving during project construction: • When pile driving is to occur within 150 feet of a noise-sensitive receptor (e.g., residential use), alternative low-vibration driving techniques (i.e., non-impact type) shall be applied in lieu of conventional impact pile driving where feasible, based on soil/strata and other conditions as reviewed by and approved by the project engineer. Alternative pile driving techniques shall include but are not limited to methods such as screw, auger cast-in-place, or drilled displacement. • If the receiving land use is a historic structure, the project sponsor shall implement vibration monitoring during the vibration-causing process and/or equipment to ensure that measured levels (e.g., vibration velocity) at the receptor are compliant with the 0.12 in/sec peak particle velocity (PPV) standard. If measured vibration levels are found to exceed this standard, the process shall be suspended to assess the occurrence of damage and implement vibration isolation enhancements (e.g., trenches, shoring, etc.) as deemed necessary to enable compliant vibration levels upon resumption of activity. If damage to a building(s) occurs, the building(s) shall be remediated to its pre-construction condition at the conclusion of ground-disturbing activity.	Less than Significant with Mitigation
Impact-C-NO-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would substantially contribute to cumulative impacts related to noise.	Significant	No feasible mitigation measures are available to reduce the significant cumulative noise impact along the affected roadway segments, because the affected property is privately owned, thereby creating access constraints and limitations relative to additional mitigation.	Significant and Unavoidable

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
3.7 Air Quality			
Impact AQ-1: The proposed project or variant would generate emissions of criteria pollutants and precursors during construction, operations, and overlapping construction and operational activities that could 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 pollutants.	Significant	**Mitigation Measure M-AQ-1a: Minimize Off-Road Construction Equipment Emissions** The project sponsors shall comply with the following requirements: **A. Construction Emissions Minimization Plan.** Before a construction permit is issued for each project phase or property, as applicable, the project sponsors shall submit construction emissions minimization plans to the Environmental Review Officer (ERO) or the ERO's designated representative for review and approval. The construction emissions minimization plans shall detail compliance with the following requirements: (1) All off-road equipment greater than 25 hp and operating for more than 20 total hours over the entire duration of construction activities shall meet the following requirements: a) Where access to alternative sources of power is reasonably available, portable diesel engines shall be prohibited. b) Where portable diesel engines are required because alternative sources of power are not reasonably available, all off-road equipment shall have engines that meet either EPA or ARB Tier 4 Final off-road emission standards. If engines that comply with Tier 4 Final off-road emission standards are not commercially available, then the project sponsor shall provide the next cleanest piece of off-road equipment as provided by the step-down schedules in Table M-AQ-1a-1. i. For purposes of this mitigation measure, "commercially available" shall mean the availability of Tier 4 Final engines taking into consideration factors such as (i) critical-path timing of construction; (ii) geographic proximity to the project site of equipment; and (iii) geographic proximity of access to off-haul deposit sites. ii. The project sponsor shall maintain records concerning its efforts to comply with this requirement.	Significant and Unavoidable with Mitigation

TABLE M-AQ-1a-1
OFF-ROAD EQUIPMENT COMPLIANCE STEP-DOWN SCHEDULE

Compliance Alternative	*Engine Emissions Standard*	*Emissions Control*
1	*Tier 4 Interim*	*N/A*
2	*Tier 3*	*ARB Level 3 VDECS*
3	*Tier 2*	*ARB Level 3 VDECS*

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)

How to use the table: If the requirements of (A)(1)(b) cannot be met, then the project sponsor would need to meet Compliance Alternative 1. Should the project sponsor not be able to supply off-road equipment meeting Compliance Alternative 1, then Compliance Alternative 2 would need to be met. Should the project sponsor not be able to supply off-road equipment meeting Compliance Alternative 2, then Compliance Alternative 3 would need to be met, etc.

(2) The project sponsor shall require in its construction contracts that the idling time for off-road and on-road equipment be limited to no more than 2 minutes, except as provided in exceptions to the applicable State regulations regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, and Chinese) in designated queuing areas and at the construction site to remind operators of the 2-minute idling limit.

(3) The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications.

(4) The construction emissions minimization plan shall include estimates of the construction timeline by phase with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information may include but are 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: 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, reporting shall indicate the type of alternative fuel being used.

(5) The project sponsor shall keep the construction emissions minimization plan available for public review on-site during working hours. The project sponsor shall post at the perimeter of the project site a legible and visible sign summarizing the requirements of the plan. The sign shall also state that the public may ask to inspect the construction emissions minimization plan at any time during working hours, and shall explain how to request inspection of the plan. Signs shall be posted on all sides of the construction site that face a public right-of-way. The project sponsor shall provide copies of the construction emissions minimization plan to members of the public as requested.

B. Reporting. Quarterly reports shall be submitted to the ERO or the ERO's designated representative indicating the construction phase and off-road equipment information used during each phase, including the information required in A(4).

(1) Within 6 months of the completion of construction activities, the project sponsor shall submit to the ERO or the ERO's designated representative a final report summarizing construction activities. The final report shall indicate the start and end dates and duration of each construction phase. For each phase, the report shall include detailed information

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)

required in A(4).

C. Certification Statement and On-site Requirements. Before the start of construction activities, the project sponsor must certify that it is in compliance with the construction emissions minimization plan, and that all applicable requirements of the plan have been incorporated into contract specifications.

Mitigation Measure M-AQ-1b: Minimize On-Road Construction Equipment Emissions

The project sponsors shall include in all construction contracts a requirement for construction contractors to implement the following measures to reduce construction haul truck emissions, to the extent commercially available (taking into consideration such factors as critical-path timing and geographic proximity).

A. Engine Requirements

1) All on-road heavy-duty diesel trucks with a gross vehicle weight rating of 19,500 pounds or greater used in connection with the project site (such as haul trucks, water trucks, dump trucks, and concrete trucks) shall be model year 2010 or newer, where feasible in light of commercial availability.

B. Construction Emissions Minimization Plan. As part of the construction emissions minimization plan identified above in Mitigation Measure M-AQ-1a, Section A, the construction contract shall state, in reasonable detail, how the contractor shall meet the requirements of Section A.

1) The construction emissions minimization plan shall include the model year of the heavy-duty trucks with a gross vehicle weight rating of 19,500 pounds or greater and estimates of the expected fuel usage (or miles traveled or hours of operation, as relevant) 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.

2) See Mitigation Measure M-AQ-1a, Section A, Part 5.

C. Reporting. See Mitigation Measure M-AQ-1a, Section B.

D. Monitoring. See Mitigation Measure M-AQ-1a, Section C.

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)

Mitigation Measure M-AQ-1c: Utilize Best Available Control Technology for In-Water Construction Equipment

The project sponsors shall include in construction contracts a requirement to implement the following measures to reduce emissions from in-water equipment:

A. Engine Requirements

1) The construction barge shall have engines that meet or exceed EPA marine engine Tier 3 emissions standards, if commercially available (taking into consideration such factors such as critical-path timing and geographic proximity).

2) The project sponsors shall also ensure that the construction work boat engines shall be model year 2005 or newer or meet NO_X and PM emissions standards for that model year, if commercially available (taking into consideration such factors such as critical-path timing and geographic proximity).

B. Construction Emissions Minimization Plan. As part of the construction emissions minimization plan identified above under Mitigation Measure M-AQ-1a, Section A, the contractor shall state, in reasonable detail, how the contractor shall meet the requirements of Section A.

1) The construction emissions minimization 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.

2) See Mitigation Measure M-AQ-1a, Section A, Part 5.

C. Reporting. See Mitigation Measure M-AQ-1a, Section B.

D. Monitoring. See Mitigation Measure M-AQ-1a, Section C.

Mitigation Measure M-AQ-1d: Offset Emissions for Construction and Operational Ozone Precursor (NOx and ROG) Emissions

Before the first construction permit is issued, the project sponsors, with oversight of the ERO or the ERO's designated representative, shall implement one of the following measures:

(1) Directly fund or implement specific emissions offset project(s) within the SFBAAB to achieve the one-time reduction of 6 tons of ozone precursor emissions. This amount is intended to offset the maximum emissions year during construction or operations (or overlapping construction and operations) that would exceed the 10 tons per year thresholds for each NOx and ROG, which would occur during operations of the fully built project. Specifically, the worst-case mitigated operational emissions are associated with the variant and are estimated at 11.96 tons per year of ROG emissions and 14 tons per

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		year of NOx emissions, which would exceed the 10-tons NOx and ROG annual thresholds by 1.96 tons and 4 tons, respectively. Thus, the combined ozone precursor emissions (NOx and ROG) would exceed the annual 10-tons threshold in total by 5.96 tons and requires an offset of 6 tons of NOx and ROG emissions. To qualify under this mitigation measure, the specific offset project(s) shall result in 6 tons of NOx and ROG emissions reductions within the SFBAAB that would not otherwise be achieved through compliance with existing regulatory requirements. Preferred offset project(s) are implemented locally within the City and County of San Francisco. Before implementation of the offset project(s), the project sponsors shall obtain the ERO's approval of the offset project(s) by providing documentation of the associated estimated reduction amount of NO_X and ROG emissions (in tons per year) within the SFBAAB. The project sponsors shall also notify the ERO within 6 months of completion of the offset project(s) for verification. or (2) Pay a one-time mitigation emissions offset fee to the BAAQMD Bay Area Clean Air Foundation to fund BAAQMD's reduction effort in the SFBAAB of 6 tons of ozone precursor emissions. Specifically, the worst-case mitigation offset fee is asociated with the variant offset amount of 6 annual tons of combined NO_X and ROG emissions and will be at a cost per ton consistent with Appendix G of the Carl Moyer grant guidelines in effect at the date of the first construction permit issuance . This fee is currently estimated to be $30,000 per weighted ton per year of ozone precursor emissions (plus a 5 percent administrative fee). The mitigation offset fee shall fund one or more emissions reduction projects within the SFBAAB. This one-time fee is intended to fund reduction project(s) for purposes of offsetting the estimated annual tonnage of combined construction and operational emissions under the variant buildout scenario, which is conservatively assumed to occur in 2022. The project sponsors shall also provide documentation of offset fee payment to the ERO. Acceptance of this fee by BAAQMD shall serve as acknowledgment and a commitment by BAAQMD to one or more emissions reduction project(s) within one year of receipt of the mitigation fee to achieve the emissions reduction objectives specified above. BAAQMD shall provide documentation to the ERO and to the project sponsors describing the emission reduction project(s) funded by the mitigation fee, including the amount of emissions of ROG and NO_X reduced (in tons per year) within the SFBAAB from the emissions reduction project(s). If any portion of the mitigation offset fee remains unspent after implementation of the emission reduction project(s), the project sponsors shall be entitled to a refund in that amount from BAAQMD. To qualify under this mitigation measure, the specific emissions reduction project(s) shall result in emission reductions within the SFBAAB that would not otherwise be achieved through compliance with existing regulatory requirements. If the project sponsors commit to the land use assumptions consistent with the proposed project (rather than with the variant) for the term of the development agreement, the one-time reduction of 6 tons of ozone precursor emissions listed above under (1) and (2) shall be reduced to a one-time reduction of 3 tons of ozone precursor emissions. This 3 tons reduction amount is intended to offset the maximum emissions year conservatively assumed to occur during the second year of proposed project construction in 2019. Specifically, the mitigated construction related NOx emissions for the proposed project are estimated at	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		12.60 tons, which would exceed the 10-tons threshold by 2.6 tons and require an offset of 3 tons of NOx. **Mitigation Measure M-AQ-1e: Implement Best Available Control Technology for Operational Diesel Generators** To reduce operational NO_X and PM emissions under the proposed project or variant, the project sponsors, as applicable, shall require in applicable contracts that the operational backup diesel generators: (1) comply with ARB Airborne Toxic Control Measure 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 final certified engine or (B) Tier 4 interim 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 PM reduction as the identical ARB-verified model and BAAQMD approves of its use. The project sponsors, as applicable, 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 before a permit for a backup diesel generator is issued by any City agency. Once operational, all diesel backup generators shall be maintained in good working order for the life of the equipment and any future replacement of the diesel backup generators shall be required to be consistent with these emissions specifications. The operator of the facility at which the generator is located shall maintain records of the testing schedule for each diesel backup generator for the life of that diesel backup generator. The facility operator shall provide this information for review to the Planning Department within 3 months of a request for such information. **Mitigation Measure M-AQ-1f: Prepare and Implement Transportation Demand Management** To reduce operational mobile source emissions, 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 associated with the 700 Innes and India Basin Open Space properties by at least 15 percent compared to the aggregate daily one-way vehicle trips identified in the project-related Transportation Impact Study dated July 2017 and included in EIR Appendix F. 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 at least 15 percent compared to the aggregate daily one-way vehicle trips identified in the project-related Transportation Impact Study dated July 2017 and included in EIR Appendix F. To ensure that this reduction goal could be reasonably achieved, the TDM plan will have a monitoring goal of reducing by 15 percent the daily one-way vehicle trips for each building that has received a certificate of occupancy and that is at least 75 percent occupied, relative to the one-way vehicle trips anticipated for that building based on expected development on that parcel. The calculations shall use the trip generation rates	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		contained in the project's Transportation Impact Study. There shall be a transportation management association that would be responsible for the administration, monitoring, and adjustment of the TDM plan. The project sponsors shall be responsible for monitoring implementation of the TDM plan and proposing adjustments to the 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. Actual TDM measures selected should include those from the City's adopted TDM Program Standards, which describe the scope and applicability of candidate measures in detail and include: • **Active Transportation:** Streetscape improvements to encourage walking, secure bicycle parking, shower and locker facilities for cyclists, subsidized bikeshare memberships for project occupants, bicycle repair and maintenance services, and other bicycle-related services. • **Car-Share:** Car-share parking spaces and subsidized memberships for project occupants. • **Delivery:** Amenities and services to support delivery of goods to project occupants. • **Family-Oriented Measures:** On-site childcare and other amenities to support the use of sustainable transportation modes by families. • **High-Occupancy Vehicles:** Carpooling/vanpooling incentives and shuttle bus service. • **Information and Communications:** Multimodal wayfinding signage, transportation information displays, and tailored transportation marketing services. • **Land Use:** On-site affordable housing and healthy food retail services in underserved areas. • **Parking:** Unbundled parking, short-term daily parking, 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) 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 of vehicle trips to and from the project site to determine the plan's effectiveness, as described in "TDM Plan Monitoring and Reporting" below. The TDM plan shall have been approved by the Planning Department before site permit application for the first building, and the plan shall be implemented for each new building upon the issuance of the certificate of occupancy for that building. The TDM plan shall be submitted to the Planning Department for approval to ensure that components of the plan intended to meet the reduction target are shown in the plan and/or ready to be implemented upon the issuance of each certificate of occupancy The TDM plan shall remain a component of the proposed project and variant to be implemented for the duration of the proposed project or variant. **TDM Plan Monitoring and Reporting:** The TDM Coordinator shall collect data, prepare monitoring reports, and submit them to the Planning Department. To ensure that the goal of reducing by at least 15 percent the aggregate daily one-way vehicle trips is reasonably achievable, the project sponsor shall monitor	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		daily one-way vehicle trips for all buildings that have received a certificate of occupancy, and shall 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 project's Transportation Impact Study. **Timing**. The TDM Coordinator shall collect monitoring data and shall begin submitting monitoring reports to the Planning Department 18 months after issuance of the first certificate of occupancy for buildings on the 700 Innes property that include off-street parking or the establishment of surface parking lots or garages. Thereafter, annual monitoring reports shall be submitted (referred to as "reporting periods") until five consecutive reporting periods show that the full built project has met the reduction goal. From that point on, monitoring data shall be submitted to the Planning Department once every three years. Each trip count and survey (see below for description) shall be completed within 30 days after the end of the applicable reporting period. Each monitoring report shall be completed within 90 days after the applicable reporting period. The timing of monitoring reports shall be modified such that a new monitoring report is submitted 12 months after adjustments are made to the TDM plan 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 proposed project or variant, such as annual reporting under the proposed project's or variant's development agreement. **Term.** The project sponsors shall monitor, submit monitoring reports, and make plan adjustments until the earlier of: (i) the expiration of the development agreement, or (ii) the date the Planning Department determines that the reduction goal has been met for up to eight consecutive reporting periods. Notwithstanding the foregoing or any other provision of this mitigation measure, all obligations for monitoring, reporting, and adjusting 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: (1) Trip Count and Intercept Survey: Provide a site-wide trip count and intercept survey of persons and vehicles arriving and leaving the project site 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. (2) Travel Demand Information: The above trip count and survey information shall be able to provide the	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		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 based on the monitoring results if three consecutive reporting periods demonstrate that measures in the TDM plan are not achieving the reduction goal. The TDM plan adjustments shall be made in consultation with Planning Department staff and may require refinements to existing measures (e.g., change to subsidies, increased bicycle parking), inclusion of new measures (e.g., a new technology), or removal of existing measures (e.g., measures shown to be ineffective or induce vehicle trips). If the monitoring results from three consecutive reporting periods demonstrate that measures in the TDM plan are not achieving the reduction goal, the TDM plan adjustments shall occur within 270 days after the last consecutive reporting period. The TDM plan adjustments shall occur until the monitoring results of three consecutive reporting periods demonstrate that the reduction goal is achieved. If after implementing TDM plan adjustments, the project sponsors have not met the reduction goal for up to eight consecutive reporting periods, as determined by the Planning Department, then the project sponsors may, at any time thereafter, elect to use another means to address the shortfall in meeting the TDM plan reduction target. Specifically, in addition to paying the emission offset fees set forth in Mitigation Measure M-AQ-1d, the project sponsors may pay an additional offset fee in accordance with Mitigation Measure M-AQ-1d. This additional offset fee would be 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 anticipated shortfall 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 15 percent TDM goal, adjusted for the actual percentage of aggregate daily one-way vehicle trip reduction achieved in the most recently monitored year.	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
Impact AQ-2: The proposed project or variant would generate construction-related and operational emissions of criteria pollutants and precursors that could conflict with or obstruct implementation of the applicable air quality plan.	Significant	See **Mitigation Measures M-AQ-1a** through **M-AQ-1f**	Less than Significant with Mitigation
Impact AQ-3: The proposed project or variant would generate emissions that could expose sensitive receptors to substantial pollutant concentrations.	Significant	See **Mitigation Measures M-AQ-1a** through **M-AQ-1f**	Significant and Unavoidable with Mitigation
Impact AQ-4: The proposed project or variant would not generate emissions that create objectionable odors affecting a substantial number of people.	Less than Significant	None.	Less than Significant
Impact-C-AQ-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future development in the project area, would contribute to cumulative regional air quality impacts.	Significant	See **Mitigation Measures M-AQ-1a** through **M-AQ-1f**	Significant and Unavoidable with Mitigation
Impact C-AQ-2: The proposed project or variant, in combination with past, present, and reasonably foreseeable future development in the project area, would contribute to cumulative health risk impacts on sensitive receptors.	Significant	See **Mitigation Measures M-AQ-1a** through **M-AQ-1f**	Significant and Unavoidable with Mitigation
3.8 Greenhouse Gas Emissions			
Impact-C-GG-1: The proposed project or variant would generate greenhouse gas emissions, but not at levels that would result in a significant	Less than Significant	None	Less than Significant

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing greenhouse gas emissions.			
3.9 Wind			
Impact WI-1: The proposed project or variant would alter wind in a manner that substantially affects public areas or outdoor recreation facilities.	Significant	**Mitigation Measure M-WI-1a: Wind Impact Analysis and Mitigation for Buildings 100 Feet or Greater in Height During Partial Buildout** With the goal of preventing a net increase in hazardous wind hours beyond those identified by prior wind tunnel testing conducted for this EIR during project construction, prior to obtaining a building permit for any project or variant building within the project site proposed to be at least 100 feet in height, the project sponsors shall undertake or cause their construction contractor(s) to undertake a wind impact analysis for such proposed building. a. The wind impact analysis shall be conducted by a qualified wind consultant approved by the Planning Department's Environmental Review Officer (ERO). The wind consultant shall review the proposed building design taking into account the building design and feasible mitigation required by Mitigation M-WI-1c. The wind consultant shall provide a qualitative analysis of whether the building could result in a net increase in hazardous wind hours under partial build-out conditions that are beyond those identified for full build-out conditions by prior wind tunnel testing conducted for this EIR. The analysis shall compare the exposure, massing, and orientation of the proposed building to the same building in the representative massing models for the proposed project or variant. The comparison shall also analyze the potential wind impacts of the proposed building relative to existing conditions, those identified in the discussion of operational wind hazards, and to the City's wind hazard criterion. The existing conditions in this analysis shall be considered to include any existing buildings at the site, the as-built designs of all previously completed structures, and the then-current designs of approved but as-yet-unbuilt structures that would be completed by the time of occupancy of the subject building. b. If the qualified wind consultant determines that the building could result in a net increase in hazardous wind hours under partial build-out conditions that are beyond those identified for full build-out conditions by prior wind tunnel testing conducted for this EIR, but in the consultant's professional judgment, temporary measures would reduce such impact, the consultant shall notify the ERO and the building applicant. The consultant's professional judgment may be informed by the use of "desktop" analytical tools, such as computer tools relying on results of prior wind tunnel testing for the proposed project and other projects (i.e., "desktop" analysis does not include new wind tunnel testing). The analysis shall include consideration of wind location, duration, and speed of wind. The building applicant shall propose temporary measures to reduce wind hazards under partial build-out conditions to the extent feasible. Such temporary measures include but are not limited to the following measures: ▪ At building corners, introduce hard landscaping such as localized porous/solid screens, soft landscaping such as localized trees, or hedge plantings. ▪ Install semi-permanent windscreens or temporary landscaping features (such as shrubs in large	Significant and Unavoidable with Mitigation

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		planters) that provide some wind sheltering and also direct pedestrian and bicycle traffic around hazardous areas. ▪ Introduce solid/porous screens and soft landscaping to create localized pockets suitable for use as recreational space or for lengthy use as outdoor seating. ▪ Introduce temporary canopies and cabanas at outdoor seating areas. The wind consultant shall then reevaluate the building design(s) taking into account the temporary measures. If the wind consultant demonstrates to the satisfaction of the ERO that the modified design, taking into account any temporary measures, would not create a net increase in hazardous wind hours under partial build-out conditions that are beyond those identified for full build-out conditions by prior wind tunnel testing conducted for this EIR and in subsequent wind analysis required by this mitigation measure, no further review would be required. c. If the qualified wind consultant is unable to demonstrate that temporary measures would reduce wind hazard impacts under partial build-out conditions to less-than-significant levels, then wind tunnel testing or an equivalent method of quantitative evaluation shall be required. The proposed building shall be wind tunnel tested using a model that represents the proposed building in the context of existing partial build-out conditions. The testing shall include test points deemed appropriate by the consultant and agreed upon by the Planning Department to determine the wind performance of the building, such as building entrances and sidewalks. If the wind tunnel testing determines that the building's design, including temporary measures, would increase the hours of wind hazard or the extent of area subject to hazardous winds under partial build-out conditions beyond those identified for full build-out conditions by prior wind testing conducted for this EIR, the wind consultant shall notify the Planning Department and the building applicant. The building applicant shall propose feasible mitigation strategies including any of the above measures to reduce wind hazards. If the wind consultant demonstrates to the satisfaction of the ERO that the modified design would not create a net increase in hazardous wind hours or locations under partial build-out conditions beyond those identified for full build-out conditions by prior wind tunnel testing conducted for this EIR, no further review would be required. d. If the qualified wind consultant is unable to demonstrate that wind mitigation measures would reduce wind hazard impacts to less-than-significant levels after wind tunnel testing or an equivalent method of quantitative evaluation, the building applicant shall provide a Wind Safety Plan to the Planning Department and the ERO. The Wind Safety Plan shall include recommendations for site safety precautions for times when very strong winds occur on-site or may be expected, such as when high-wind watches or warnings are announced by the National Weather Service. Site safety precautions can include, but not be limited to any of the following: ▪ warning pedestrians and bicyclists of hazardous winds by placing weighted warning signs; and ▪ identifying alternative pedestrian and bicycle routes that avoid areas likely to be exposed to hazardous winds. The project sponsors shall ensure by conditions of approval for any construction activity, and the Planning Department shall ensure by conditions of approval for building permits and site permits, that the project sponsors and the subsequent building developer(s) cooperate to implement and maintain all	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		measures and precautions identified by the wind consultant. **Mitigation Measure M-WI-1b: Temporary Wind Reduction Measures during Construction** For the active construction areas, the wind consultant may identify those construction sites that would be especially exposed to strong winds. The consultant may recommend construction site safety precautions for times when very strong winds occur on-site or may be expected, such as when high-wind watches or warnings are announced by the National Weather Service. The objective of these precautions shall be to minimize risks and prevent injuries to workers and the public from stacked materials, such as shingles and sheets of plywood, that can be picked up and carried by strong winds, and from temporary signage, siding or roofing, or light structures that could be detached and carried by the wind. As part of construction site safety planning, the project sponsors shall require, as a condition of contracts, that contractors consider all potential wind-related risks to the public from their construction activities, and shall develop a safety plan to address and control all such risks related to their work. The safety plan could include but not be limited to measures such as: • warning pedestrians and bicyclists of hazardous winds by placing weighted warning signs; • identifying alternative pedestrian and bicycle routes that avoid areas likely to be exposed to hazardous winds; and • installing semi-permanent windscreens or temporary landscaping features (such as shrubs in large planters) that provide some wind sheltering and also direct pedestrian and bicycle traffic around hazardous areas. **Mitigation Measure M-WI-1c: Reduce Effects of Ground-Level Hazardous Winds through Ongoing Review** In order to mitigate to the extent feasible new wind hazards created with full build-out under the proposed project or variant identified by prior wind testing, a wind impact analysis by a qualified wind consultant shall be required prior to building permit issuance for any building more than 100 feet tall. The purpose of this supplemental wind impact analysis would be to prevent the total duration of wind hazard exceedances across the project site from exceeding the total duration of wind hazard exceedances under full build-out conditions with the proposed project or variant determined in the Wind Tunnel Report, included in EIR Appendix H, based on the prior wind tunnel testing undertaken by BMT Fluid Mechanics (BMT). Based on the Wind Tunnel Report, the total number of wind hazard exceedance hours shall not exceed 767 hours • The proposed building(s) shall be wind tunnel tested using a model that represents the current proposed building(s) defined as the building configurations assumed in the Wind Tunnel Report updated to reflect the design of any constructed buildings at the site and the as-built designs of all approved but yet unbuilt structures .The testing shall include the test points previously studied (see Table 3.9-1). If the wind tunnel testing determines that the building's design would increase the total duration of hazardous winds from the conditions identified in the Wind Tunnel Report, the wind consultant shall notify the Planning Department and the building applicant. The building applicant shall then propose feasible mitigation	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		strategies, including any architectural features, to reduce the total duration of wind hazards. ▪ At building corners, introduce hard landscaping such as localized porous/solid screens, soft landscaping such as localized trees, or hedge plantings. ▪ Introduce canopies along building façades at the pedestrian level. ▪ Introduce solid/porous screens and soft landscaping to create localized pockets suitable for use as recreational space or for lengthy use as outdoor seating. ▪ Introduce parapets, canopies, and cabanas at outdoor seating areas. If the wind consultant demonstrates to the satisfaction of the ERO that the modified design would not increase the total duration of hazardous winds identified in prior wind tunnel testing conducted for this EIR, no further design modifications would be required. • If the wind consultant determines that even after the modifications of the design that the building(s) would result in greater than 767 wind hazard exceedance hours, the wind consultant shall work with the project sponsors, architect, and/or landscape architect to identify specific additional feasible measures that may include landscaping features and street furniture that would reduce the total duration of wind hazards to the extent feasible. The ability of the design alterations to reduce the wind hazard to the extent feasible shall be demonstrated by subsequent wind tunnel testing of the modified design and landscaping that compares the modified building design and landscaping to the wind hazard exceedance hours of 767 hours for the proposed project, no further review is required.	
Impact C-WI-1: The proposed project or variant would not combine with past, present, or reasonably foreseeable future projects to alter wind in a manner that would substantially affect public areas or outdoor recreation facilities.	Less than Significant	None	Less than Significant

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
3.10 Shadow			
Impact SH-1: The proposed project or variant would not create new shadow in a manner that would substantially affect outdoor recreation facilities or other public areas.	Less than Significant	None	Less than Significant
Impact C-SH-1: The proposed project or variant would not combine with past, present, or reasonably foreseeable future projects to create new shadow in a manner that would affect outdoor recreation facilities or other public areas.	Less than Significant	None	Less than Significant
3.11 Recreation			
Impact RE-1: The proposed project or variant would not increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facilities may occur or be accelerated.	Less than Significant	None	Less than Significant
Impact RE-2: The proposed project and variant would include recreational facilities, the construction of which would cause significant environmental effects but would not require the construction or expansion of other recreational facilities that might have an adverse effect on the environment.	Significant	See Mitigation Measures in Section 3.5, "Transportation and Circulation"; Section 3.6, "Noise"; Section 3.7, "Air Quality"; Section 3.14, "Biological Resources"; and Section 3.15, "Hydrology and Water Quality."	Less than Significant with Mitigation
Impact RE-3: The proposed project or variant would not physically degrade existing recreational facilities.	Less than Significant	None	Less than Significant

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
Impact-C-RE-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would not substantially contribute to cumulative impacts related to recreation.	Less than Significant	None	Less than Significant
3.12 Utilities and Service Systems			
Impact UT-1: The proposed project or variant would not exceed wastewater treatment requirements of the applicable RWQCB or result in a determination by the wastewater treatment provider that it has inadequate capacity to serve the projected demand in addition to the provider's existing commitments.	Less than Significant	None	Less than Significant
Impact UT-2: The proposed project or variant would require or result in the construction of new water, wastewater, or stormwater drainage treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	Significant	See Mitigation Measures listed in Section 3.5, "Transportation and Circulation"; Section 3.6, "Noise"; and Section 3.7, "Air Quality,"	Less than Significant with Mitigation
Impact UT-3: The proposed project or variant would not require new or expanded water supply resources or entitlements.	Less than Significant	None	Less than Significant
Impact-C-UT-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would not substantially contribute to cumulative impacts related to utilities and services systems.	Less than Significant	None	Less than Significant

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
3.13 Public Services			
Impact PS-1: The proposed project or variant would not increase demand for fire services in a manner that would result in the need for construction or alteration of fire protection facilities.	Less than Significant	None	Less than Significant
Impact PS-2: The proposed project or variant would not increase demand for police services in a manner that would result in the need for construction or alteration of law enforcement facilities.	Less than Significant	None	Less than Significant
Impact PS-3: The proposed project or variant would not increase demand for school services in a manner that would result in the need for construction or alteration of school facilities.	Less than Significant	None	Less than Significant
Impact PS-4: The proposed project or variant would not increase demand for library services in a manner that would result in the need for construction or alteration of library facilities.	Less than Significant	None	Less than Significant
Impact-C-PS-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would not substantially contribute to cumulative impacts related to public services.	Less than Significant	None	Less than Significant

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
3.14 Biological Resources			
Impact BI-1: The proposed project or variant would have an adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.	Significant	In addition to the mitigation measures listed below, see • Mitigation Measure M-HY-1a, "Monitor Turbidity during Construction" and Mitigation Measure M-HY-1b, "Implement Pile Removal Best Management Practices" **Mitigation Measure M-BI-1a: Prepare and Implement a Hydroacoustic Monitoring Program for Special-Status Fish and Marine Mammals** Before the start of construction, the project sponsors shall prepare a hydroacoustic monitoring plan and obtain approval from NMFS. The plan shall be provided to NMFS for review and approval before construction. 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, as feasible, and below NMFS thresholds for marine mammals. The plan shall include but not be limited to the following measures for special-status fish: • 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 to complete installation of the steel pilings, in accordance with seismic safety or other engineering criteria. • The smallest pile driver and minimum force necessary shall be used to complete the work. • The hammer shall be cushioned using a 12-inch-thick wood block during all impact hammer pile-driving operations to the extent feasible. • A bubble-curtain, air barrier, or similar technology shall be employed during all impact pile-driving activities. • A "soft start"[2] 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. • 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 rising to the surface, work shall be halted by the biologist, and the	Less than Significant with Mitigation

[2] 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 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.

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		cumulative SEL up to that point shall be examined. If the cumulative SEL is close to or exceeds the threshold, then pile-driving activities will cease until the next day. • 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 shutdown requirements. A monitoring report shall be prepared for submission to NMFS (submitted monthly and at the completion of all pile-driving/pile removal activities). • The hydroacoustic monitoring program shall incorporate NMFS-recommended work windows to avoid impacts on special-status fish species that have the potential to occur at the project site during only certain portions of the year. This includes limiting work between December 1 and May 31 to avoid impacts on steelhead and green sturgeon, and monitoring for herring spawning events in the vicinity of the project site between December 1 and February 29. In the event that monitoring identifies a herring spawning event that could be affected by project-related construction activities, all in-water work shall be temporarily halted. In-water work shall not resume until a qualified biologist determines that no additional impact on spawning herring would occur. The project sponsors shall coordinate with the NMFS Office of Protected Resources pursuant to the Marine Mammal Protection Act to develop an appropriate plan and monitoring program for potential effects to species during noise generating work. The plan shall include but not be limited to the following measures for marine mammals: • Zones of influence shall be based on the estimated NMFS injury threshold contours for the different marine mammals. These zones of influence may be modified, based on subsequent analysis of the actually proposed piles, equipment, and activity before construction, but only with the approval of NMFS. • Hydroacoustic monitoring according to the hydroacoustic monitoring plan 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 before construction may be modified, based on field measurements of different pile-driving activity, if the field measurements indicate different threshold contours than estimated before construction, but only with the approval of NMFS. • During pile-driving and pile-removal activity, a NMFS-approved marine mammal observer would monitor the work area for marine mammal presence. If a marine mammal is observed in or swimming into an unauthorized zone of influence, work would stop until the animal was observed, or determined to	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		be, outside of the area of potential injury. • A "soft start"[3] technique shall be employed each day upon commencement of pile-driving activity, any time after pile-driving activity ceases for more than 1 hour, and any time after pile-driving activity shuts down because a marine mammal has entered a safety zone. • All pile-driving and pile-removal activity shall be monitored by an NMFS-approved biological monitor before and during all pile driving 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 activities; any field sound measurements; marine mammal sightings; and implementation of soft-start, shutdown, and safety-zone requirements. A monitoring report shall be prepared for submission to NMFS (submitted monthly and at the completion of all pile-driving/pile-removal activities). **Mitigation Measure M-BI-1b: Implement Avoidance and Minimization Measures for Special-Status Species** The project sponsors and the project construction contractor(s) they procure shall implement the following avoidance and minimization measures for special-status species: • **Implement a Worker Environmental Awareness Program (WEAP):** An education program shall be developed and implemented by a qualified biologist and attended by all construction personnel performing demolition or ground-disturbing work before such work commences on-site. Upon completion of the program, employees shall sign a form stating that they attended the training session and understand all conservation and protection measures. All future construction personnel shall be required to attend the presentation (either an in-person presentation or a recording of the prior presentation) and sign the form before beginning work on the project site. The signed forms shall be kept on file for the duration of construction and provided to the City and County of San Francisco upon request. The WEAP shall include but not be limited to education on: (a) applicable State and federal laws, environmental regulations, project permit conditions, and penalties for noncompliance; (b) special-status plant and animal species with the potential to be encountered on or in the vicinity of the project site during construction; (c) avoidance measures and a protocol for encountering special-status species, including a communication chain; (d) preconstruction surveys and biological monitoring requirements associated with each phase of work and at specific locations within the project site (e.g., shoreline work), as biological resources and protection measures will vary depending on the location of work on the site, the time of year, and the type of construction activity;	

[3] 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.

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)

(e) known sensitive resource areas in the project vicinity that are to be avoided and/or protected, as well as approved project work areas, access roads, and staging areas; and

(f) BMPs (e.g., straw wattles or spill kits) and their locations around the project site for erosion and species exclusion, in addition to general housekeeping requirements.

- **Avoid Attracting Predators:** To eliminate attractions for predators, all food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in solid, closed containers (trash cans) and removed from the entire construction site at the end of each working day.
- **Avoid Entanglement:** Tightly woven fiber netting or similar material shall be used at the project site for erosion control or other purposes to ensure that individuals are not trapped. This limitation shall be communicated to the contractor through use of special provisions included in the bid solicitation package. Plastic monofilament netting (erosion control matting) or similar material shall not be used at the project site because special-status species may become entangled or trapped in it.

Mitigation Measure M-BI-1c: Prepare and Implement a Vegetation Restoration Plan and Compensatory Mitigation

- To restore temporarily affected habitat, the project sponsors shall prepare and implement a vegetation restoration plan with detailed specifications for minimizing the introduction of invasive weeds and restoring all temporarily disturbed areas, and shall ensure that the contractor successfully implements the plan. The plan shall indicate the best time of year for seeding to occur.

  To facilitate preparation of the plan, the project sponsors shall ensure that, before construction, a botanist (experienced in identifying sensitive plant species in the project area) performs additional preconstruction surveys of the areas to collect more detailed vegetation composition data, including species occurrence, vegetation characterization (e.g., tree diameter size), and percent cover of plant species. Photo documentation shall be used to show preproject conditions.

  The minimum weed control and restoration measures and the success criteria to be included in the vegetation restoration plan are described below.

  Invasive Weed Control Measures

  Invasive weeds readily colonize soils that have been disturbed by grading or other mechanical disturbance. The project sponsors shall incorporate the following measures into the construction plans and specifications to prevent the spread of invasive weeds into nearby areas:

  (a) Construction equipment shall arrive at the project area free of soil, seed, and plant parts to reduce the likelihood of introducing new weed species.

  (b) Any imported fill material, soil amendments, gravel, etc., required for construction and/or restoration activities that would be placed within the upper 12 inches of the ground surface shall be free of vegetation and plant material.

  (c) Certified, weed-free, imported erosion-control materials (or rice straw in upland areas) shall be used

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		exclusively, as applicable (this measure concerns biological material and does not preclude the use of silt fences and other measures). (d) The environmental awareness training program for construction personnel shall include an orientation regarding the importance of preventing the spread of invasive weeds. (e) To reduce the seed bank in weed-dominated ruderal areas, the contractor shall mow, disk, apply spot-applications of herbicide to weeds, and/or remove weeds, as appropriate (i.e., before seed set and dispersal) and before surface clearing and site preparation. (f) Before tracked and heavy construction equipment leaves the project area, any accumulation of plant debris, soil, and mud shall be washed off the equipment or otherwise removed on-site, and air filters shall be blown out. (g) No invasive species shall be used in any restoration seeding. (h) Implementation of these measures during construction and site restoration activities shall be verified and documented by a biological or environmental monitor. **Minimum Restoration Measures** Restoration areas are portions of the project area that would be disturbed during project-related construction activities but would subsequently be restored to their preconstruction conditions, or better. No soil containing plant materials may be used for revegetation to avoid inadvertent introduction of nonnative plant pathogens like phytophthora (Phytophthora sp.). To restore temporarily disturbed areas, the project sponsors shall ensure the following: (a) Native coastal scrub and tidal marshland areas shall be reseeded with a native seed mix or replanted with native stock. (b) For any tree to be removed, RPD and BUILD shall ensure that replacement trees are planted within or in the vicinity of the project area as follows: o Trees shall be replaced within the first year after the completion of construction or as soon as possible in an area where construction is completed, during a favorable time of year as determined by an arborist or biologist with experience in restoration. o Selection of replacement sites and installation of replacement plantings shall be supervised by an arborist or biologist with experience in restoration. Irrigation of tree plantings during the initial establishment period shall be provided as deemed necessary by an arborist or biologist with experience in restoration. o An arborist or biologist with experience in restoration shall monitor new plantings at least once a year for 5 years or as otherwise determined by the applicable resource agencies. o Any replacement plantings installed as remediation for failed plantings shall be planted as stipulated here for original plantings, and shall be monitored for 5 years after installation, or as otherwise determined by the applicable resource agencies.	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		Minimum Success Criteria Unless the applicable resource agencies determine that different but equivalent or more stringent criteria should be applied, the success criteria for restoring temporarily disturbed areas shall be as follows: (a) All temporarily disturbed areas shall be restored to approximately their baseline condition. Vegetation cover shall be at least 70 percent of the baseline; that is, absolute cover of the revegetation site shall be no less than 70 percent of the baseline absolute cover of native and naturalized species (i.e., excluding target invasives). Cover in the revegetation site shall contain no more than 10 percent absolute cover of target invasives or no more cover of invasives than the baseline, whichever is greater. (b) Vegetation in restoration areas shall be functional, fully established, and self-sustaining as evidenced by successive years of healthy vegetative growth; observed increase in vegetative cover, canopy cover, and/or plant height; and successful flowering, seed set, and/or vegetative reproduction over the 5-year monitoring period. (c) Revegetation work shall start within 1 year of construction completion. (d) Revegetation shall be monitored at least once a year for 5 years or as otherwise determined by the applicable resource agencies. (e) Individual native trees shall have 65 percent survivorship by the fifth monitoring year. (f) Restoration areas shall be monitored for target invasive plants quarterly in the first 5 years after replanting. If invasive plants are found during the 5-year monitoring period, they shall be removed as necessary to support meeting the cover and vegetation composition success criteria. (g) Monitoring and maintenance shall continue until the minimum success criteria specified in parts (a) through (e) are met, or as otherwise determined by the applicable resource agencies. **Compensatory Mitigation** The project sponsors shall fully compensate for permanent losses of developed open water, open water, seasonal wetland, wetland swale, tidal marsh including areas of bare ground and beach, and nonwetland waters (2.11 acres total) as defined in Table 3.1-5. In addition, the project sponsors shall fully compensate the permanent loss of native coastal scrub (0.77 acre). Compensatory mitigation may occur through the creation of habitat on-site at any of the four project site properties, or through purchase of credits at an off-site mitigation bank. Permanently affected areas shall be mitigated at a ratio of no less than 1:1, unless otherwise approved by USFWS and/or CDFW. **Mitigation Measure M-BI-1d: Avoid Ridgway's Rail Habitat During the Nesting Season** To the extent feasible, the start of construction activities within 700 feet of Heron's Head Park shall be scheduled to avoid the Ridgway's rail nesting season. The nesting season for Ridgway's rail extends from February 1 through August 31. If construction must occur during the Ridgway's rail nesting season, the following measures shall be implemented: (a) A USFWS-approved protocol-level survey for Ridgway's rail (following the June 2015 USFWS	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		Survey Protocol) shall be conducted in Ridgway's rail habitat (Heron's Head Park) within 700 feet of planned construction activities. (b) If Ridgway's rail activity centers are detected, the findings shall be reported to USFWS and project activities occurring within 700 feet of Ridgway's rail activity centers shall be limited to the period from September 1 through January 31, outside of the Ridgway's rail nesting season. **Mitigation Measure M-BI-1e: Avoid Nests during Bird Nesting Season** To the extent feasible, the start of construction activities shall be scheduled to avoid the nesting season. The nesting season for most birds, including most raptors, extends from February 1 through August 31. If construction must occur during the nesting season, the following measures shall be implemented: (a) Preconstruction surveys for nesting birds shall be conducted by a qualified biologist no more than 14 days before the initiation of construction and demolition activities. During these surveys, the qualified biologist shall inspect all potential nesting habitats (e.g., trees, shrubs, grasslands, and buildings) within 300 feet of impact areas for raptor nests and within 100 feet of impact areas for nests of nonraptors. If an active nest (i.e., a nest with eggs or young, or any completed raptor nest attended by adults) is found sufficiently close to work areas to be disturbed by these activities, the qualified biologist shall determine the extent of a disturbance-free buffer zone to be established around the nest until the young are fledged or the nest is otherwise abandoned as determined by a qualified biologist (typically 250 feet for raptors and 50–100 feet for other species), to ensure that no nests of species protected by the Migratory Bird Treaty Act and California Fish and Game Code would be disturbed during project implementation. (b) If construction activities are not initiated until after the start of the nesting season, potential nesting substrate (e.g., bushes, trees, grasses, and other vegetation) that is scheduled to be removed by the project may be removed before the start of the nesting season (e.g., before February 1) to reduce the potential for initiation of nests.	
Impact BI-2: The proposed project or variant would have an adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS.	Significant	See **Mitigation Measure M-BI-1c**	Less than Significant with Mitigation

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
Impact BI-3: The proposed project or variant would have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	Significant	See **Mitigation Measures M-BI-1c, M-HY-1a**, and **M-HY-1b**	Less than Significant with Mitigation
Impact BI-4: The proposed project or variant would interfere with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	Significant	See **Mitigation Measures M-BI-1a** and **M-BI-1d**	Less than Significant with Mitigation
Impact BI-5: The proposed project or variant would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance or the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	Less than Significant	None	Less than Significant
Impact-C-BI: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would not substantially contribute to cumulative impacts related to biological resources.	Less than Significant	None	Less than Significant

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
3.15 Hydrology and Water Quality			
Impact HY-1: The proposed project or variant would violate water quality standards or waste discharge requirements.	Significant	**Mitigation Measure M-HY-1a: Monitor Turbidity during Construction** The project sponsors shall require their construction contractor to monitor turbidity associated with construction of the pier and floating dock and removal of piles and old piers. The contractor shall prepare a turbidity monitoring plan, including product information on monitoring equipment, proposed monitoring locations, and procedures to follow if turbidity increases above background levels. The turbidity monitoring plan shall include the following provisions: (1) Before beginning work, the contractor shall monitor turbidity and light levels at the level of the eelgrass, or other as deemed appropriate by the resource agencies if no eelgrass is present, to establish a baseline. The contractor shall also set buoys out to establish background water quality monitoring points upstream and downstream of the site (based on existing currents and tides at the site). The contractor shall monitor turbidity and light at low, middle, and high tides during typical work hours for several days before beginning work. The project sponsor's contract owner's representative will review and approve the background monitoring station locations before monitoring. (2) During removal of the piles, the contractor shall monitor turbidity and light levels no less than daily or as required by the project's or variant's 401 water quality certification issued by the San Francisco Bay RWQCB or other applicable permits, at the same locations as required for baseline monitoring, as well as within the work area. (3) The contractor shall notify the lead inspector or other on-site individual overseeing the contractor immediately when there is an exceedance of the required water quality criteria (turbidity and light levels) that have been established either in the 401 water quality certification or with the San Francisco Bay RWQCB. If the lead inspector or other identified individual determines, in coordination with the environmental compliance manager, that water quality criteria have been exceeded, demolition activities must cease until turbidity is reduced to meet the criteria. In the event an exceedance occurs, a silt curtain or floating debris booms may be deployed to contain suspended materials and prevent their broader dispersal. The deployment of these additional measures shall be contingent on whether conditions (e.g., water depth, substrate materials, wave action) are appropriate, as determined by the lead inspector. **Mitigation Measure M-HY-1b: Implement Pile Removal Best Management Practices** One of the following two separate procedures shall be utilized to remove piles based on information regarding local sediment conditions: • If there is reason to believe that the sediment is contaminated beyond the typical ambient levels of various in-Bay pollutants other than creosote, which is inferred to be present, the construction contractor shall cut the piling at the mudline. • If there is no reason to believe the sediment is contaminated beyond typical ambient levels, the contractor shall attempt to remove each piling in its entirety by pulling the piling straight out.	Less than Significant with Mitigation

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		The decision regarding the method of removal also depends on the condition of the piling. Generally, the construction contractor shall be prohibited from using vibration or a back-and-forth, rocking movement intended to snap the piling because this generally increases turbidity. Moreover: • If, before the contractor attempts to remove an entire piling, visual inspection of the pilings indicates that the pilings lack the necessary integrity to be pulled without splintering, crumbling, or otherwise disintegrating, the contractor shall instead cut the remaining pile to a level 2–3 feet below the surrounding existing sediment or mudline. • If, during attempts to use direct pulls on the piling to remove it, the piling breaks at a level higher than 2 feet below the mudline, the contractor shall cut the remaining pile to a level 2–3 feet below the surrounding existing sediment or mudline. Because the condition of the piles' structural integrity is not fully nor precisely known, RPD or, for the 700 Innes property, BUILD shall investigate pile integrity after submitting the various permitting documents to the regulatory agencies. A brief memorandum on that investigation (referred to below as the "removal memo") shall be delivered to the agencies to inform them of the pile conditions and the expectation of whether pilings can be removed by pulling without crumbling. The following practices shall be followed during pile removal efforts: • Pilings and other debris may be removed from land or require removal from the water using barge-mounted equipment. For non-land-based removal of piles, the following measures shall be implemented to the extent feasible: – Removal of the pilings and other debris shall be carried out using an excavator mounted on a shallow-draft barge equipped with both grappling and shearing attachments. Shallow-draft barges generally require at least 5 feet of water above the sea floor or any submerged debris. Depending on specific site conditions and the construction barge chosen, it may be possible to float the barge into position at high tides, let it settle on the intertidal mudflats to continue working at low tides, and then be lifted by the next high tide. – Existing eelgrass or oyster beds shall be avoided. – The barge shall be designed to prohibit sediment or debris from falling back into the water. The work surface on the barge deck shall include a containment basin for piles, concrete, and any mud or sediment removed during pulling. Upon removal from substrate, the piles shall be moved expeditiously from the water into the containment basin. – When depths limit access to barges or sensitive resources are present, piles may be manually cut by divers using a pneumatic or hydraulic saw or shears. – Once the piles are cut, they may be towed out to deeper water to a waiting barge or to a landside staging area for loading and removal. • The holes left after pile removal shall not be actively filled. Attempting to fill the holes would lead to increased sediment disturbance and unnecessary increases in turbidity. It is expected that sediment deposition will rapidly fill in any holes that are left.	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		• The removed piles, as well as any decking or other materials, shall be loaded onto a barge and/or transported back to the contractor's staging area where the concrete shall be separated from the other materials and recycled or disposed of off-site as appropriate at a permitted facility. • Once the removed debris is on land, the pilings and planks shall be cut to 5-foot lengths and dried out before being hauled to a landfill for disposal. • The removed piles shall be placed into containment basins that will collect the water, residual creosote, and other materials that may drain off of them. The collected water will eventually evaporate, and the residual creosote and other materials shall be placed into barrels for disposal at an appropriate Class 2 landfill. • The removal method(s) utilized for each site shall be described in the removal memo. • Jetting away the sediments around the piles is prohibited. Where the method selected is expected to generate concrete chips or dust in the water, a special curtain shall be deployed around the individual pile so the contractor may capture any concrete pieces for off-site disposal. • Intentional breaking of timber piles above the mudline is prohibited. • The piles shall not be shaken, hosed off, stripped or scraped off, or left hanging to drip, nor shall any other action be taken with the intent of cleaning or removing adhering material from the pile. • Any sediment accumulated from the pile removal operations shall be assumed to contain creosote and shall be contained and eventually tested and disposed off-site in an appropriate landfill. • Upon completion of demolition and removal of the pilings (and any associated wharfing or decking), the contractor shall perform a postdemolition diver survey in the project area. The survey shall document the quantity and type of pilings stubs above the mudline and the condition of the Bay floor, and shall identify the quantities and types of debris from previous operations and/or from the demolition activities that remain on the Bay floor. • The contractor shall submit the results of the survey to RPD or, for the 700 Innes property, to BUILD for approval, with descriptions of its approach to removal of the piling stubs and debris. RPD (or BUILD) may elect to leave some debris in place if it has established eelgrass growing on it. After this submittal is approved, the contractor can proceed with removal of piling stubs and debris. • Identified piling stubs shall be cut off at 2–3 feet below the mudline if possible. • Bay floor debris including fallen timber piles, steel piping, concrete, and other miscellaneous items shall be removed as they are encountered during demolition activities. • All Bay floor debris within the project limits that is not treated with creosote shall be removed unless such removal would involve disturbing eelgrass. Timber piles that are not shown on the design plans but are encountered during operations shall be removed. Other items not shown on the design plans or mentioned in the specifications, but that are encountered during the contractor's operations, shall be brought to the attention of the lead engineer. The lead engineer shall determine the disposition of the items. • All removed debris shall be transported to the contractor's staging area and recycled or disposed at a permitted landfill facility.	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		• The contractor owner shall confirm that Bay floor debris has been removed by conducting a postconstruction side-scan sonar study. • Existing concrete slabs and concrete debris along the shoreline shall be left in place to avoid destabilizing the embankment. All other timber and metal debris along shoreline shall be removed and disposed. • The following BMPs shall be used to prevent the release of hazardous wastes and minimize creosote release, sediment disturbance, and generation of total suspended solids during demolition operations: – Install a floating surface boom to capture floating surface debris. – Keep all equipment (e.g., bucket, steel cable) out of the water and grip piles above the waterline. – Slowly lift the pile from the sediment and through the water column. – Dispose of all removed timber piles, floating surface debris, sediment spilled on work surfaces, and all containment supplies at a permitted upland disposal site that accepts creosote-treated wood and materials contaminated with creosote. • The following BMPs shall be implemented by the construction contractor for handling creosote-containing materials, spill prevention and containment, erosion and sedimentation prevention, and monitoring requirements: – During demolition activities, a floating boom and skirt shall be deployed around the project site and absorbent booms and pads shall be provided on marine vessels on-site. – Silt fences, straw wattles, and other measures determined appropriate for erosion and sediment control shall be implemented in upland areas. – Waste at the demolition site, such as discarded demolition materials, chemicals, litter, and sanitary waste, shall be properly controlled. – Vessel fueling shall be required at the contractor's staging area or at an approved docking facility. No cross-vessel fueling shall be allowed. – Marine vessels generally shall contain petroleum products within tankage that is internal to the hulls of the vessels. All deck equipment shall be equipped with drip pans to contain leaks and spills. All fuels and lubricants aboard the work vessels shall have a double containment system. Chemicals used in the project area and on marine vessels shall be stored using secondary containment. **Mitigation Measure M-HY-1c: Use Clamshell Dredges** To reduce resuspension of sediments and impacts on water quality when conducting dredging activities, clamshell dredges shall be used for all dredging activities. Using clamshell dredges causes dredged material to descend rapidly through the water column to the Bay bottom, with only a small amount of sediment remaining suspended, thus resulting in minimal turbidity impacts.	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
Impact HY-2: The proposed project or variant would alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation or flooding on- or off-site.	Significant	See **Mitigation Measures M-HY-1a** and **M-HY-1b**	Less than Significant with Mitigation
Impact HY-3: The proposed project or variant would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, and the project would not otherwise degrade water quality.	Significant	See **Mitigation Measures M-HY-1a** and **M-HY-1b**	Less than Significant with Mitigation
Impact HY-4: The proposed project or variant would not place within a 100-year flood hazard area structures that would impede or redirect flood flows.	Less than Significant	None	Less than Significant
Impact HY-5: The project site is subject to flooding from tsunami inundation, but the proposed project or variant 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. The project site is not subject to inundation by mudflows or a seiche.	Less than Significant	None	Less than Significant

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
Impact HY-6: The project site is subject to flooding from sea-level rise, but the proposed project or variant 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.	Less than Significant	None	Less than Significant
Impact-C-HY-1: The proposed project and variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would substantially contribute to cumulative impacts related to hydrology and water quality.	Significant	See **Mitigation Measures M-HY-1a** through **M-HY-1c**	Less than Significant with Mitigation
3.16 Hazards and Hazardous Materials			
Impact HZ-1: The proposed project or variant would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	Significant	**See Mitigation Measure M-HY-1b**	Less than Significant with Mitigation

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
Impact HZ-2: The proposed project or variant would create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	Significant	**Mitigation Measure M-HZ-2a: Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line** Before obtaining a site permit, building permit, or other permit from the City for development activities involving subsurface disturbance landward of the MHW line, the project sponsors shall comply with the requirements of San Francisco Health Code Article 22A, by causing a qualified person to prepare and submit a site mitigation plan to DPH for review and approval. The project sponsors shall implement the approved site mitigation plan. At a minimum, the site mitigation plan shall: • Establish appropriate site-specific cleanup targets, to be reviewed and approved by DPH, that are protective of human health and environment based on the proposed future land use(s). At a minimum, these targets shall be equal to, or more protective, than the following: – For the India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties: The HHSLs (for land to be used for recreational purposes) or the EHSLs (for land to be used for tidal marsh or wetlands) as established in the draft site mitigation plan (RPD, 2017a). – For the 700 Innes property: San Francisco Bay RWQCB ESLs for residential use. • Delineate the extent of soil and/or groundwater contamination at levels exceeding the plan's cleanup levels. Identify and implement measures such as excavation, containment, or treatment of the hazardous materials to achieve the plan's cleanup levels. The site mitigation plan should include figures and drawings showing areas and depths of soil excavation or treatment, soil waste classifications, and any mitigating measures. • Implement procedures for safe handling and transportation of the excavated materials, consistent with the requirements set forth in Article 22A, including: – Removal of soil and materials shall be performed by a licensed engineering contractor with a Class A license and hazardous-substance removal certification. A California-licensed engineer shall provide field oversight on behalf of the project sponsors to document the origin and destination of all removed materials. If necessary, removed materials shall be temporarily stockpiled and covered with plastic sheeting pending relocation, segregation, or off-haul. – If excess materials are off-hauled, waste profiling of the material shall be completed and documented. Materials classified as nonhazardous waste shall be transported under a bill of lading. Materials classified as non-RCRA hazardous waste shall be transported under a hazardous waste manifest. All materials shall be disposed of at an appropriately licensed landfill or facility. – Trucking operations shall comply with Caltrans and any other applicable regulations, and all trucks shall be licensed and permitted to carry the appropriate waste classification. The tracking of dirt by trucks leaving the project site shall be minimized by cleaning the wheels upon exit and cleaning the loading zone and exit area as needed. – If materials require dewatering before off-hauling, a dewatering plan shall be prepared, specifying methods of water collection, transport, treatment, and discharge of all water produced by dewatering. • Describe postexcavation confirmation sampling. If residual contamination remains at the site above the	Less than Significant with Mitigation

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		site-specific cleanup targets, include appropriate controls, including institutional controls where and if necessary, to assure that activities by future users do not expose them to unacceptable health and safety risks. Such controls may include but are not limited to visual barriers over contaminated soil, followed by a cap of clean soil or hard surface materials; operation and maintenance protocols for any disturbance of contaminated soils; and recording of deed restrictions, such as activity and use limitations, with the San Francisco Recorder's Office to assure that the remedy is maintained. • Require preparation and implementation of a site-specific health and safety plan (HASP) to minimize impacts on public health, worker health, and the environment. The HASP shall be prepared in accordance with State and federal OSHA regulations (29 CFR 1910.120) and approved by a certified industrial hygienist. Development of the plan shall be required as a condition of any applicable permit. Copies of the HASP shall be made available to construction workers for review during their orientation and/or regular health and safety meetings, and to the project sponsors. The HASP shall be submitted to DPH at least 2 weeks before the beginning of construction activities. The HASP shall identify chemicals of concern, potential hazards, personal protective equipment and devices, decontamination procedures, the need for personal or area monitoring, and emergency response procedures. The HASP shall be amended, as necessary, if new information becomes available that could affect implementation of the plan. • Require preparation of a deep foundation plan that will specify construction and soil handling methods to prevent potentially contaminated fill materials from being pushed into underlying soil or groundwater, or otherwise cause contaminants to be mobilized, transported, or discharged to the environment. • Require preparation and implementation of required construction-related documents, including odor and noise control measures and a SWPPP. • Require preparation of a dust control plan that shall specify measures to reduce fugitive dust emissions during construction, and that complies with San Francisco Health Code Article 22B. For the India Basin Shoreline Park property only, require preparation of an asbestos dust mitigation plan to be submitted to and approved by BAAQMD, in accordance with 17 CCR Section 93105 and 8 CCR Section 1529. • Require preparation and implementation of a contingency plan to address unanticipated conditions or contaminants encountered during construction and development activities. The conditions of the contingency plan shall be incorporated into the first permit and any applicable permit thereafter. This plan shall establish and describe procedures for responding in the event that unanticipated subsurface hazards or hazardous material releases are discovered during construction, including appropriately notifying nearby property owners, schools, and residents and following appropriate site control procedures. Control procedures would include but not be limited to further investigation and, if necessary, remediation of such hazards or releases, including off-site removal and disposal, containment, or treatment. If unanticipated subsurface hazards or hazardous material releases are discovered during construction, the requirements of this contingency plan addressing unknown contaminants shall be followed. The contingency plan shall be amended as necessary if new information becomes available that could affect implementation of the plan. • Include a commitment to prepare and certify a final project report documenting implementation of the site mitigation plan and its provisions after site earthwork has been completed and any required mitigating measures have been installed.	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		Mitigation Measure M-HZ-2b: Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line Before obtaining a permit for any work Bayward of the MHW line, the project sponsors and their construction contractors shall prepare and implement a nearshore sediment and materials management plan. The plan shall identify, as appropriate, such measures as sediment excavation, containment, or treatment of the hazardous materials, monitoring and follow-up testing, and procedures for safe handling and transportation of any materials removed from the nearshore. This plan shall be submitted to the relevant permitting agencies for their review and approval, before work begins below the MHW line. The plan shall: • Establish appropriate site-specific cleanup targets for nearshore sediment that are protective of tidal marsh habitat. The cleanup targets must be approved by the San Francisco Bay RWQCB, USACE, BCDC, and/or another permitting agency. At a minimum, these targets shall be equal to, or more protective, than the EHSLs established in the draft site mitigation plan (RPD, 2017a). • Delineate the extent of nearshore sediment contamination at levels exceeding the plan's cleanup levels. Identify and implement measures such as excavation, containment, or treatment of the hazardous materials to achieve the plan's cleanup levels. The plan should include figures and drawings showing areas and depths of sediment excavation or treatment, waste classifications, and any mitigating measures. • Implement procedures for safe handling and transportation of the excavated materials, consistent with the requirements set forth in Article 22A of the San Francisco Health Code, including: – Removal of sediments and materials shall be performed by a licensed engineering contractor with a Class A license and hazardous-substance removal certification. A California-licensed engineer shall provide field oversight on behalf of the project sponsors to document the origin and destination of all removed materials. If necessary, removed materials shall be temporarily stockpiled and covered with plastic sheeting pending relocation, segregation, or off-haul. – If excess materials are off-hauled, waste profiling of the material shall be completed and documented. Materials classified as nonhazardous waste shall be transported under a bill of lading. Materials classified as non-RCRA hazardous waste shall be transported under a hazardous waste manifest. All materials shall be disposed of at an appropriately licensed landfill or facility. – Trucking operations shall comply with Caltrans and any other applicable regulations, and all trucks shall be licensed and permitted to carry the appropriate waste classification. To minimize the tracking of dirt by trucks leaving the project site, truck wheels shall be cleaned upon exit and the loading zone and exit area shall be cleaned as needed. – If materials require dewatering before off-hauling, a dewatering plan shall be prepared, specifying methods of water collection, transport, treatment, and discharge of all water produced by dewatering. • Describe postremoval confirmation sampling. If residual contamination remains at the site above the site-specific cleanup targets, include appropriate controls, including institutional controls where and if necessary, to assure that activities by future users do not expose them to unacceptable health and safety risks. Such controls may include but are not limited to visual barriers over contaminated sediments, followed by a cap of clean sediments or hard surface materials; operation and maintenance protocols for	

Table S-2: Summary of Impacts, Improvement Measures, and Mitigation Measures for the Proposed Project and Variant

Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		any disturbance of contaminated sediments; and recording of deed restrictions, such as activity and use limitations, with the San Francisco Recorder's Office to assure that the remedy is maintained. • Require preparation and implementation of a site-specific health and safety plan to minimize impacts on public health, worker health, and the environment. The HASP shall be prepared in accordance with State and federal OSHA regulations (29 CFR 1910.120) and approved by a certified industrial hygienist. Development of the plan shall be required as a condition of any applicable permit. Copies of the HASP shall be made available to construction workers for review during their orientation and/or regular health and safety meetings, and to the project sponsors. The HASP shall identify chemicals of concern, potential hazards, personal protective equipment and devices, decontamination procedures, the need for personal or area monitoring, and emergency response procedures. The HASP shall be amended, as necessary, if new information becomes available that could affect implementation of the plan. • Require preparation of a dust control plan that shall specify measures to reduce fugitive dust emissions during construction. For the India Basin Shoreline Park property only, require preparation of an asbestos dust mitigation plan to be submitted to and approved by BAAQMD, in accordance with 17 CCR Section 93105 and 8 CCR Section 1529. • Require preparation and implementation of required construction-related documents, including odor, dust, and noise control measures and a SWPPP. • Require preparation of a deep foundation plan that will specify construction and sediment handling methods to prevent potentially contaminated fill materials from being pushed into underlying sediments or groundwater, or otherwise cause contaminants to be mobilized, transported, or discharged to the environment. • Require preparation and implementation of a contingency plan to address unanticipated conditions or contaminants encountered during construction and development activities. The conditions of the contingency plan shall be incorporated into the first permit and any applicable permit thereafter. This plan shall establish and describe procedures for responding in the event that unanticipated subsurface hazards or hazardous material releases are discovered during construction, including appropriately notifying nearby property owners, schools, and residents and following appropriate site control procedures,. Control procedures would include but not be limited to further investigation and, if necessary, remediation of such hazards or releases, including off-site removal and disposal, containment, or treatment. If unanticipated subsurface hazards or hazardous material releases are discovered during construction, the requirements of this contingency plan addressing unknown contaminants shall be followed. The contingency plan shall be amended as necessary if new information becomes available that could affect implementation of the plan. • Include a commitment to prepare and certify a final project report documenting implementation of the nearshore sediment and materials management plan and its provisions after completion of site earthwork has been completed and any required mitigating measures have been installed.	

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Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		Mitigation Measure M-HZ-2c: Prepare and Implement a Remedial Action Plan for the 900 Innes Property Before obtaining a grading, excavation, site, building, or other permit for development activities at the 900 Innes property, the project sponsors shall prepare and implement a remedial action plan approved by the San Francisco Bay RWQCB. The RAP must specify the actions that will be implemented to remediate the significant environmental or health and safety risks caused or likely to be caused by the presence of the identified release of hazardous materials in light of project activities. All recommendations of the RAP that affect project design shall be implemented and incorporated into the detailed design of the proposed project or variant. As appropriate and consistent with requirements in San Francisco Health Code Articles 22A and 22B and San Francisco Bay RWQCB standards, the plan and its implementation shall at a minimum: • Establish appropriate site-specific cleanup targets that are protective of human health and the environment, based on the proposed future land use(s). At a minimum, the cleanup targets shall be equal to or more protective than the remedial action goals established in the conceptual RAP (RPD, 2017f). In the conceptual RAP, remedial action goals for upland areas are based on HHSL for recreation use; remedial action goals for offshore sediments are based on a review of COPCs identified at the property, comparative ecological screening values, and published action goals that have been adopted at other nearby tidal restoration projects. • Delineate the extent of soil, sediment, and/or groundwater contamination at levels exceeding the plan's cleanup targets. Identify and implement measures such as excavation, containment, or treatment of the hazardous materials to achieve the plan's cleanup levels. The RAP should include figures and drawings showing areas and depths of soil and sediment excavation or treatment, soil waste classifications, and any mitigating measures. • Implement procedures for safe handling and transportation of the excavated materials, including: – Removal of soil, sediment, and other materials shall be performed by a licensed engineering contractor with a Class A license and hazardous substance removal certification. A California-licensed engineer shall provide field oversight on behalf of the project sponsors to document the origin and destination of all removed materials. If necessary, removed materials shall be temporarily stockpiled and covered with plastic sheeting pending relocation, segregation, or off-haul. – If excess materials are off-hauled, waste profiling of the material shall be completed and documented. Materials classified as nonhazardous waste shall be transported under a bill of lading. Materials classified as non-RCRA hazardous waste shall be transported under a hazardous waste manifest. All materials shall be disposed of at an appropriately licensed landfill or facility. – Trucking operations shall comply with Caltrans and any other applicable regulations, and all trucks shall be licensed and permitted to carry the appropriate waste classification. To minimize the tracking of dirt by trucks leaving the project site, truck wheels shall be cleaned upon exit and the loading zone and exit area shall be cleaned as needed. – If materials require dewatering before off-hauling, a dewatering plan shall be prepared, specifying methods of water collection, transport, treatment, and discharge of all water produced by dewatering.	

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Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
		• Describe postexcavation confirmation sampling. If residual contamination remains at the site above the site-specific cleanup targets, include appropriate controls, including institutional controls where and if necessary, to assure that activities by future users do not expose them to unacceptable health and safety risks. Such controls may include but are not limited to visual barriers over contaminated soil/sediment, followed by a cap of clean soil/sediment or hard surface materials; operation and maintenance protocols for any disturbance of contaminated soils/sediment; and recording of deed restrictions, such as activity and use limitations, with the San Francisco Recorder's Office to assure that the remedy is maintained. • Require preparation and implementation of a site-specific health and safety plan to minimize impacts on public health, worker health, and the environment. The HASP shall be prepared in accordance with State and federal OSHA regulations (29 CFR 1910.120) and approved by a certified industrial hygienist. Development of the plan shall be required as a condition of any applicable permit. Copies of the HASP shall be made available to construction workers for review during their orientation and/or regular health and safety meetings, and to the project sponsors. The HASP shall identify chemicals of concern, potential hazards, personal protective equipment and devices, decontamination procedures, the need for personal or area monitoring, and emergency response procedures. The HASP shall be amended, as necessary, if new information becomes available that could affect implementation of the plan. • Require preparation and implementation of required construction-related documents, including odor, dust, and noise control measures and a SWPPP. • Require preparation of a deep foundation plan that will specify construction and soil/sediment handling methods to prevent potentially contaminated fill materials from being pushed into underlying soil/sediment or groundwater, or otherwise cause contaminants to be mobilized, transported, or discharged to the environment. • Require preparation and implementation of a contingency plan to address unanticipated conditions or contaminants encountered during construction and development activities. The conditions of the contingency plan shall be incorporated into the first permit and any applicable permit thereafter. This plan shall establish and describe procedures for responding in the event that unanticipated subsurface hazards or hazardous material releases are discovered during construction, including appropriately notifying nearby property owners, schools, and residents and following appropriate site control procedures. Control procedures would include but not be limited to further investigation and, if necessary, remediation of such hazards or releases, including off-site removal and disposal, containment, or treatment. If unanticipated subsurface hazards or hazardous material releases are discovered during construction, the requirements of this contingency plan addressing unknown contaminants shall be followed. The contingency plan shall be amended as necessary if new information becomes available that could affect implementation of the plan. • Include a commitment to prepare and certify a final project report documenting implementation of the RAP and its provisions after site earthwork has been completed and any required mitigating measures have been installed.	

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Impact	CEQA Impacts Before Mitigation Measures	Additional Proposed New Mitigation or Improvement Measures	CEQA Impacts after Mitigation Measure(s)
Impact HZ-3: The proposed project or variant is located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.	Significant	See **Mitigation Measures M-HY-1a** and **M-HY-1b** and **Mitigation Measures M-HZ-2a, M-HZ-2b, and M-HZ-2c**	Less than Significant with Mitigation
Impact HZ-4: The proposed project or variant would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	Significant	See **Mitigation Measures M-HZ-2a** through **M-HZ-2c**	Less than Significant with Mitigation
Impact HZ-5: The proposed project or variant would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	Less than Significant	None.	Less than Significant
Impact HZ-6: The proposed project or variant would not expose people or structures to a significant risk of loss, injury, or death involving fires.	Less than Significant	None.	Less than Significant
Impact-C-HZ-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would substantially contribute to cumulative impacts related to hazards and hazardous materials.	Significant	See **Mitigation Measures M-HY-1a** and **M-HY-1b** and **Mitigation Measures HZ-2a** through **M-HZ-2c**	Less than Significant with Mitigation

SUMMARY OF THE PROJECT ALTERNATIVES

The alternatives selection process first considered potential project changes that could avoid or lessen some of the significant and unavoidable impacts listed above and summarized below related to transportation and circulation, noise, air quality, and wind. Based on the environmental analyses in this EIR, the City has determined that the proposed project or variant on its own and/or in conjunction with cumulative development in southeastern San Francisco would result in significant unavoidable impacts related to transportation and circulation, noise, air quality, and wind.

Cultural Resources Impacts:

- Project elements may, depending on final project design, negatively affect the integrity of setting, design, materials, workmanship, feeling, and association to such a degree that the India Basin Scow Schooner Boatyard would no longer remain eligible for listing in the California Register of Historical Resources (CRHR).

Transportation and Circulation Impacts:

- Project-level transportation impacts from the project's loading demand during the peak hour of loading activities and resulting hazardous traffic conditions or significant delays affecting transit, bicycles, or pedestrians.
- Cumulative transportation impacts related to transit delay, because of the increase in round-trip travel time.

Noise Impacts:

- Project-level ambient noise impacts during operation on sensitive receptors off-site along roadways.
- Cumulative noise impacts on sensitive receptors off-site along roadways.

Air Quality Impacts

- Project-level emissions of criteria air pollutants and precursors during construction, operations, and overlapping construction and operational activities.
- Project-level emissions that could expose sensitive receptors to substantial pollutant concentrations.
- Cumulative regional air quality and health risk impacts

Wind Impacts:

- Project-level wind impacts that would affect public areas.

Alternative project options were then screened for their feasibility, their ability to meet most of the project sponsors' objectives, and ability to avoid or lessen some of the significant and unavoidable impacts listed above. The process resulted in two alternatives that were determined to represent a reasonable range of alternatives, in addition to the no project alternative. The following alternatives are analyzed in this EIR:

- **No Project Alternative:** As required by State CEQA Guidelines Section 15126.6(e), the No Project Alternative is evaluated to allow decision-makers to compare the environmental effects of approving the proposed project with the effects of not approving the project. Under this alternative, the project site would remain in its current condition and no new development would occur. There would be no construction and no provision of new residential, commercial (retail, office, research and development [R&D]), and recreational uses.

- **Code Compliant Alternative:** This alternative was selected because of its potential to reduce wind impacts and to demonstrate what is allowable under existing land use controls at the site. The purpose of choosing this alternative is to allow decision-makers to compare the environmental effects of approving the proposed project or the variant with development that would be consistent with existing zoning on the site. The same type of recreational and commercial development and associated parking and access would occur at the India Basin Shoreline Park and 900 Innes properties under the Code Compliant Alternative as under the proposed project and variant, because the proposed development on these two properties has been designed to be code compliant. The Code Compliant Alternative would include residential and commercial (retail, office, and R&D) uses on the 700 Innes property; however, under this alternative, the 700 Innes property would include more overall built square footage, which would be closer to the maximum development allowable by the San Francisco Planning Code (Planning Code). Under this alternative, the proposed heights of the structures on the 700 Innes property would be lower than under the proposed project or variant. The India Basin Open Space and 700 Innes properties would have a 40-foot height limit with no bulk restriction, which would increase the total land coverage (i.e., total building footprint) of the 700 Innes property to 13.3 acres or 579,348 gross square feet (gsf).

- **Reduced Development Alternative:** This alternative was selected because of its potential to reduce the transportation and circulation, noise, air quality, and wind impacts listed above. The Reduced Development Alternative would include the same type of on-land recreational and commercial space and associated parking and access on the India Basin Shoreline Park and 900 Innes properties as under the proposed project and variant; however, the in-water redevelopment would not include a new pier and dock extending from the India Basin Shoreline Park property. The Reduced Development Alternative would include residential, commercial (retail, office, and R&D), institutional/education, parking, and recreational/open space uses on the 700 Innes property, but the total square footage of development would be reduced by approximately 50 percent. Under this alternative, the proposed heights of the structures on the 700 Innes property would be lowered at the proposed tower locations and throughout most of the remaining project site compared to the proposed project or variant.

- **Full Preservation Alternative:** This alternative was selected because of its potential to reduce the cultural resource impact listed above. The Full Preservation Alternative would be similar to the proposed project and variant, but would include the rehabilitation to Secretary of Interior (SOI) Standards of all three buildings (the Shipwright's Cottage, the Boatyard Office Building, and the Tool Shed and Water Tank building) that are significant features of the India Basin Scow Schooner Boatyard and contribute to the boatyard's CRHR eligibility. The Full Preservation Alternative would also propose that plantings and new park furniture would be designed to retain the industrial character of the cultural landscape. Under this alternative, the Griffith Street right-of-way alignment and width would be maintained and would be designed as a stepped path rather than wood stairs.

- **Partial Preservation Alternative:** This alternative was selected because of its potential to reduce the cultural resource impact listed above. The Partial Preservation Alternative would be similar to the proposed project and variant, but would guarantee the retention of the Boatyard Office Building and interpretation of the Tool Shed and Water Tank building, significant features of the India Basin Scow Schooner Boatyard that contributes to the boatyard's CRHR eligibility.

Table S-3 compares the impacts of the proposed project and variant with those of the alternatives.

Table S-3: Summary of Impact Conclusions of the EIR Alternatives Compared to the Proposed Project and Variant

	Proposed Project (PP)	Variant (PV)	No Project Alternative	Code Compliant Alternative	Reduced Development Alternative	Full Preservation Alternative	Partial Preservation Alternative
Land Use and Land Use Planning	LTS	LTS	NI (less than PP & PV)	LTS (same as PP & PV)	LTS (same as PP & PV)	LTS	LTS
Aesthetics	LSM	LSM	NI (less than PP & PV)	LTS (less than PP & PV)	LSM (less than PP & PV)	LSM	LSM
Population and Housing	LTS	LTS	NI (less than PP & PV)	LTS (same as PP & PV)	LTS (less than PP; & PV)	LTS	LTS
Cultural Resources	SUM	SUM	NI (less than PP & PV)	SUM (same as PP & PV)	SUM (same as PP & PV)	LSM (less than PP & PV)	LSM (less than PP & PV)
Transportation and Circulation	SUM	SUM	NI (less than PP & PV)	SUM (greater than PP & PV)	SUM (less than PP & PV)	SUM	SUM
Noise	SUM	SUM	NI (less than PP & PV)	SUM (same as PP & PV)	SUM (less than PP & PV)	SUM	SUM
Air Quality	SUM	SUM	NI (less than PP & PV)	SUM (greater than PP & PV)	SUM (less than PP & PV)	SUM	SUM
Greenhouse Gas Emissions	LTS	LTS	NI (less than PP & PV)	LTS (same as PP & PV)	LTS (less than PP;& PV)	LTS	LTS
Wind	SUM	SUM	NI (less than PP & PV)	SUM (less than PP & PV)	SUM (less than PP & PV)	SUM	SUM
Shadow	LTS	LTS	NI (less than PP & PV)	LTS (less than PP;& PV)	LTS (less than PP;& PV)	LTS	LTS
Recreation	LTS	LTS	NI (less than PP & PV)	LTS (greater than PP;& PV)	LTS (less than PP;& PV)	LSM	LSM
Utilities and Service Systems	LSM	LSM	NI (less than PP & PV)	LTS (greater than PP & PV)	LSM (less than PP;& PV)	LSM	LSM
Public Services	LTS	LTS	NI (less than PP & PV)	LTS (same as PP & PV)	LTS (less than PP;& PV)	LTS	LTS
Biological Resources	LSM	LSM	NI (less than PP & PV)	LSM (greater than PP;& PV)	LSM (less than PP;& PV)	LSM	LSM

	Proposed Project (PP)	Variant (PV)	No Project Alternative	Code Compliant Alternative	Reduced Development Alternative	Full Preservation Alternative	Partial Preservation Alternative
Hydrology and Water Quality	LSM	LSM	NI (less than PP & PV)	LSM (same as PP & PV)	LSM (same as PP & PV)	LSM	LSM
Hazards and Hazardous Materials	LSM	LSM	NI (less than PP & PV)	LSM (same as PP & PV)	LSM (less than PP;& PV)	LSM	LSM
TOTAL	N/A	N/A	**Less for 16 topics**	**Less for 3 topics; Same for 8 topics; Greater for 5 topics**	**Less for 13 topics; Same for 3 topics**	**Less for 1 topic: Same for 15 topics**	**Less for 1 topic: Same for 15 topics**

Notes: LSM = less than significant with mitigation; LTS = less than significant; N/A = not applicable; NI = no impact;
PP = proposed project; PV = variant; SUM = significant and unavoidable with mitigation
Source: Compiled by AECOM in 2017

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

State CEQA Guidelines Section 15126.6(e)(2) requires identification of an environmentally superior alternative. If the No Project Alternative is environmentally superior, CEQA requires selection of the "environmentally superior alternative other than the No Project Alternative" from among the proposed project and the alternatives evaluated.

The No Project Alternative is considered the overall environmentally superior alternative because the impacts associated with implementation of the proposed project would not occur under the No Project Alternative. However, the No Project Alternative would not meet any of the project objectives.

To identify the environmentally superior alternative in accordance with the State CEQA Guidelines, Table S-3 presents a comparison of the impacts related to the alternatives. As shown in Table S-2, the Reduced Development Alternative is the environmentally superior alternative. Because of the substantially lower number of residential units and the decrease in the gsf of commercial, office, R&D, institutional/educational, and open space/recreation uses, this alternative would lessen (but not avoid) most of the significant adverse impacts identified for the proposed project and the variant related to the topics of noise, air quality, transportation and circulation, and wind.

As shown in Table 4-3 in Chapter 4, "Alternatives," the Reduced Development Alternative would partially meet the two project sponsors' objectives. Like either the proposed project or the variant, the Reduced Development Alternative would provide public open spaces, housing, R&D, commercial/retail, and recreational opportunities. It would also include restoration and remediation of existing RPD properties. However, this alternative would not enhance the India Basin Shoreline Park and India Basin Open Space to the same level of design improvements, and this site would remain potentially vulnerable to sea-level rise and flooding from Bay inundation. Without these design improvements, the property would require additional maintenance over time. This alternative would not construct as much housing or at add the same amount of funds for increasing affordable housing in San Francisco, and employment opportunities under this alternative would be less than under either the proposed project or the variant.

AREAS OF KNOWN CONTROVERSY AND ISSUES TO BE RESOLVED

In accordance with Sections 15063 and 15082 of the State CEQA Guidelines, the San Francisco Planning Department, as lead agency, sent the EIR Notice of Preparation (NOP) to responsible and trustee agencies and interested entities and individuals on June 1, 2016, thus beginning the formal CEQA scoping process. The purpose of the scoping process is to allow the public and government agencies to comment on the issues and provide input on the scope of the EIR. The NOP mailing list included approximately 671 federal, State, and local agencies; regional and local interest groups; and property owners within 300 feet of the project site. The scoping period began on June 1, 2016, and ended on July 1, 2016.

The Initial Study that accompanied the EIR NOP included preliminary discussion and analysis of the potential environmental impacts of the project with respect to all of the following resource topics included in Appendix G of the State CEQA Guidelines, as modified by the San Francisco Planning Department: land use and land use planning; aesthetics; population and housing; cultural resources; transportation and circulation; noise; air quality; greenhouse gas emissions; wind and shadow; recreation; utilities and service systems; public services; biological resources; geology and soils; hydrology and water quality; hazards and hazardous materials; mineral and energy resources; and agriculture and forest resources. The NOP and other information related to the project and public scoping process was also posted on the San Francisco Planning Department's website. Seventeen comment letters were received on the NOP during this time and one comment letter was received after the conclusion of the public scoping period.

Pursuant to Section 15083 of the State CEQA Guidelines, the San Francisco Planning Department held a public scoping meeting on June 19, 2016, starting at 5 p.m. at the Alex L. Pitcher, Jr. Community Room, 1800 Oakdale Avenue in San Francisco. Attendees were given an opportunity to provide comments and express concerns about the potential effects of the project. Eight individuals provided verbal comments on the content of the Draft EIR at the scoping meeting.

Environmental concerns raised in comment letters and during the scoping period are summarized in Table 1-1 in Chapter 1, "Introduction." Respective issues raised have been resolved as part of the project design included in Chapter 2, "Project Description" and/or as part of the EIR impact analyses and relevant mitigation measures discussed in the respective EIR topical sections.

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1.0 INTRODUCTION

1.1 PROJECT SUMMARY

As cosponsors of the proposed India Basin Mixed-Use Project (project), the San Francisco Recreation and Parks Department (RPD) and BUILD have formed a public-private partnership and have proposed to transform 38.84 combined acres of publicly owned, underutilized parkland and privately owned, vacant land into a new mixed-use waterfront community connected by a network of public parks in the City and County of San Francisco (City). Although RPD's and BUILD's projects are legally separate, they are being designed in close collaboration and are being analyzed as a single combined project, the India Basin Mixed-Use Project, for the purposes of environmental review under the California Environmental Quality Act (CEQA) of 1970.

RPD would improve 8 acres of publicly owned parcels along the shoreline plus 1.58 acres of unimproved paper streets[1] to create a publicly accessible network of new and/or improved parkland and open space. This new shoreline network would extend the Blue Greenway—a portion of the San Francisco Bay Trail (Bay Trail) that would ultimately connect The Embarcadero to the north to Candlestick Point to the south—and would provide pedestrian and bicycle connections to and along the shoreline, fronting the Bay.

BUILD would develop 17.12 acres of privately owned land plus 5.94 acres of developed and undeveloped public rights-of-way with residential, retail, commercial, office, institutional, research and development, flex space,[2] and recreational and art uses. BUILD would also redevelop 6.2 acres of RPD property located along the shoreline adjacent to privately owned land into enhanced wetlands, a boardwalk, and a beach.

The project site is currently zoned Public (P), Small-Scale Neighborhood Commercial (NC-2), Light Industrial (M-1), and Heavy Industrial (M-2). Portions of the project-related RPD and ROW properties are currently zoned M-1, NC-2, M-2, and P, and are within the 40-X and OS height and bulk districts. Those properties located within the future public park network would be rezoned to P; some portions of existing unaccepted ROW would be incorporated into the future mixed-use urban village and would require rezoning into a special use district (SUD) with specific height, bulk, and use designations appropriate for the proposed development, through amendments to the *San Francisco General Plan* (General Plan), Planning Code text, and the Zoning Map. The BUILD properties would require rezoning into a special use district (SUD) with specific height, bulk, and use designations appropriate for the proposed development, through amendments to the *San Francisco General Plan*, San Francisco Planning Code text, and the zoning map. Further details regarding the proposed project components that form the basis for the analysis in this environmental impact report (EIR) are discussed in depth in Chapter 2.0, "Project Description."

This EIR for the proposed India Basin Mixed-Use Project has been prepared in accordance with, and complies with, all criteria, standards, and procedures of CEQA, as amended (Public Resources Code [PRC] Section 21000 et seq.); the State CEQA Guidelines (California Code of Regulations Title 14, Section 15000 et seq.); and Chapter 31 of the San Francisco Administrative Code. Per CEQA Section 21067 and Sections 15367 and 15050–15053 of the State CEQA Guidelines, the City is the lead agency under whose authority this document has been prepared. As an informational document, this EIR is intended for use by City decision makers and members of the public in evaluating the potential environmental effects of the project.

[1] Roadways that appear on maps, but have not been built.
[2] Space that can be used for small local retail or office and residents.

1.2 ENVIRONMENTAL REVIEW PROCESS—CEQA COMPLIANCE

An EIR is an informational document used by a lead agency (in this case, the City) when considering approval of a project. The purpose of an EIR is to provide public agencies and members of the public with detailed information regarding the environmental effects associated with implementing a project. An EIR should analyze the environmental consequences of a project, identify ways to reduce or avoid the project's potential environmental effects, and identify alternatives to the project that can avoid or reduce impacts. CEQA requires that all State and local government agencies consider the environmental consequences of projects over which they have discretionary authority. This EIR provides information to be used in the planning and decision-making process. It is not the purpose of an EIR to recommend approval or denial of a project.

Before approval of the project, the City, as lead agency and the decision-making entity, is required to certify that this EIR has been completed in compliance with CEQA, that the information in the EIR has been considered, and that the EIR reflects the independent judgment of the City. CEQA requires decision makers to balance the benefits of a project against its unavoidable environmental consequences. If environmental impacts are identified as significant and unavoidable, the City may still approve the project if it finds that social, economic, or other benefits outweigh the unavoidable impacts. The City would then be required to state in writing the specific reasons for approving the project, based on information in the EIR and other information sources in the administrative record. This reasoning is called a "statement of overriding considerations" (PRC Section 21081; State CEQA Guidelines Section 15093).

In addition, the City as lead agency must adopt a mitigation monitoring and reporting program (MMRP) describing the measures that were made a condition of project approval to avoid or mitigate significant effects on the environment (PRC Section 21081.6; State CEQA Guidelines Section 15097). The MMRP is adopted at the time of project approval and is designed to ensure compliance with the project description and EIR mitigation measures during and after project implementation. If the City decides to approve the project, it would be responsible for verifying that the MMRP for this project is implemented.

The EIR will be used primarily by the City during approval of future discretionary actions and permits.

1.3 PURPOSE AND LEGAL AUTHORITY

1.3.1 Notice of Preparation and Public Scoping Process

In accordance with Sections 15063 and 15082 of the State CEQA Guidelines, the San Francisco Planning Department, as lead agency, sent the Notice of Preparation (NOP) to responsible and trustee agencies and interested entities and individuals on June 1, 2016, thus beginning the formal CEQA scoping process. The purpose of the scoping process is to allow the public and government agencies to comment on the issues and provide input on the scope of the EIR. The NOP mailing list included approximately 671 federal, State, and local agencies; regional and local interest groups; and property owners within 300 feet of the project site. The scoping period began on June 1, 2016, and ended on July 1, 2016.

The Initial Study that accompanied the NOP included preliminary discussion and analysis of the potential environmental impacts of the project with respect to all of the following resource topics included in Appendix G of the State CEQA Guidelines: land use and land use planning; aesthetics; population and housing; cultural

resources; transportation and circulation; noise; air quality; greenhouse gas emissions; wind and shadow; recreation; utilities and service systems; public services; biological resources; geology and soils; hydrology and water quality; hazards and hazardous materials; mineral and energy resources; and agriculture and forestry resources. The NOP and other information related to the project and public scoping process was also posted on the San Francisco Planning Department's website. Seventeen comment letters were received on the NOP during this time.

Pursuant to Section 15083 of the State CEQA Guidelines, the San Francisco Planning Department held a public scoping meeting on June 19, 2016, starting at 5 p.m. at the Alex L. Pitcher, Jr. Community Room, 1800 Oakdale Avenue in San Francisco. Attendees were given an opportunity to provide comments and express concerns about the potential effects of the project. Eight individuals provided verbal comments on the content of the Draft EIR at the scoping meeting.

Environmental concerns raised in comment letters and during the scoping period are summarized in Table 1-1, which also cross-references the applicable EIR sections where these comments are addressed. Pursuant to Sections 15064(f) and 15131 of the State CEQA Guidelines, CEQA does not require a discussion of socioeconomic effects related to a project except where such effects could result in physical changes to the environment. Table notes cited in the "Summary of Comment" column and shown at the bottom of Table 1-1 indicate public scoping comments received regarding socioeconomics; those comments are addressed in Chapter 5.0, "Other CEQA Considerations," and issues related to population and housing are analyzed in Section 3.3. Appendix A presents the NOP/Initial Study and the comment letters referenced below.

Table 1-1: Summary of EIR Scoping Comments

Commenter	Summary of Comment	Coverage in the EIR
California Department of Transportation, District 4—*comment letter from Patricia Maurice*	The Lead Agency monitoring Mitigation and Monitoring and Reporting Plan should include all proposed mitigation measures. Transportation Impact Fees should be identified, the EIR should include the Transportation Impact Study (TIS), and address discrepancies between the transit-oriented infill project eligibility checklist and CEQA Section 21099, Modernization of Transportation Analysis. The project should also include a Transportation Demand Management (TDM) program.	• Section 3.5, "Transportation and Circulation" • Appendices
California Native American Heritage Commission—*comment letter from Gaye Totton*	The EIR should comply with AB52, SB18, and the California Native American Heritage Commission's recommendations for cultural resources assessments.	• Section 3.4, "Cultural Resources"
California State Lands Commission—*comment letter from Reid Boggiano*	Analyze the anticipated land exchange between the City and County and the Commission consistent with Public Resources Code section 6307.	• Chapter 2.0, "Project Description": Section 2.4, "Discretionary Actions and Approvals" • Section 3.1, "Land Use and Land Use Planning"
Association of Bay Area Governments—*comment letter from Ben Botkin*	Describe how the Bay Trail component of the project is consistent with the Bay Trail Design Guidelines; discuss construction phasing for the Bay Trail; assess existing and potential water access related to non-motorized small boats; and identify potential impacts to existing or planned public access to the Bay Trail.	• Section 3.1, "Land Use and Land Use Planning" • Section 3.2, "Aesthetics" • Section 3.3, "Population and Housing" • Section 3.5, "Transportation and Circulation" • Section 3.11, "Recreation"

Table 1-1: Summary of EIR Scoping Comments

Commenter	Summary of Comment	Coverage in the EIR
San Francisco Bay Conservation and Development Commission—*comment letter from Ethan Lavine*	The India Basin shoreline between the PG&E power plant and Hunters Point Shipyard was designated by BCDC in 1971 for waterfront park, beach priority use. Development within waterfront park priority use areas must be consistent with the Bay Plan recreation policies that describe appropriate uses and other considerations for development and management of waterfront parks. The EIR should discuss consistency with the San Francisco Waterfront Special Area Plan; indicate the amount of fill that would be added or removed from the project site; analyze the number of new residents, workers, and consider their impacts to public access at Heron's Head Park and other nearby publicly accessible areas. The EIR should identify locations for public access improvements, address construction impacts to special-status species and habitat, discuss impacts to tidal marshes and tidal flats and efforts to minimize these impacts, discuss how the project would maintain or improve open water areas in the Bay, identify the role of State and Regional Water Boards, and discuss the approach to protecting the shoreline. Furthermore, the EIR should address climate change concerns and adaptation strategies and indicate where the State's public trust requirements apply to the project.	• Chapter 2.0, "Project Description": Section 2.4, "Discretionary Actions and Approvals" • Section 3.1, "Land Use and Land Use Planning" • Section 3.3, "Population and Housing" • Section 3.8, "Greenhouse Gas Emissions" • Section 3.11, "Recreation" • Section 3.14, "Biological Resources" • Section 3.15, "Hydrology and Water Quality"
Sierra Club San Francisco Bay Chapter—*comment letter from Arthur Feinstein*	Discuss how the project would enhance or detract from the public's ability to experience nature; consider other locations in India Basin for kayak launching due to migratory bird concerns; and discuss appropriate size of boardwalks in order to protect the productivity of the shoreline.	• Section 3.11, "Recreation" • Section 3.14, "Biological Resources"
Golden Gate Audubon Society—*comment letter from Cindy Margulis*	Evaluate/spell out differences in wind and shadow impacts between proposed project and variant; describe neighboring projects planned for the larger community; incorporate Baylands Subtidal Habitat Goals for San Francisco, and discuss whether more access for hand-powered boats is needed. The EIR should also address how maintenance of the Shoreline Park would be accomplished long term; if possible to add more bio-swales and retention gardens at edge of park; air quality near proposed barbeque grills; SF Planning Commission's Bird-safe Building Ordinance; adherence to San Francisco Standards for Bird Safe Buildings; impacts to eelgrass beds, herring, marine mammals, and rafting water birds and shorebirds.	• Chapter 3.0, "Environmental Setting and Impacts": "Cumulative Impact Analysis" • Section 3.5, "Transportation and Circulation" • Section 3.7, "Air Quality" • Section 3.9, "Wind" • Section 3.10, "Shadow" • Section 3.11, "Recreation" • Section 3.12, "Utilities and Service Systems" • Section 3.14, "Biological Resources" • Section 3.15, "Hydrology and Water Quality"
Bayview Historical Society—*comment letter from Dan Dodt*	The Bayview Historical Society would work with the City to help evaluate the significance of the India Basin Shoreline. The comment letter attached the India Basin Survey (2008), prepared by Kelley and VerPlanck Historical Resources Consulting.	• Section 3.4, "Cultural Resources"

Table 1-1: Summary of EIR Scoping Comments

Commenter	Summary of Comment	Coverage in the EIR
Green Action for Health and Environmental Justice, Hunters Point Bayview Taskforce—*comment letter from Bradley Angel, Claire Laurentine, Marie Harrison, and Etecia Brown*	The project could have significant impacts related to land use and land planning, aesthetics, population and housing, and greenhouse gas emissions, therefore these topics should be evaluated in the EIR. In addition, cumulative impacts related to these sections could be significant. The EIR should evaluate potential significant impacts that would have a negative discriminatory and disparate impact on people of color.[1] The EIR should evaluate toxic contamination; current estimates of projected sea level rise; the potential impact of greenhouse gas emissions; consideration of neighborhood air quality; and should consider, and conclude, that more affordable housing should be included with the proposed project and variant.	• Section 3.1, "Land Use and Land Use Planning" • Section 3.2, "Aesthetics" • Section 3.3, "Population and Housing" • Section 3.5, "Transportation and Circulation" • Section 3.7, "Air Quality" • Section 3.8, "Greenhouse Gas Emissions" • Section 3.15, "Hydrology and Water Quality" • Section 3.16, "Hazards/Hazardous Materials"
Green Action for Health and Environmental Justice, Hunters Point Bayview Taskforce—*verbal comments from Claire Laurentine at scoping meeting*	Commenter voiced concerns related to leaving greenhouse gas emissions out of the EIR; lack of detail related to sea level rise; and lack of affordability, [1] which would change cultural aspects of the community.	• Section 3.3, "Population and Housing" • Section 3.8, "Greenhouse Gas Emissions" • Section 3.15, "Hydrology and Water Quality"
Green Action for Health and Environmental Justice, Hunters Point Bayview Taskforce—*comment letter from Leaotis Martin*	The EIR should consider how pollution from this project and others in the area would affect current and new residents. In addition, greenhouse gases should be evaluated in the EIR, gentrification should be evaluated, [1] more affordable housing should be included, [1] sea level rise needs to be further evaluated, hazardous waste needs to be cleaned up, and future residents should be notified that the site contains hazardous waste. Overall, Hunters Point and Bayview need to be cleaned up for the current residents and further gentrifying the area does not solve this problem.	• Section 3.3, "Population and Housing" • Section 3.8, "Greenhouse Gas Emissions" • Section 3.15, "Hydrology and Water Quality" • Section 3.16, "Hazards/Hazardous Materials"
Green Action for Health and Environmental Justice, Hunters Point Bayview Taskforce—*verbal comments from Leaotis Martin at scoping meeting*	The Bayview community experiences a high risk of cancer, asthma, and other health problems. The site should be cleaned up so children won't be affected by the toxic environmental conditions.	• Section 3.7, "Air Quality" • Section 3.15, "Hydrology and Water Quality" • Section 3.16, "Hazards/Hazardous Materials"
India Basin Neighborhood Association—*comment letter from Sue Smith*	Land Use, Aesthetics, Population & Housing, and Utilities & Service System sections should be further analyzed in the EIR.	• Section 3.1, "Land Use and Land Use Planning" • Section 3.2, "Aesthetics" • Section 3.3, "Population and Housing" • Section 3.12, "Utilities and Service Systems"
India Basin Neighborhood Association—*verbal comments from Sue Smith at scoping meeting*	Commenter is concerned that land use, aesthetics, and population and housing are not anticipated to be addressed in the EIR. The project could physically divide an existing community; therefore this should be studied as part of the EIR. Furthermore, the project does not qualify as urban infill and needs to analyze aesthetic impacts in the EIR, population and housing needs to be further studied, and the out-of-date electrical system needs to be assessed in the utilities and service systems section of the EIR.	• Section 3.1, "Land Use and Land Use Planning" • Section 3.2, "Aesthetics" • Section 3.3, "Population and Housing" • Section 3.12, "Utilities and Service Systems"

Table 1-1: Summary of EIR Scoping Comments

Commenter	Summary of Comment	Coverage in the EIR
Nature in the City and Literacy for Environmental Justice—*comment letter from Zahra Kelly and Patrick Marley Rump*	There needs to be specific targeted goals to create and reestablish habitats on these sites. See Appendix A for additional comments and recommendations by Nature in the City and Literacy for Environmental Justice.	• Chapter 2.0, "Project Description" • Section 3.11, "Recreation" • Section 3.14, "Biological Resources" • Section 3.15, "Hydrology and Water Quality" • Section 3.16, "Hazards/Hazardous Materials"
Descendent of Shipwright's Cottage original inhabitant (current resident of Washington State)—*comment letter from Brian Dirks*	The Shipwright's Cottage was part of a key industry integral to the development of San Francisco and the whole Bay Area. The commenter advocates for restoration of the property to a site that reflects its important contributions to the maritime history of the West Coast.	• Section 3.4, "Cultural Resources"
Resident on Innes Avenue—*comment letter from Kristine Enea*	The EIR should study the following: impacts from excavation and transportation of soil, how the character of the neighborhood would be altered, the outdated electrical infrastructure, natural gas supply lines, existing critical habitat, and ground subsidence and liquefaction.	• Section 3.1, "Land Use and Land Use Planning" • Section 3.2, "Aesthetics" • Section 3.3, "Population and Housing" • Section 3.5, "Transportation and Circulation" • Section 3.6, "Noise" • Section 3.7, "Air Quality" • Section 3.14, "Biological Resources" • Section 3.16, "Hazards/Hazardous Materials"
Resident on Innes Avenue—*verbal comments from Jill Fox at scoping meeting*	Cumulative projects are not being evaluated correctly, which would exacerbate the existing problem of there being a food desert in the area.[1] The area is currently underserved by public transportation, and existing residents are impacted by current construction in the area.	• Section 3.1, "Land Use and Land Use Planning" • Section 3.2, "Aesthetics" • Section 3.4, "Cultural Resources" • Section 3.5, "Transportation and Circulation" • Section 3.6, "Noise" • Section 3.7, "Air Quality" • Section 3.16, "Hazards/Hazardous Materials"
Resident on Innes Avenue—*verbal comments from Michael Hamman at scoping meeting*	The Initial Study has conflicting statements regarding which buildings will be demolished and needs to resolve these discrepancies.	• Section 3.4, "Cultural Resources"
Resident—*verbal comments from Ellsworth Jennison at scoping meeting*	Commenter asked if there were any planning commissioners present at the scoping meeting.	• Chapter 1.0, "Introduction": Section 1.3, "Purpose and Legal Authority"
Resident on Hunters Point Boulevard—*comment letter from Mark Lajeh*	Commenter is concerned about how access to property at 10 Hunters Point Blvd. and 9551 Hudson Ave. will change as a result of the proposed project and variant.	• Section 3.5, "Transportation and Circulation"

Table 1-1: Summary of EIR Scoping Comments

Commenter	Summary of Comment	Coverage in the EIR
Resident on Earl Street—*comment letter from Shirley Bruton*	The EIR should study the following: impacts from excavation and transportation of soil, how the character of the neighborhood would be altered, the outdated electrical infrastructure, natural gas supply lines, existing critical habitat, and ground subsidence and liquefaction.[2]	• Section 3.1, "Land Use and Land Use Planning" • Section 3.2, "Aesthetics" • Section 3.3, "Population and Housing" • Section 3.5, "Transportation and Circulation" • Section 3.6, "Noise" • Section 3.7, "Air Quality" • Section 3.14, "Biological Resources" • Section 3.16, "Hazards/Hazardous Materials"
Resident on Cleo Rand Lane—*comment letter from Richard Nagy*	• Mini homes/condos • Green roofing • Don't duplicate park facilities across RPD, BUILD, and Lennar properties • 11 stories on Innes Ave. is too big and bulky • Architectural exclamation point at A.W. • Undergrounding power lines on Innes Ave. • Alternate exit from area. Connecting Donohue to Crisp Street	• Section 3.2, "Aesthetics" • Section 3.3, "Population and Housing" • Section 3.5, "Transportation and Circulation" • Section 3.8, "Greenhouse Gas Emissions" • Section 3.11, "Recreation"
Resident on Cleo Rand Lane—*verbal comments from Richard Nagy at scoping meeting*	The proposed 11-story building is too tall and bulky for the neighborhood—suggests that the tallest portion of the project be an architectural exclamation point for the site. The commenter suggests that green roofing should be part of the project and that the three parks along the shoreline should all contribute in different ways. Commenter supports undergrounding power lines on Innes Ave. and connecting Donohue to Crisp Street to create an emergency evacuation route.	• Section 3.2, "Aesthetics" • Section 3.3, "Population and Housing" • Section 3.5, "Transportation and Circulation" • Section 3.8, "Greenhouse Gas Emissions" • Section 3.9, "Wind" • Section 3.10, "Shadow" • Section 3.16, "Hazards/Hazardous Materials"
Resident on Jerrold Avenue—*verbal comments from Linda Richardson at scoping meeting*	Commenter states that a combined EIR for a public/private project is unprecedented, and if challenged in court, both projects would be put in jeopardy.	• Section 3.1, "Land Use and Land Use Planning" • Section 3.3, "Population and Housing" • Section 3.5, "Transportation and Circulation" • Section 3.14, "Biological Resources"

Notes: AB = Assembly Bill; Bay Trail = San Francisco Bay Trail; BCDC = San Francisco Bay Conservation and Development Commission; CEQA = California Environmental Quality Act; City = City and County of San Francisco; EIR = environmental impact report; PG&E = Pacific Gas and Electric Company; SB = Senate Bill; SF = San Francisco; TDS = Transportation Demand Management; TIS = Transportation Impact Study

[1] This comment relates to socioeconomic effects. Pursuant to Sections 15064(f) and 15131 of the State CEQA Guidelines, CEQA does not require a discussion of socioeconomic effects except where such effects could result in physical changes to the environment; this comment us addressed in Chapter 5.0, "Other CEQA Considerations," of this EIR.

[2] As described below, the topics of geology and soils, mineral and energy resources, and agriculture and forestry resources were addressed in the Initial Study and do not require further analysis in this EIR.

Source: Compiled by AECOM in 2017

An Initial Study has been prepared to determine whether any aspect of the project, either individually or cumulatively, would cause a significant effect on the environment. The Initial Study narrowed the focus (or scope) of the environmental analysis by identifying which impacts would be less than significant (with or without mitigation) and therefore were adequately analyzed in the Initial Study, as well as which impacts require further study in the EIR. The Initial Study found that:

- impacts related to aesthetics are not applicable to the project;
- the project would result in less-than-significant impacts related to greenhouse gas emissions, wind and shadow, public services, geology and soils, and mineral and energy resources; and
- the project would result in no impact related to agriculture and forestry resources.

The topics of geology and soils, mineral and energy resources, and agriculture and forestry resources were studied in the Initial Study and do not require further analysis in the EIR. After the publication of the Initial Study, the City determined that the topic of aesthetics is applicable to the project. Therefore, the topic of aesthetics is included in the EIR. The topics of land use and land use planning, population and housing, greenhouse gas emissions, wind and shadow, and public services are included in the EIR to provide more detail and address public comments received in response to the NOP and/or during the public scoping meeting.

The Initial Study also found that the project would result in potentially significant impacts related to the topics of cultural resources, transportation and circulation, noise, air quality, recreation, utilities and service systems, biological resources, hydrology and water quality, and hazards and hazardous materials. All of these topics are included in the EIR.

The analysis and conclusions of the Initial Study are incorporated into this EIR by reference. The Initial Study is included in Appendix A.

1.3.2 Public Review

The City filed the Notice of Completion with the State Clearinghouse, indicating that this Draft EIR has been completed and is available for review. The Notice of Availability of the EIR has been published concurrently with distribution of this document. This Draft EIR is being circulated for a 47-day public review and comment period.

How to Comment on the Draft EIR

This Draft EIR was published on September 13, 2017. There will be a public hearing before the Planning Commission during the 47-day public review and comment period for this EIR to solicit public comment on the adequacy and accuracy of information presented in this Draft EIR. The public comment period for this EIR is September 14, 2017, to October 30, 2017. The public hearing on this Draft EIR has been scheduled before the Planning Commission for October 19, 2017, in Room 400, City Hall, 1 Dr. Carlton B. Goodlett Place beginning at 1:00 p.m. or later. Please call (415) 558-6422 the week of the hearing for a recorded message giving a more specific time.

During the Draft EIR public review and comment period, comments from the general public, organizations, and agencies regarding environmental issues identified in the EIR and concerning the EIR's accuracy and completeness may be submitted to the lead agency at the following address:

Michael Li
San Francisco Environmental Planning Department
1650 Mission Street, Suite 400, San Francisco, CA 94103
or
michael.j.li@sfgov.org

In addition, this Draft EIR and all related technical appendices are available for review during the public review and comment period in the office of the Environmental Planning Department at 1650 Mission Street, Suite 400, San Francisco, CA 94103. Copies of this Draft EIR are also available at the following location:

San Francisco Public Library
100 Larkin Street
San Francisco, CA 94102

Comments may be made on this Draft EIR in writing before the end of the comment period. The City will prepare written responses to comments made in writing. Upon completion of the public review and comment period, a final EIR will be prepared and will include the comments on this Draft EIR received during the formal public review period and responses to those comments.

1.4 DOCUMENT ORGANIZATION

This EIR is divided into the following chapters and appendices:

- The Summary chapter provides a concise overview of the project, the environmental impacts that would result from the project, mitigation and improvement measures identified to reduce or eliminate these impacts, project alternatives and their comparative environmental effects, and areas of controversy and issues to be resolved.

- Chapter 1.0, "Introduction," provides introductory information, including the history of the project, and identifies the lead agency for the project.

- Chapter 2.0, "Project Description," presents a detailed discussion of the location, setting, and characteristics of the project site, the project objectives, project features, environmental review requirements and approvals, and cumulative projects to be considered.

- Chapter 3.0, "Environmental Setting and Impacts," presents individual sections for the environmental resource areas listed in Appendix G of the State CEQA Guidelines and Appendix B of the San Francisco Environmental Planning Environmental Review Guidelines. These sections describe existing conditions, detail the regulatory framework, and assess the potential environmental impacts of the project. When the analysis identifies potentially significant effects, mitigation measures are presented. Implementing these measures would reduce potentially significant impacts to a less-than-significant level whenever feasible.

- Chapter 4.0, "Alternatives," presents and analyzes alternatives to the proposed project and compares their environmental effects to those of the proposed project. Three alternatives are described and evaluated: the No Project Alternative, the Code Compliant Alternative, and the Reduced Development Alternative.

This chapter also identifies the environmentally superior alternative and discusses alternatives considered but rejected as infeasible.

- Chapter 5.0, "Other CEQA Considerations," describes the significant and unavoidable environmental impacts of the project, as well as the significant irreversible environmental changes that would result from project implementation.

- Chapter 6.0, "List of Preparers," identifies City staff members and consultants who helped prepare the EIR and the persons and organizations consulted during the preparation of the EIR.

- Appendices provide additional information regarding multiple issues discussed throughout this document.

1.5 REFERENCES

No references cited in this chapter.

2.0 PROJECT DESCRIPTION

The San Francisco Recreation and Parks Department (RPD), together with the City and County of San Francisco (City) and the privately owned real estate development company BUILD, have proposed a public-private partnership to redevelop their respective adjacent parcels located along the India Basin shoreline of San Francisco Bay (Bay) into an integrated network of new public parks, wetland habitat, and a mixed-use urban village. The combined project site encompasses publicly and privately owned dry land parcels, including existing unaccepted rights-of-way (ROW) (including some ROW owned by the Port of San Francisco [SF Port]), totaling approximately 38.24 acres. Additional submerged parcels in the Bay are owned by the City, BUILD, and other private parties; however, no development is proposed on these submerged parcels, with the exception of the pier and floating dock proposed at India Basin Shoreline Park.

The larger India Basin neighborhood surrounding the project site includes the site of the future Northside Park to the east (part of the Hunters Point Shipyard development); the former Hunters Point Power Plant site to the northwest (owned by PG&E); and Heron's Head Park to the north (owned by the City). These properties are outside the project site and not included in the combined project.

RPD would redevelop approximately 8.98 acres of publicly owned parcels along the shoreline to create a new publicly accessible network of improved parkland and open space. The RPD development area comprises the existing 5.6-acre India Basin Shoreline Park, the 1.8-acre 900 Innes/Historic Boatyard site, and 1.58 acres of unimproved ROW. This new shoreline park network would provide space for active and passive recreation, picnicking, and water access; extend the Blue Greenway (a portion of the San Francisco Bay Trail [Bay Trail]); rehabilitate and celebrate the historic India Basin Scow Schooner Boatyard; and provide pedestrian and bicycle connections to and along the shoreline, fronting the Bay. The RPD development represents approximately 23.5 percent of the project area.

BUILD would redevelop approximately 29.26 acres of privately and publicly owned parcels along the shoreline to create a new publicly accessible network of improved parkland and open space and a mixed-use urban village. The BUILD development area comprises 17.12 acres of privately owned parcels, the existing 6.2-acre India Basin Open Space, and 5.94 acres of partially unimproved and unaccepted ROW. Approximately 14 acres of the BUILD development area would be developed in a series of phases into privately owned buildings as part of a mixed-use urban village. The remainder of the BUILD development, approximately 15.26 acres, would be developed in a series of phases into a mix of improved ROW, new public parkland and open space, new public plazas, new private gardens and open space, and restored and enhanced wetland habitat.

Two options for the BUILD mixed-use urban village are being considered: a residentially focused version, referred to in this document as the "proposed project," and a more commercially intensive variant with fewer dwelling units and more commercial space than the proposed project, referred to in this document as the "variant." In both versions (the proposed project and the variant), the urban village would contain a mix of residential, retail, commercial, office, research and development (R&D), institutional, flex space,[1] and recreational and art uses. As part of the BUILD development, BUILD would also redesign the existing 6.2 acres[2]

[1] Space that can be used for small local retail or office and residents.

[2] The 6.2-acre India Basin Open Space is included in the approximately 15.26 acres described early in the paragraph that is dedicated solely to parkland and open space.

of RPD property located along the shoreline into enhanced wetlands, a boardwalk, a beach and beach deck, and kayak launch among other features (the "India Basin Open Space"). Subject to future negotiations with the City, either BUILD or the City, or some combination of both entities, would construct these improvements. The BUILD development represents approximately 76.5 percent of the project area. The RPD component of the project would remain the same under both the proposed project and the project variant.

2.1 PROJECT LOCATION AND SETTING

2.1.1 Regional Location

The project site lies within the Bayview Hunters Point neighborhood, in the southeast quadrant of San Francisco. The site is generally bounded by the Bay on the north, Earl Street and the Candlestick Point–Hunters Point Phase I and Phase II Shipyard Development Plan areas on the east, Innes Avenue[3] on the south, and Hunters Point Boulevard and Hawes Street on the west (Figure 2-1). Portions of Innes Avenue adjacent to the site are included in the project boundary.

2.1.2 Local Setting

The approximately 38.24-acre project site is generally flat between Hudson Avenue and Earl Street to the India Basin Open Space boundary, with a downward slope toward the Bay. The elevation of the project site is highest along Innes Avenue at approximately 50 feet above mean sea level, and lowest along the shoreline at approximately 5 feet above mean sea level.

The parcels collectively referred to as the India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties are owned by the City, by and through the SF Port, RPD, and San Francisco Public Works (SFPW), as depicted in Figure 2-2. These parcels are all managed by RPD and total 13.6 acres. The parcels that are collectively referred to as the 700 Innes property are owned or optioned by BUILD, except for a small parcel of land adjacent to Griffith Street that BUILD intends to acquire (depicted in yellow as the "Zebra" site in Figure 2-2). The 700 Innes property totals 17.12 acres, excluding 5.94 acres of public ROW bisecting the red-colored 700 Innes property (shown in blue in Figure 2-2), and 1.58 acres of public ROW bisecting the India Basin Shoreline Park and 900 Innes properties (also shown in blue). In combination, the project site has a total of 7.52 acres of public ROW. Figure 2-2 shows the project site and the general property ownership boundaries. As part of the project's development agreement, certain parcels currently owned by BUILD shall be transferred to RPD and/or the City. Some parcels currently owned by the City and/or RPD shall be transferred to BUILD.

[3] Innes Avenue is oriented in a northwest-southeast direction, but this environmental impact report (EIR) refers to the roadway as running west-east. Similarly, Hunters Point Boulevard is oriented in a northwest-southeast direction, but is referred to here as running north-south. Arelious Walker Drive is oriented in a northeast-southwest direction, but is referred to in this EIR as running north-south. This EIR uses these conventions throughout to describe the locations of other buildings and uses relative to the project site.

Source: Figure provided by SOM in 2017

Figure 2-1 **Project Location**

2.1.3 Surrounding Land and Water Uses

Surrounding land uses include PG&E's former power plant to the north; public housing (Hunters View, Hunters Point East/West, Northridge, and Westbrook) to the west; the Bay to the north; and the future Northside Park for the Candlestick Point–Hunters Point Shipyard Development Plan project to the east. Northside Park will be a 12.8-acre public park, adjacent and across the Earl Street ROW (currently an unaccepted and undeveloped street) from the 700 Innes property along the Bay waterfront. The future park is planned to include an open-air marketplace, sports and playground uses, and natural areas for passive use and access to the Bay. Immediately across Innes Avenue to the south of the project site are one- to three-story residential buildings. Figure 2-1 shows the surrounding land uses relative to the project site.

Innes Avenue runs along the south side of the project site and is a main thoroughfare from Cesar Chavez Street on the north to the Candlestick Point–Hunters Point Shipyard Development Plan area on the south. Traveling from southeast to northwest, Innes Avenue turns into Hunters Point Boulevard and then Evans Avenue. Along the project site boundary, Innes Avenue is a four-lane, two-way road with two lanes each running west and east.

The underwater portion of the India Basin shoreline area adjacent to the project site encompasses 42.63 acres owned by the City, BUILD, and a few other private owners (Figure 2-2).

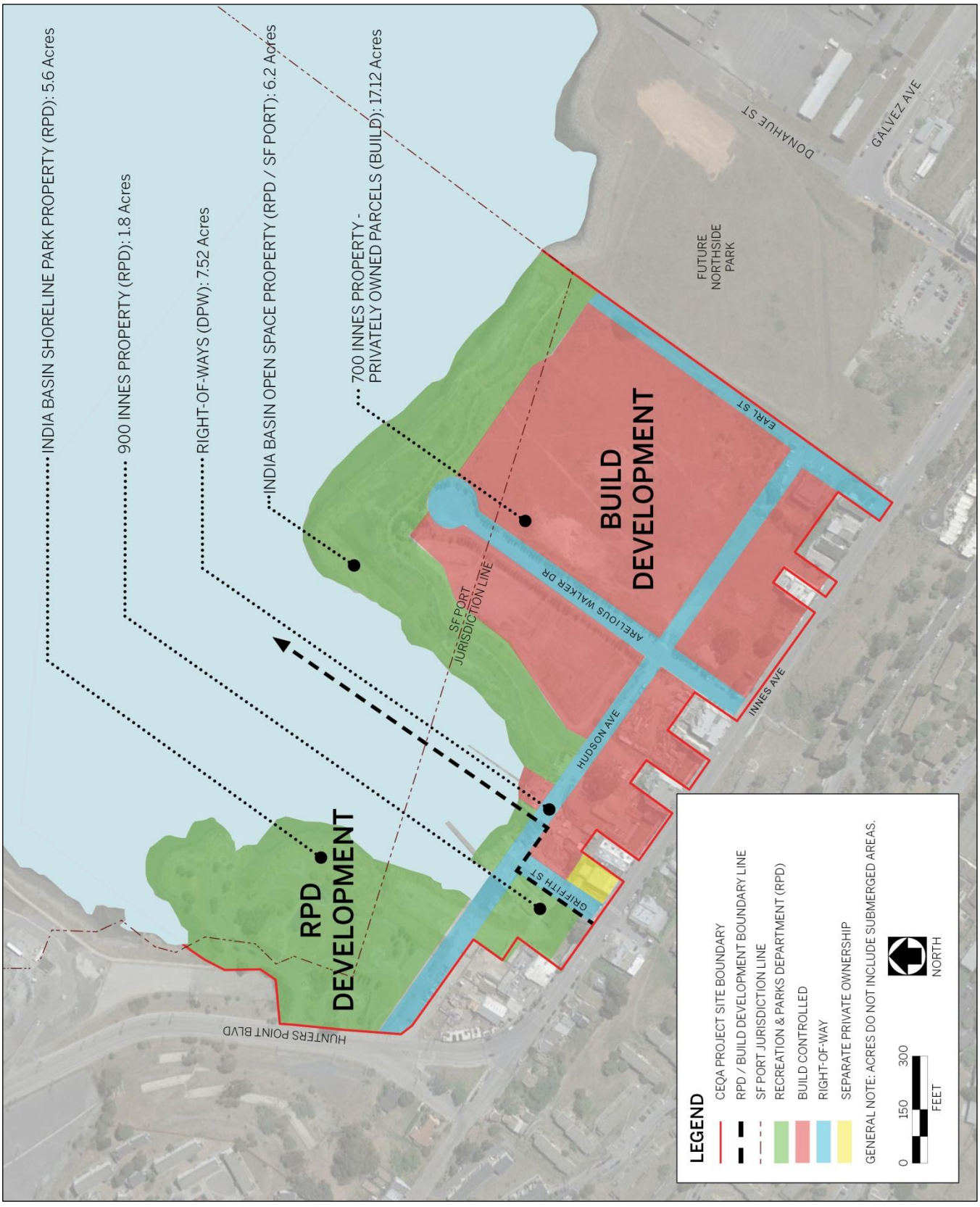
2.1.4 Land Use Designations and Zoning

The project site is zoned Light Industrial (M-1), Heavy Industrial (M-2), Small-Scale Neighborhood Commercial (NC-2), and Public (P). Under Sections 210.5, 711.1, and 234 of the San Francisco Planning Code (Planning Code), these zoning districts have the following respective land use designations:

- The M-1 district is intended for smaller industries that are dependent on truck transportation. Most industries are permitted in the M-1 district, but those with particularly noxious characteristics are excluded.

- The M-2 district is the least restricted as to use and is located at the eastern edge of the City, separated from residential and commercial areas. The heavier industries are permitted, with fewer requirements as to screening and enclosure than in M-1 districts, but some uses are permitted only as a conditional use or at some distance from residential districts.
- The NC-2 district is intended for areas ranging in size from two blocks to many blocks, commonly located along collector and arterial streets that have transit routes. Small-Scale Neighborhood Commercial districts are defined as linear shopping streets that provide convenience goods and services to the surrounding neighborhoods, as well as limited comparison shopping goods for a wider market.
- The P district applies to land that is owned by a governmental agency and is in some form of public use, which can include parks and open space.

The project site is located in 40-X and Open Space (OS) height and bulk districts. The 40-X Height and Bulk District would subject the proposed project and the variant to a 40-foot height limit, with no bulk restriction. The OS Height and Bulk District is intended to indicate its principal or exclusive purpose as open space, with future development strictly limited.



Source: Figure provided by SOM in 2017

Figure 2-2 **Project Site**

2.1.5 Land Use Restrictions

Portions of the project site that are owned by the City and BUILD are subject to the common-law public trust and the Burton Act public trust,[4] as amended. The public trust designation limits uses to those that further the public trust interests. Any claim by the California State Lands Commission (CSLC) that uses proposed by the project on public trust land would conflict with the public trust would be resolved through a public trust settlement and exchange agreement (Trust Exchange Agreement) with CSLC, as described in Section 3.1, "Land Use and Land Use Planning."

Portions of the project site that are submerged or within the 100-foot shoreline band are also within the jurisdiction of the San Francisco Bay Conservation and Development Commission (BCDC) under the *San Francisco Bay Plan* and the *San Francisco Waterfront Special Area Plan*. These land use restrictions and their relationship to proposed project and variant development are discussed further in Section 3.1.

2.1.6 Site Characteristics

The approximately 38.24-acre project site consists of privately and publicly owned properties and public ROW (Figure 2-2). Table 2-1 shows the acreage of each parcel with a description of existing site characteristics.

Table 2-1: Project Site

Property	Acres
Publicly Owned: Existing and/or Future Open Space & Parkland	
India Basin Shoreline Park (City – RPD, Port)[1]	5.6
900 Innes—multiple parcels (City – RPD, Real Estate)	1.8[2]
India Basin Open Space (City –RPD, Port)	6.2
Subtotal	13.6
Public Rights-of-Way: Accepted and Unaccepted/Unimproved	
Griffith Street, Hudson Avenue, Earl Street, and Arelious Walker Drive	7.52
Subtotal	7.52
Privately Owned—700 Innes	
700 Innes—multiple private parcels (under BUILD options or fee simple ownership)	17.12
Subtotal	*17.12*
Total	**38.24**

Notes: RPD = San Francisco Recreation and Parks Department
The subtotals are approximate due to rounding.
[1] The India Basin Shoreline Park acreage does not include the underwater area offshore from the park, which totals 42.63 acres.
[2] The 900 Innes property has a total area of 2.4 acres, including submerged areas; 1.8 acres are dry land and 0.6 acre is submerged. This table calculates only dry land where redevelopment would occur. A second table, Table 2-2, includes all submerged parcels.
Source: Data provided by BUILD and RPD in 2016

[4] Chapter 1333, Statutes of 1968.

India Basin Shoreline Park Property

This 5.6-acre property is an existing RPD park located between Hunters Point Boulevard and PG&E's vacant parcels to the north and the 900 Innes property to the south (Figure 2-2). India Basin Shoreline Park has two play structures, a basketball court, landscaping, a portion of the Blue Greenway/Bay Trail, artwork by local artists and students, barbeque grills, seating areas, a water fountain, and educational signage. Two buried ship hulls, the *Bay City* and the *Caroline*, are located within the tidal coastline of the India Basin Shoreline Park property. Vehicular access to the park is provided via Hunters Point Boulevard. Hawes Street has designated parking areas and ends at a cul-de-sac and drop-off area. The park provides informal access along the Bay shoreline, which includes some wetlands and upland plantings. Many of the amenities at India Basin Shoreline Park are outdated, require maintenance, and are used only minimally.

900 Innes Property (multiple parcels)

The 900 Innes property consists of seven parcels totaling 1.8 acres (an additional 0.6 acre is submerged) that are located between India Basin Shoreline Park and the India Basin Open Space (Figure 2-2). All parcels are now under the jurisdiction of RPD. The property is a former maritime industrial site that contains six structures between 10 and 25 feet tall, totaling approximately 7,760 gross square feet (gsf).

A one-story, 900-square-foot (sq. ft.) wood-framed building is located on the northwestern corner of Innes Avenue and the unimproved Griffith Street ROW (#1 in Figure 2-3). This building, the Shipwright's Cottage, is eligible for listing in the California Register of Historical Resources (CRHR) and has been designated as San Francisco Landmark No. 250. One of the first dwellings in the India Basin vicinity, the Shipwright's Cottage was erected by boatwrights[5] circa 1875, initiating development of a boatbuilding community in India Basin that crafted most of San Francisco's scow schooner fleet.[6] The building is in poor condition; the interior is in disrepair and uninhabitable.

Figure 2-3 shows the following other structures on the 900 Innes property (construction dates and building number in Figure 2-3 in parenthesis):

- a 1,600-sq.-ft., 20- to 25-foot-tall, steel-framed canopy building (between 1979 and 1989; also known as the storage building, #6 on Figure 2-3);
- a 1,700-sq.-ft., approximately 15-foot-tall, wood-framed structure (between 1938 and 1946; also known as the paint shop and compressor house; #4);
- a 1,460-sq.-ft. shed measuring approximately 10 feet tall (between 1938 and 1946; also known as the blacksmith and machine shop; #5);
- a 940-sq.-ft., 10- to 15-foot-tall, wood-framed shed building (1890s; also known as the Tool Shed and Water Tank building, #3);

[5] A synonym for "boat builder."

[6] Scow schooners were sturdy, shallow-draft, handcrafted sailing vessels that were developed in direct response to the needs of San Francisco beginning in the latter half of the nineteenth century and continuing on into the early decades of the twentieth century , and to the Bay's natural conditions. Scow schooners could access the shallow waters in estuaries and sloughs throughout the Bay, where larger ships could not maneuver. These vessels transported goods throughout the San Francisco Bay Area and transferred goods to schooners sailing out of San Francisco.

- a 286-sq.-ft., approximately 10-foot-tall, wood-framed office building adjoining the shed (between 1900 and 1935; known as the Boatyard Office building, # 2); and
- a wharf measuring approximately 120 feet long (the wood wharf was constructed in stages through the 1930s and 1940s, but the existing concrete wharf was constructed built between 1989-1997; not numbered in Figure 2-3).

Source: Figure provided by GGN in 2017

Figure 2-3 **Existing Buildings on the 900 Innes Property**

All buildings are 64–138 years old and in poor condition. All lack utilities, and three have partially collapsed (blacksmith and machine shop, Boatyard Office building, Tool Shed and Water Tank building). Finally, two dilapidated piers and approximately 20 creosote-treated piles are located in the Bay, offshore from this property.[7]

The 900 Innes property also contains the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape, which is eligible for listing in the California Register of Historical Resources (CRHR). Character-defining features include the Shipwright's Cottage, Office Building, Tool Shed, water fence posts, and marine ways along with staging yards, pathways, shoreline, and views. For additional details regarding this resource, see Section 3.4, "Cultural Resources."

India Basin Open Space Property

The India Basin Open Space property is an existing 6.2-acre RPD open space that borders the Bay (Figure 2-2).[8] This property includes a portion of the Blue Greenway/Bay Trail along its shoreline, consisting of features that improve the regionwide Bay Trail from Mission Creek on the north to the City limits on the south.

The India Basin Open Space contains benches, upland habitat, tidal salt marsh, mudflats, sand dunes, and native vegetation. No offshore eelgrass beds were found in a recent survey of the India Basin vicinity. The 2.5-acre tidal salt marsh habitat, also referred to by the California Department of Fish and Wildlife (DFG, 1986) as northern coastal salt marsh, is a result of a 2002 wetlands mitigation project for San Francisco International Airport and is described further in Section 3.14, "Biological Resources."

Habitat management and protection areas in the India Basin Open Space are fenced from public access. A storm drain and overflow storm outfall are located on the northeastern shoreline, but are not maintained by the City and currently are not operable. The storm drain and overflow storm outfall were constructed for a proposed development that never occurred; as a result, the improvements were never accepted by the San Francisco Public Utilities Commission (SFPUC) or the City. The *Tenth Annual Monitoring Report for the California Regional Water Quality Control Board* in January 2012 found that after 10 years of monitoring of wetland progress, two of the four wetland zones were underperforming relative to the target criterion of 80 percent salt marsh cover. To date, the San Francisco Bay Regional Water Quality Control Board (RWQCB) has not proposed any alterations to the wetlands to improve their ecological performance.

Legal public access to the shoreline is limited to the Blue Greenway/Bay Trail. Two easements to the shoreline exist, but they are not paved or designated for public access. Shoreline access also occurs via informal pathways that also are not designated for public access.

[7] Many of these wooden piles on the project site were treated with creosote, a substance used from the mid-1800s into the 1950s to preserve wooden marine structures from decay. Creosote is a complex mixture of chemicals, many of which are toxic to fish and other marine organisms.

[8] RPD India Basin Natural Areas.

700 Innes Property (multiple parcels)

The 700 Innes property consists of 30 parcels totaling 17.12 acres (Figure 2-2). The property is generally undeveloped and open, except for six buildings and structures covering only a small portion of the site. The few structures on this property range from one to four stories and are between 10 and 40 feet tall. This area is generally made of fill materials, covered by light brush, debris, dirt, and gravel mounds. Some parcels and portions of parcels are submerged in the Bay, but are not counted toward the 17.12-acre total used in this description, which only reflects dry land acreage. The area is mostly flat between Hudson Avenue and Earl Street to the India Basin Open Space boundary, which then slopes toward the Bay. There is more slope downward from Innes Avenue toward Hudson Avenue. One dilapidated, wood-framed storage structure sits on the concrete wharf that fronts a wooden dock, in a western portion of the property that once was part of the Allemand Brothers Boat Yard. A second structure, built in 1935, is on the southeastern corner of the property at 702 Earl Street and is eligible for listing in the CRHR. This building (also known as the Heerdt Building and Repair) is a timber-framed industrial building with two stories over a basement, a compound shed, and a shallow-pitch gable roof.

The primary pedestrian entrance to the 702 Earl Street building and loading dock are on the north elevation, which is punctuated by a large vehicular opening. The fenestration includes bands of ribbon windows. A remodeled external staircase provides access to the attic level, which currently is used as a residence. A commercial building with one residential unit, at 840 Innes Avenue, is located on the southeastern corner of the property. The property also contains three temporary structures (two construction trailers and one shed), construction vehicle parking, and debris. Finally, a pier and approximately eight associated creosote-treated piles extend into the Bay from this property.

The 700 Innes property surrounds Arelious Walker Drive, an unaccepted public ROW ending in a cul-de-sac, and is generally bounded by Innes Avenue to the south, Earl Street to the east, Griffith Street to the west, and the Bay to the north. Except for a small portion near the 900 Innes property, the 700 Innes property is separated from the Bay by the 6.2-acre shoreline area that is under the jurisdiction of RPD and referred to as the India Basin Open Space (described above).

Public Rights-of-Way (Griffith Street, Hudson Avenue, Earl Street, and Arelious Walker Drive)

The existing public ROW within the project site totals 7.52 acres (Figure 2-2). Griffith Street, Hudson Avenue, and Earl Street are partially paved where they meet Innes Avenue, but in general they are unpaved and/or partially paved, unimproved, unaccepted, and fenced from public access. Hudson Avenue runs west to east[9] through the project site, starting at Hunters Point Boulevard and terminating at Earl Street. Sections of Earl Street and Hudson Avenue are paper streets. Earl Street forms the eastern boundary of the project site, running from the edge of the Bay to Innes Avenue. Griffith Street is the shortest of the streets, starting at Innes Avenue and running west to east,[10] bisecting the project site and terminating at the edge of the shoreline. Arelious Walker Drive is a paved street that runs south to north and roughly bisects the 700 Innes property, ending in a cul-de-sac.

[9] Hudson Avenue is oriented in a northwest-southeast direction but is referred to here as running west-east. This EIR uses this convention throughout to describe uses relative to the project site.

[10] Griffith Street is oriented in a southwest-northeast direction but is referred to here as running north-south. This EIR uses this convention throughout to describe uses relative to the project site.

Existing Buildings Across the Entire Project Site

Table 2-2 lists the existing buildings on the project site, providing their approximate gross square footage, historic status, and existing uses, and specifying whether they would remain as part of the proposed future improvements. "Historic status" refers to whether the elements are eligible to be listed individually or are significant to the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape, discussed in further detail in Section 3.4, "Cultural Resources."

Table 2-2: Existing Buildings on the Project Site

Name of Building/Address	gsf	Historic Status	Existing Uses	To Remain?
Shipwright's Cottage/900 Innes Avenue	900	CRHR eligible	Vacant	Yes
702 Earl Street	11,000	CRHR eligible	Residential; workshop/studio[1]	Yes/ relocated
838–840 Innes Avenue	3,700	CRHR ineligible	Residential (rear unit); vacant (front unit)	No
India Basin Scow Schooner Boatyard/900 Innes Avenue		CRHR-Eligible Historic Landscape	n/a	Yes
Blacksmith and Machine Shop	1,460	Noncontributing element	Vacant	No
Paint Shop and Compressor House	1,700	Noncontributing element	Vacant	No[2]
Boatyard Office Building	286	Significant element	Vacant	Yes[3]
Storage Building	1,600	Noncontributing element	Vacant	No
Tool Shed and Water Tank House	940	Significant element	Vacant	No[4]
Allemand Brothers Boatyard/700 Innes Avenue		Not CRHR eligible	n/a	No
Storage Building	400	Not CRHR eligible	Vacant	No
Shop Building	1,100	Not CRHR eligible	Storage	No
Ark Houseboat	300	Not CRHR eligible	Storage	No
888 Innes Avenue	3,750	Not CRHR eligible	Industrial/ production	No

Notes: CRHR = California Register of Historical Resources; gsf = gross square feet

[1] The 702 Earl Street building would be relocated to a northeastern location on the 700 Innes property, closer to the shoreline.

[2] This structure would be rebuilt using a similar shape and footprint.

[3] The Boatyard Office building may be retained so that the building remains a significant feature of the cultural landscape, or the building may be demolished if retention is infeasible. Retention of the building may include retention or replacement in-kind of a portion of the roof form, a portion of the wood frame structure, and a portion of the wood cladding so that the massing of the building is still expressed.

[4] The Tool Shed and Water Tank building would be removed and may be replaced with an open structure that interprets the shape and form of the building and roof, reuses some materials, and retains the foundation where possible.

Source: RPD and BUILD, 2016

2.2 PROJECT OBJECTIVES

RPD and BUILD have formed a public-private partnership to transform approximately 38.24 combined acres of privately owned vacant land and publicly owned but underutilized parkland into a new mixed-use urban village connected by a network of public parks and pathways. Although BUILD's and RPD's projects are legally separate, they are being designed in close collaboration and are being studied as a combined project for the purposes of environmental review under the California Environmental Quality Act. Proposed community development and supporting public infrastructure would be based on the following lists of objectives.

2.2.1 Objectives for RPD Development

Neighborhood & Community

1. Create a neighborhood center that stimulates meaningful and inclusive local, citywide, and regional community engagement.
2. Develop a seamless park user experience along India Basin that ensures a high level of waterfront and recreation access for neighborhood users, and create a significant amenity on the Bayview/Hunters Point recreation loop/waterfront.
3. Construct more open space to address the population growth in a high-need and emerging neighborhood, and improve recreational amenities to existing residents.
4. Create an opportunity for the City to address issues of social and environmental justice, equity, and inclusion in parks and open space for the India Basin and greater Bayview Hunters Point communities.
5. Stimulate local hiring through job training for construction activities, park-related concession opportunities, and recreation leadership positions.
6. Create a safe environment for park users that includes increased visibility of park spaces, including direct sightlines from bordering streets to the water.

Environment & Sustainability

1. Prioritize environmental cleanup to promote public health, safety, and welfare.
2. Design a landscape that will be adaptive and resilient alongside anticipated sea level rise.
3. Conserve and strengthen natural resources, and increase biodiversity and interconnectivity on City parkland, through the expansion of shoreline wetlands and redevelopment of natural upland landscaping.
4. Provide on-site stormwater treatment infrastructure to promote improved Bay water quality.

History & Cultural

1. Preserve and celebrate historic and cultural resources, including the restoration of the historic Shipwright's cottage and revitalization and interpretation of the historic boatyard cultural landscape at 900 Innes and the ship hulls at India Basin Shoreline Park.
2. Create a welcome center featuring the site's shipbuilding heritage and surrounding neighborhood/community history, complemented by a food and beverage concession to serve as a community gathering space and to promote local hiring.
3. Create an entry experience from Innes Avenue that highlights the features of both the cultural and natural landscape, maintains sightlines to the waterfront, and contributes to a seamless park user experience and sense of place as a neighborhood center.

Recreation & Education

1. Create a center for waterfront programming with a variety of active and passive recreational opportunities, and strengthen the quality of existing parks and facilities.
2. Expand public access to the Bay and accelerate the development of the Blue Greenway/Bay Trail, by connecting the India Basin Open Space, 900 Innes, and India Basin Shoreline Park with all seven properties along the India Basin cove.
3. Provide active recreational programming such as a human-powered boating center, basketball courts, skateboard ramps, bike paths, children's playground, and public beach access.
4. Provide passive recreational programming such as bird-watching, barbeque and picnic areas, landscaped/natural hiking paths, and a great lawn.
5. Construct an educational/"makers" building (the "Shop"), intended to provide recreational arts and shop programming focused on the historic shipbuilding industry.
6. Design park spaces that are safe and inviting and that follow departmental best practices for successful maintenance.

Transportation & Infrastructure

1. Provide Class 1 bicycle lane infrastructure to enhance community transportation alternatives.
2. Create publicly accessible Griffith Street site access, linking the neighboring community and new retail to the sites south of 900 Innes.
3. Construct enhanced/signalized crosswalks to park entrances for easier and safer pedestrian access.
4. Create Americans with Disabilities Act (ADA)–accessible pathways providing waterfront access and safe interactions with highly trafficked routes such as the Class 1 bicycle path.

2.2.2 Objectives for BUILD Development

1. Revitalize a prime but underutilized southeastern waterfront site with a range of uses designed to increase housing at a range of affordability levels and provide increased business and employment opportunities.
2. Construct high-quality housing with sufficient density to contribute to active uses on the project site while offering a mix of unit types, sizes, and affordability to accommodate a range of potential residents.
3. Provide sufficient mixed-use development capacity (in terms of gross floor area and residential unit count) with a range of flexible uses that can respond to market demands and attract the private capital necessary to build out the proposed project in a timely fashion and financially support an array of public benefits, including public open space, a permanent maintenance and operations tax district, community job training and small business development opportunities, public transportation improvements and affordable housing.
4. Pursue a balanced mix of residential, retail, and office space, as well as R&D space, to support a daytime population adequate to create a viable, vibrant small-scale neighborhood retail district.

5. Preserve the shoreline areas of the project site for public park and public open space use.

6. Incorporate environmental sustainability concepts and practices into the project, including stormwater treatment swales and bioretention areas, improved and new wetlands, green building design, and construction practices.

2.3 PROJECT COMPONENTS

The proposed project and the proposed maximum commercial variant are referred to in this document as the proposed project and the variant, respectively. In each of the following discussions of project components, the proposed RPD development is described first, followed by the proposed BUILD development. The RPD development as proposed does not include a variant and would be the same under the proposed project and the variant. Finally, although RPD owns the India Basin Open Space property, BUILD would design and may build this property's project components; therefore, the proposed uses of the India Basin Open Space property are described as part of the BUILD development discussions. Table 2-3 summarizes the components of the proposed project and the variant.

Table 2-3: Summary of Proposed Project and Variant Components

Proposed Feature	Proposed Project	Variant
Residential Space (# of units)	1,240,100 gsf (1,240 units)	417,300 gsf (500 units)
Commercial Space—retail, office, R&D	275,330 gsf	1,000,000 gsf
Institutional/Educational Space	50,000 gsf	50,000 gsf
Parking Space (# of spaces)	679,900 gsf (1,800 spaces)	717,365 gsf (1,932 spaces)
Publicly Accessible Recreation/Open Space (# of acres)	1,067,220 sq. ft. (24.5 acres)	1,067,220 sq. ft. (24.5 acres)
Total Space	**3,312,550 gsf**	**3,251,885 gsf**
Building Heights (# of floors)	160 feet (14 floors)	160 feet (14 floors)
Building Footprint (# of acres)	422,532 gsf (9.7 acres)	422,532 gsf (9.7 acres)
# of Bike Spaces	1,240 spaces	500 spaces

Notes: gsf = gross square feet; R&D = research and development; sq. ft. = square feet
Source: Compiled by AECOM in 2017

2.3.1 Demolition, Relocation, Restoration, and Remediation

RPD Development

India Basin Shoreline Park Property

The existing structures and landscaping on the India Basin Shoreline Park property would be demolished. Most of the current shoreline, composed of riprap and vegetated berm, would be removed and replaced or restored as a 0.64-acre improved tidal marsh wetland. Care would be taken, however, to avoid disturbing the existing remains

of the *Bay City*, the historic ship hull that is partially visible off the shoreline of the existing India Basin Shoreline Park. The proposed Marineway crosses over the identified remains of the *Caroline* and the proposed viewing deck is proposed over the hull of the *Bay City*. The foundation system of these park elements have not been fully developed, but the potential exists for piles required for the structures to be driven through the vessels.

In addition to retaining the visible *Bay City* resources, the project would include an interpretive exhibit explaining the history of the India Basin Scow Schooner Boatyard, including the remains of the *Bay City*, the *Caroline,* and the shipbuilding industry. This interpretive exhibit would be developed and installed in India Basin Shoreline Park and the 900 Innes property. It is anticipated that a component of the interpretive exhibit would be installed on the Marineway and on the deck outlining the hull of the *Bay City*, so that park visitors could read about the vessel while simultaneously viewing its remains from the deck. Current park amenities that would be demolished include a basketball court, picnic and barbeque areas, a play area, seating, and a portion of the vehicular access.

Grading the portions of the India Basin Shoreline Park property above the mean high-water (MHW) line would involve the excavation and relocation of roughly 20,000 cubic yards (CY) of soil. The higher existing elevations would be lowered by as much as 18 feet, whereas lower existing elevations would be raised by as much as 12 feet. It is the intent of the redevelopment design to maintain an overall cut/fill balance through regrading activities. Therefore, it is not expected that excess materials would be generated and require export and disposal off of this property; however, imported material may be used to construct final surfaces.

The property contains areas of artificial fill and as is typical of many Bayfront properties in San Francisco situated on artificial fill, contains some elevated levels of hazardous materials in subsurface soil, sediments, and groundwater (RPD, 2017a). Grading activities during redevelopment would be subject to provisions of the City's Maher Ordinance program (Article 22A of the San Francisco Health Code), administered by the San Francisco Department of Public Health (DPH). The Maher Ordinance applies to land at elevations above the MHW line that are Bayward of the historic 1852 high-tide line. For additional details regarding the For additional details regarding these existing conditions and the Maher Ordinance, see Section 3.16, "Hazards and Hazardous Materials."

Should environmental conditions be discovered during redevelopment activities that would require additional regulatory agency involvement, oversight, or permits, those agencies would be notified and appropriate procedures would be followed to comply with applicable laws and regulations.

Wetland restoration and other improvements along the shoreline of India Basin Shoreline Park would be completed under the following resource agency certification and permits:

- Clean Water Act (CWA) Section 401 water quality certification, administered by the San Francisco Bay RWQCB;
- CWA Section 404 permit, administered by the U.S. Army Corps of Engineers (USACE);
- Rivers and Harbors Act of 1899 Section 10 permit, administered by USACE; and
- BCDC permit authorizing improvements completed within BCDC's 100-foot shoreline band.

The certification and permits govern the improvement or relocation of wetlands, permanent or temporary placement of fill in the Bay, removal or installation of piles in the Bay, and other work completed within the agencies' jurisdictions. Within BCDC's 100-foot shoreline jurisdiction band on the India Basin Shoreline Park property, approximately 43,112 sq. ft. of net fill/grading would be required for creation of the proposed recreational and public access amenities, including a fixed pier and a floating dock. A subset of this net fill would be used to fill and grade the existing shoreline as necessary to achieve the proposed elevations that would support a range of aquatic habitat types (e.g., mudflat, salt marsh, upland buffer, and transitional habitat). Under the certification and permits, sediment quality criteria would be established for use in wetland habitat areas.

900 Innes Property

Before the start of redevelopment at 900 Innes, the property would undergo an environmental cleanup to remediate residual contaminants that are present because of historical industrial uses. The 900 Innes property was used by boatbuilding and ship repair facilities in the past. Environmental sampling of the subsurface of the property (RPD, 2017b) indicates that soils and sediments contain metals, polychlorinated biphenyls (PCBs), polyaromatic hydrocarbons (PAHs), and petroleum hydrocarbons, at varying levels. Groundwater at this property contains low levels of various metals, PAHs, and petroleum hydrocarbons. For additional details regarding these existing conditions, see Section 3.16, "Hazards and Hazardous Materials."

The RPD would complete site remediation under the regulatory oversight of the San Francisco Bay RWQCB under the agency's voluntary cleanup program. The goal of the remedial actions would be to restore the property to conditions that are protective of human and environmental health and safety. The RWQCB would establish environmental quality criteria for soil, sediment, and groundwater to remain at the property and a set of remedial action goals. It would then approve a Remedial Action Plan (RAP) designed to meet those goals. Remedial actions would be consistent with the conditions of resource agency permits. Before approval, the RWQCB would make the proposed RAP available for review and comment by the community, project partners, DPH, resource agencies' permitting authorities, and the U.S. Environmental Protection Agency (EPA).

The RPD has prepared a draft RAP for the 900 Innes property (RPD, 2017c). The draft RAP proposes excavation of soil and sediment, construction of clean soil and sediment covers where residual contamination remains at depth, and use of institutional controls to maintain the cover and prohibit sensitive uses on the site in the future. The draft RAP includes actions to protection construction workers, the surrounding community, and the environment during both remediation and redevelopment activities. The property would be remediated to the levels necessary to protect future employees, residents, visitors, and ecological receptors under future proposed park and recreational uses. RPD intends to implement the approved RAP for the 900 Innes property as part of the project. For additional details regarding the draft RAP, see Section 3.16, "Hazards and Hazardous Materials."

Following site remediation, RPD would undertake site redevelopment. The historic Shipwright's Cottage would be retained and restored in accordance with the Secretary of the Interior's Standards for Rehabilitation and would be required to receive a Certificate of Appropriateness from the San Francisco Historic Preservation Commission (HPC). A Certificate of Appropriateness is the entitlement required to alter an individual landmark and any property within a landmark district. Specifically, the building's exterior would be restored to its 1920s appearance, and the interior would be adaptively reused as a welcome center and public exhibition space.

The building would require construction of a new foundation, excavation of the lower level to increase the ceiling height by approximately 18 inches to comply with current regulations, and structural strengthening of the walls and roof framing for improved seismic performance. An existing addition at the northwest corner would be converted to a single-accommodation restroom on each level. Other later additions and interior partitioning would be removed. An existing interior stairway would be removed and the floor opening infilled. An existing window on the west façade of the upper level would be converted to a doorway to provide a second means of egress to the adjacent garden terraces. The existing brick chimney would be seismically reinforced and retained for its historic appearance, but would not be functional. The historic bargeboard will be replicated and installed on the primary façade and all replacement doors and windows that cannot be repaired will match historic doors and windows per historical photographs.

North of the Shipwright's Cottage on the 900 Innes property, the former Boatyard Office building may be retained, demolished, moved, and/or replaced depending on final project design. The condition of the building is not fully known at this time; depending on the final project design, the project may include retention or replacement in-kind of a portion of the roof form, a portion of the wood frame structure, and a portion of the wood cladding so that the massing of the building is still expressed. The Tool Shed that directly abuts the office building would be removed. An open-sided structure that interprets the Tool Shed building's massing and roof form and reuses original material and retains the foundation walls, where feasible, may be installed at the original building location. The extent of the character-defining features to be retained or replaced in-kind in the Boatyard Office building and/or Tool Shed and Water Tank building will depend upon additional condition assessments of the buildings, public safety concerns, ADA accessibility, seismic requirements, visibility and sight lines in relation to park design, and RPD programming needs and project goals. The project would include an interpretive exhibit explaining the history of the India Basin Scow Schooner Boatyard; the interpretive exhibit would be developed and installed in India Basin Shoreline Park and the 900 Innes Property.

The paint shop, a nonhistoric structure located approximately 32 feet north of the Tool Shed, would be removed and replaced with an open-sided structure that would interpret the building shape and roof form and reference the outline of the building footprint, reusing original material where feasible. The other two nonhistoric existing structures on the 900 Innes property—the blacksmith and machine shop, located at the end of the pier on the northeast end of the site, and the storage building (Figure 2-3)—would be demolished. Material from these buildings may be salvaged and reused for new construction within the cultural landscape, if feasible.

A 0.2-acre tidal marsh would be created and approximately 12 creosote-treated piles, which are part of the historical water fence post located in the Bay adjacent to this property, would be removed. However, an attempt would be made to replace these piles in place, if possible. In addition, two dilapidated piers and 20 other creosote-treated piles would be removed and replaced with new piers. Treated wood piles were historically used to support piers, wharves, bridges, and navigational aids. Many of these wooden piles were injected with creosote, a substance used from the mid-1800s into the 1950s to preserve wooden marine structures from decay. Creosote is a complex mixture of chemicals, many of which are toxic to fish and other marine organisms.

If possible, depending on other considerations, the original wood portions of the west marine way tracks would be replaced because they are contaminated. The original metal portion of the west marine way tracks would be remediated and left in place (see Section 3.4, "Cultural Resources"). The west marine way was historically used to

haul watercraft onto and off of dry land via horse team or capstan and winch.[11] Within BCDC's 100-foot jurisdiction shoreline band at the 900 Innes property, RPD proposes to remove a large portion of an existing concrete wharf, resulting in the removal of 963 sq. ft. of fill associated with hard structures. Within BCDC's jurisdictional area, approximately 41,600 sq. ft. of proposed cut material associated with the remediation activities would be removed. An equivalent volume of approximately 41,600 sq. ft. of fill/shading would be necessary to provide a final protective cover and restore the site to existing grades. These volumes are subject to the review and approval of the project's remedial action plan (RAP) by the San Francisco Bay RWQCB (discussed below).

Overall, grading activities at the 900 Innes property would involve off-hauling approximately 9,000 CY of sediment and soil, and approximately 12,000 CY of import would be necessary for site restoration and construction of final surfaces to the required elevations. To the extent feasible, the imported material would be derived from materials excavated from India Basin Shoreline Park, or other beneficial reuse sources would be used in compliance with the San Francisco Bay RWQCB's adopted waste discharge requirements and remedial action goals.

Work related to tidal marsh creation, removal of treated wood piles, and other in-Bay and shoreline work would be governed by San Francisco Bay RWQCB Section 401 certification and the conditions of USACE Section 404/Section 10 and BCDC permits.

The laws and regulations that apply to the remediation of contaminated materials are described in section 3.16, "Hazards and Hazardous Materials."

BUILD Development

India Basin Open Space Property

Under either the proposed project or the variant, a minimum 0.3-acre tidal marsh would be restored as improved tidal marsh wetlands. In addition, a minimum 0.48-acre freshwater seasonal wetland would be created and a drainage outfall that currently extends into the Bay would be removed. The seasonal freshwater wetland is being designed in anticipation of sea level rise to provide future habitat migration opportunities for the lower brackish saltwater wetlands.

Grading activities at the India Basin Open Space property would primarily involve cutting back the slopes connecting the upland areas to the lowlands to create elevations appropriate for seasonal wetlands and stormwater retention features. Filling in this property would be limited to regrading activities to create shoreline access, and to create a sand beach using imported sand. It is the intent of the redevelopment design to use the cut soil on-site for regrading activities. However, it is anticipated that approximately 3,300 CY of imported fill would be used to construct final surfaces. It is not expected that excess materials would be generated and require export and disposal off this property.

The property contains areas of artificial fill and as is typical of many Bayfront properties in San Francisco situated on artificial fill, contains some elevated levels of hazardous materials are present in soil, sediments, and groundwater at the site (RPD, 2016 and 2017a). Grading activities during redevelopment would be subject to

[11] A capstan and winch is a revolving cylinder with a vertical axis used for winding a rope or cable, powered by either a motor or levers.

provisions of the City's Maher Ordinance program (Article 22A of the San Francisco Health Code), administered by DPH. Should environmental conditions be discovered during redevelopment activities that would require additional regulatory agency involvement, oversight, or permits, those agencies would be notified and appropriate procedures would be followed to comply with laws and regulations. For additional details regarding hazardous materials conditions, see Section 3.16, "Hazards and Hazardous Materials."

Wetland restoration and other project activities along the shoreline of the India Basin Open Space property would be completed under the following resource agency certification and permits:

- CWA Section 401 water quality certification, administered by the San Francisco Bay RWQCB;
- CWA Section 404 permit, administered by USACE;
- Rivers and Harbors Act of 1899 Section 10 permit, administered by USACE; and
- BCDC permit authorizing improvements completed within BCDC's 100-foot shoreline band.

The certification and permits govern the improvement or relocation of wetlands, permanent or temporary placement of fill in the Bay, removal or installation of piles in the Bay, and other work completed within the agencies' jurisdictions. Under the certification and permits, sediment quality criteria would be established for use in wetland habitat areas.

700 Innes Property

Under either the proposed project or the variant, the existing five buildings and structures on the 700 Innes property (including the 838-840 Innes Avenue and 888 Innes Avenue buildings listed in Table 2-2) would be demolished or relocated. More specifically, the four buildings at 838-840 Innes Avenue and 888 Innes Avenue would be demolished while the historic building at 702 Earl Street, currently used as a residence, would be relocated to the northern portion of the 700 Innes property, closer to the shoreline. At the northwest corner of the property, BUILD would remove an existing pier and eight associated creosote-treated piles. Also on this property, a 0.1-acre tidal marshland would be created. Grading and site preparation activities at the northwest corner of the property, which is located adjacent to the Bay, would involve a net increase of 70 CY of fill. The additional fill would be necessary for site restoration and construction of final surfaces to the required elevations.

Grading and site preparation activities at the 700 Innes property would involve excavating foundations for construction of a one- to three-level underground garage. An overall cut/fill balance would be maintained through grading activities, which would require the average elevation to rise by several feet. Therefore, it is not expected that excess materials would be generated and require export and disposal off this property; however, imported material may be used to construct final surfaces.

The property contains areas of artificial fill and was historically used for industrial activities. As is typical of many Bayfront properties in San Francisco situated on artificial fill, and consistent with such former uses, some elevated levels of hazardous materials are present in soil, sediments, and groundwater at the site (San Francisco, 2017).

Grading activities during redevelopment on areas above the MHW line would be subject to provisions of the City's Maher Ordinance Program (Article 22A of the San Francisco Health Code), administered by DPH. For additional details regarding hazardous materials conditions, see Section 3.16, "Hazards and Hazardous Materials."

Approximately 0.31 acre of seasonal wetlands would be relocated from the 700 Innes property to the India Basin Open Space property as part of a larger 0.48-acre seasonal wetland. Wetland restoration and other project activities along the shoreline of the 700 Innes property would be completed under the following resource agency certification and permits:

- CWA Section 401 water quality certification, administered by the San Francisco Bay RWQCB;
- CWA Section 404 permit, administered by USACE;
- Rivers and Harbors Act of 1899 Section 10 permit, administered by USACE; and
- BCDC permit authorizing improvements completed within BCDC's 100-foot shoreline band.

The certification and permits govern the improvement or relocation of wetlands, permanent or temporary placement of fill in the Bay, removal or installation of piles in the Bay, and other work completed within the agencies' jurisdictions. Under the certification and permits, sediment quality criteria would be established for use in wetland habitat areas.

2.3.2 Land Uses

The following figures show land uses, building heights, and building elevations on the project site under either the proposed project or the variant:

- *Figures 2-4a, 2-4b, and 2-4c:* Land use plan for the India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes properties
- *Figures 2-5a and 2-5b:* Building heights for the India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes properties
- *Figures 2-6a and 2-6b:* East and north building elevations for the India Basin Open Space and 700 Innes properties
- *Figures 2-7a and 2-7b:* South and west building elevations for the India Basin Open Space and 700 Innes properties

Portions of the project-related RPD and ROW properties are currently zoned M-1, NC-2, M-2, and P, and are within the 40-X and OS height and bulk districts. Those properties located within the future public park network would be rezoned to P; some portions of existing unaccepted ROW would be incorporated into the future mixed-use urban village and would require rezoning into a special use district (SUD) with specific height, bulk, and use designations appropriate for the proposed development, through amendments to the *San Francisco General Plan* (General Plan), Planning Code text, and the Zoning Map.

The 700 Innes property is currently zoned M-1 and NC-2 and is within the 40-X Height and Bulk District. The proposed uses on the 700 Innes property would require rezoning into an SUD with specific height, bulk, and use

designations appropriate for the proposed development, through amendments to the General Plan, Planning Code text, and the Zoning Map.

Commercial/Office Uses

RPD Development

India Basin Shoreline Park Property

Approximately 1,500 gsf of park-serving commercial uses (specifically a kayak concession area and office) would be developed on the India Basin Shoreline Park property with the "outfitter building" (Figure 2-4a).

900 Innes Property

Approximately 2,750 gsf of park-serving commercial uses (specifically concessions in the "overlook pavilion") would be developed on the 900 Innes property (Figures 2-4a and 2-5a) and would range up to 20.5 feet in height.

BUILD Development

India Basin Open Space Property

Under either the proposed project or the variant, approximately 2,000 gsf of commercial uses (specifically a café, maintenance facility, rentals, and concessions) would be built adjacent to the India Basin Open Space property on the 700 Innes site. This structure is designed to be integrated with the improved India Basin Open Space property to serve the publicly accessible beach and open space (Figures 2-4b and 2-4c).

700 Innes Property

Proposed Project

Under the proposed project, up to 275,330 gsf of commercial, retail, R&D, or flex space would be developed at select ground-floor locations (Figure 2-4b). The commercial and retail uses would be distributed throughout the residential development and would be phased in as the residential units are built to achieve a mixed-use development pattern. The primary retail uses would front New Hudson Avenue. Uses could include food markets, retail sales, dry cleaners, coffee shops, artist studios, restaurants and bars, and commercial venues that would relate to shoreline activities (e.g., sports, leisure).

Variant

Under the variant, up to 1 million gsf of retail, commercial, R&D, or flex space would be developed (Figure 2-4c). Along Innes Avenue, commercial/retail buildings would be constructed between New Griffith Street and Earl Street, resulting in 724,670 gsf more commercial uses than under the proposed project. In addition, as under the proposed project, retail, commercial, or flex space would be developed at select ground-floor locations.

Residential Uses

RPD Development

India Basin Shoreline Park Property

No residential units would be built on the India Basin Shoreline Park property (Figure 2-4a).

900 Innes Property

No residential units would be built on the 900 Innes property (Figure 2-4a).

BUILD Development

India Basin Open Space Property

No residential units would be built on the India Basin Open Space property (Figures 2-4b and 2-4c).

700 Innes Property

Proposed Project

Under the proposed project, up to 1,240 residential units (1,240,100 gsf) would be developed in buildings ranging from one to 14 stories (20–160 feet tall) (Figures 2-4b, 2-5b, 2-6a, and 2-7a). The final number of units would depend on the unit mix, which would consist roughly of 198 studio units (16 percent), 236 one-bedroom units (19 percent), 682 two-bedroom units (55 percent), and 124 three-bedroom units (10 percent). The proposed project is subject to the San Francisco Inclusionary Affordable Housing Program (Planning Code Section 415) and would comply with the program by either providing on-site or off-site units or paying an in-lieu fee, as required by the Planning Code, or as otherwise specified in the development agreement.

Variant

Up to 500 residential units (417,300 gsf) would be developed under the variant (Figures 2-4c, 2-5b, 2-6b, and 2-7b). Although the variant would have 740 fewer units than the proposed project, the layout of residential development would generally be similar. The residential buildings would be located primarily north of New Hudson Avenue, with a small number of units west of New Griffith Street. In addition, residential uses would be constructed above the commercial uses. Buildings would range from one to 14 stories (20–160 feet tall) (Figures 2-6b and 2-7b). The final number of units would depend on the unit mix and would consist roughly of 50 studio units (10 percent), 125 one-bedroom units (25 percent), 275 two-bedroom units (55 percent), and 50 three-bedroom units (10 percent). The variant is subject to the Inclusionary Affordable Housing Program and would comply with the program by either providing on-site or off-site units or paying an in-lieu fee, as required by the Planning Code, or as otherwise specified in the development agreement.

Institutional/Educational Uses

RPD Development

India Basin Shoreline Park Property

Approximately 915 gsf of institutional uses, in the form of covered outdoor space; and a restroom of up to 350 square feet, would be built on the India Basin Shoreline Park property (Figure 2-4a).

900 Innes Property

On the 900 Innes property, approximately 1,700 gsf of institutional uses at the welcome center and public exhibition space would be created inside the renovated Shipwright's Cottage; 1,830 square feet in the "shop building" would be created on the footprint of the former paint shop and compressor house; a 1,500 square foot maintenance building would be created northwest of the bike path; and an up to 300 square foot structure may be retained and/or created on the location of the former Boatyard Office Building (Figure 2-4a). In addition, a shade structure of up to 940 square feet may be created on the footprint of the former Tool Shed and Water Tank building.

Source: GGN, 2017

Figure 2-4a **Proposed Project Site and Land Use Plan (India Basin Shoreline Park and 900 Innes Properties)**

Source: SOM, 2017

Figure 2-4b **Proposed Project Site and Land Use Plan (India Basin Open Space and 700 Innes Properties)**

Source: SOM, 2017

Figure 2-4c Variant Site and Land Use Plan (India Basin Open Space and 700 Innes Properties)

BUILD Development

India Basin Open Space Property

Under either the proposed project or the variant, no institutional uses would be built on the India Basin Open Space property (Figures 2-4b and 2-4c).

700 Innes Property

Under either the proposed project or the variant, an approximately 50,000-gsf structure for a school would be constructed on the 700 Innes property (Figures 2-4b and 2-4c). The school is anticipated to serve up to 450 students in kindergarten through 8th grade. See Section 2.3.11, "Phasing and Construction," for information about school construction. In addition, at least one on-site childcare facility would be provided on this property; the specific location and size of this childcare facility have not yet been determined.

Recreational and Open Space Uses

RPD Development

All RPD-managed properties (India Basin Shoreline Park, 900 Innes, and India Basin Open Space), plus some additional ROWs and the newly proposed "Big Green," would be enhanced for park and open space use. Taken together, these properties would provide a 20.81-acre network of new and/or improved parkland and open space, pathways, and trails. The new shoreline network would extend the Blue Greenway/Bay Trail and would provide pedestrian and bicycle connections to and along the shoreline. The park spaces planned for the India Basin Shoreline Park and 900 Innes properties are characterized below, followed by overall descriptions of the development proposed for each property. The specific programming elements of the RPD development properties would be determined during the conceptual design phase.

The India Basin Shoreline Park and 900 Innes properties would consist of six distinct park spaces (Figure 2-8):

- The *Marsh Edge* would replace the park's existing hard riprap edge with a vegetated buffer to provide habitat for wildlife and a degree of adaptation for future sea-level rise and storm events. Informal pedestrian paths are proposed adjacent to the marsh plantings.
- The *Sage Slopes* would include a playground, adult fitness programming, informal walking trails, two basketball courts, skate trails nestled within plantings of native California sage scrub, and a viewing deck outlining the hull of the *Bay City*.[12]
- The *Marineway* would include a large sloping lawn for active and passive recreation uses, transitioning into a gravel beach and feature a pier extending into India Basin to access a large floating platform. A 1,500-sq.-ft. kayak/boat storage and rental structure (outfitters building) would be located on land at the entry to the pier, near the vehicular turnaround. The floating platform would provide an ADA-accessible boat launch.
- The *Historic Shorewalk* would include a wide paved area following the path of the Bay's historic shoreline. The walkway would be lined with benches, porch swings, and areas for picnic tables and gatherings.

[12] As a component of the interpretive exhibit would be installed on the viewing deck outlining the hull of the *Bay City*, park visitors could read about the vessel while simultaneously viewing its remains from the deck.

- The *Neighborhood Edge* would run the length of the expanded park along Innes Avenue. This area would include: a welcome center, gallery space and small concession in the Shipwright's cottage, potentially a retained or reconstructed Boatyard office building, potentially an open-frame interpretation of the Tool Shed structure, an ADA-accessible restroom also in the restored historic Shipwright's Cottage, a covered overlook pavilion with space for food vendors and restrooms, an ADA-accessible entry path to the park, and a Class 1 bikeway. The Griffith Street ROW near the Shipwright's Cottage would become a pathway distinguished as a contributing element to the historic landscape.
- The *Scow Schooner Boatyard* would retain some of the existing concrete surface of the existing historic boatyard, although some areas would be removed or resurfaced to create an ADA-compliant surface.

India Basin Shoreline Park Property

The 5.6-acre India Basin Shoreline Park property would be redesigned to serve the surrounding community and enhance citywide program offerings. The Blue Greenway/Bay Trail and a Class 1 bikeway would continue through this park. Pedestrian, bicycle, and vehicular access to the shoreline would be enhanced (Figure 2-4a). Potential project elements for this property include improved and upgraded playground and recreational facilities including two basketball courts; restrooms; additional trees; interpretive exhibits explaining the history of the India Basin Scow Schooner Boatyard, including the remains of the various ship hulls located within the confines of the India Basin Shoreline Park; improved lawn areas; a promenade; event areas; a water feature; barbeque pits; drinking fountains; a pier and dock with human-powered boat launch ramp, art installations, fishing areas, and lighting; and an exercise or cross-training course. The existing surface parking, vehicular access, and drop-off and loading zones also may be improved. In addition, 0.64 acre of tidal marsh and wetlands would be created along the shoreline.

900 Innes Property

The 900 Innes property would be developed as a waterfront park providing a connection between India Basin Shoreline Park and the India Basin Open Space. This park also would provide a connection for the Blue Greenway/Bay Trail, the Class 1 bikeway, and pedestrian and bicycle access to the shoreline. Other potential project elements for this property include piers, fishing areas, plazas, event areas, tidal marshes, facilities for concessions, drinking fountains, restrooms, passive recreational areas for picnicking, shade structures, bicycle parking, wayfinding signage, and historical and educational displays.

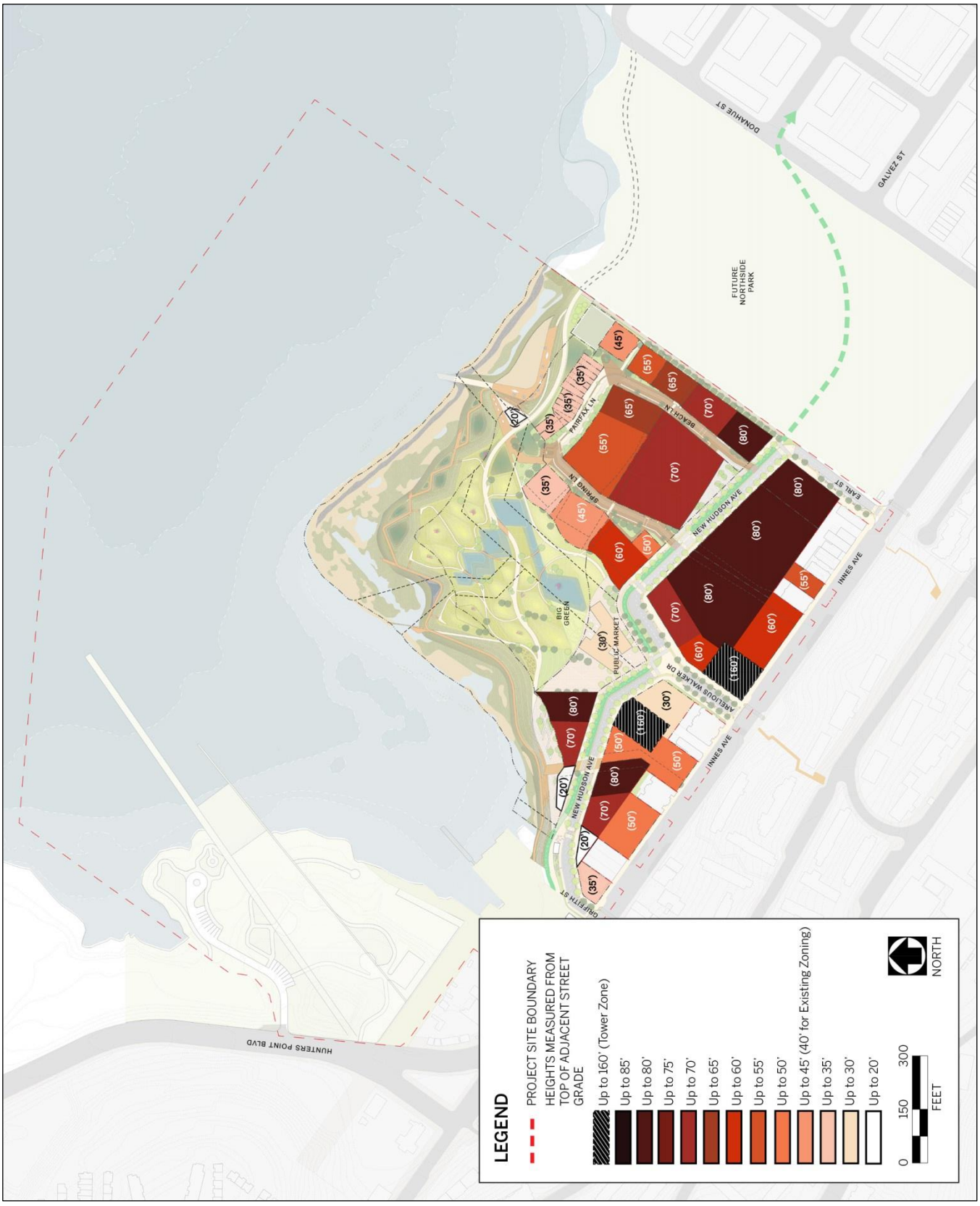
BUILD Development

India Basin Open Space Property

Under either the proposed project or the variant, the 6.2-acre India Basin Open Space property, which currently consists of benches, upland habitat, tidal salt marsh, mudflats, sand dunes, and native vegetation, would remain in a natural state with some enhancements for public access, recreation, and ecological function (Figures 2-4b and 2-4c). Tidal wetlands currently occupy approximately 2.5 acres of this property. The proposed enhancements could include sand dunes, bird islands, a recreational beach area, a boat launch (directly from the land), a bioengineered breakwater, brackish lagoons, scrub upland plantings, tree stands for wind buffering, and new wetlands and ponds.

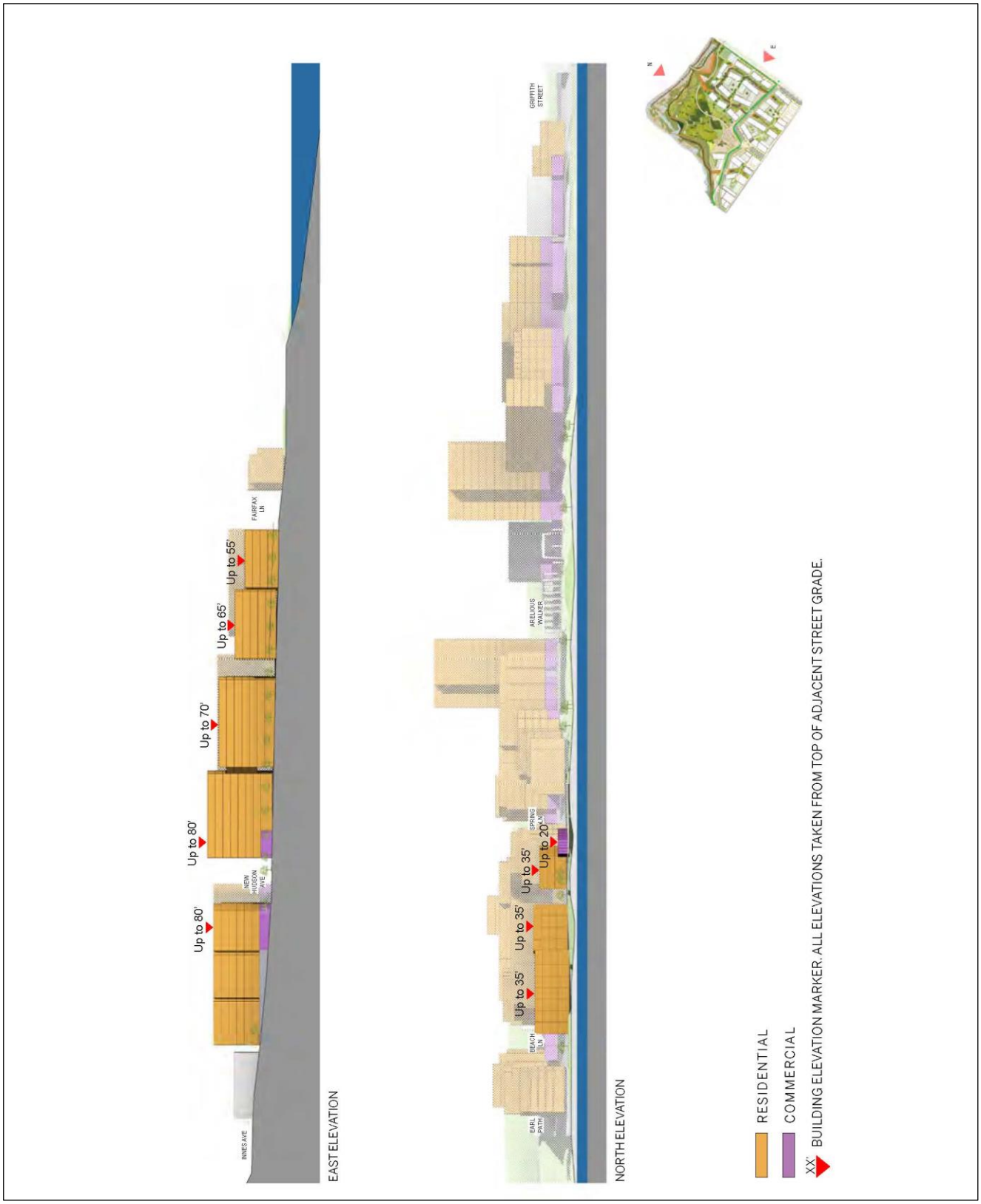
Source: GGN, 2017

Figure 2-5a Proposed Project Building Heights (India Basin Shoreline Park and 900 Innes Properties)



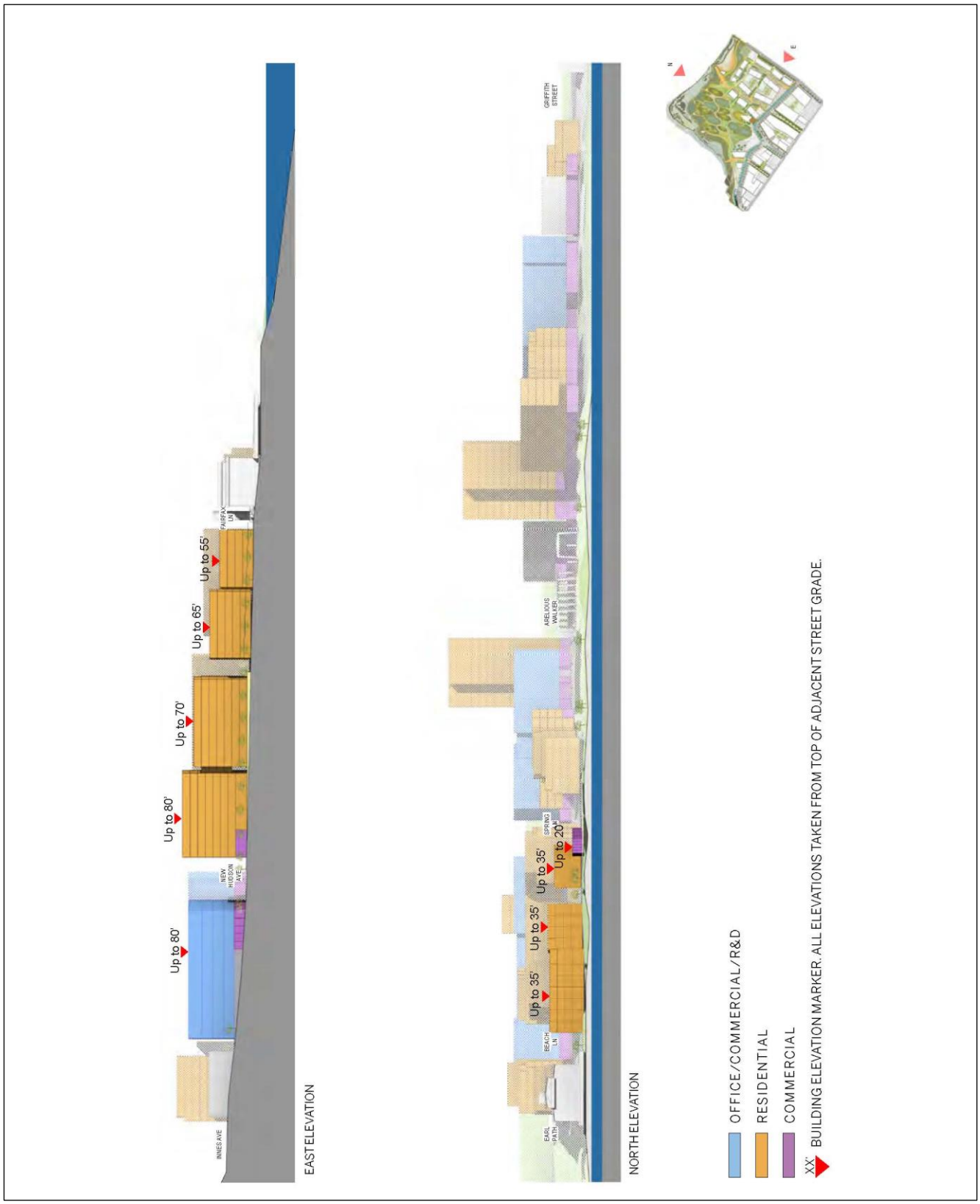
Source: SOM, 2017

Figure 2-5b Proposed Project and Variant Building Heights (India Basin Open Space and 700 Innes Properties)



Source: SOM, 2017

Figure 2-6a **Proposed Project East and North Building Elevations (India Basin Open Space and 700 Innes Properties)**

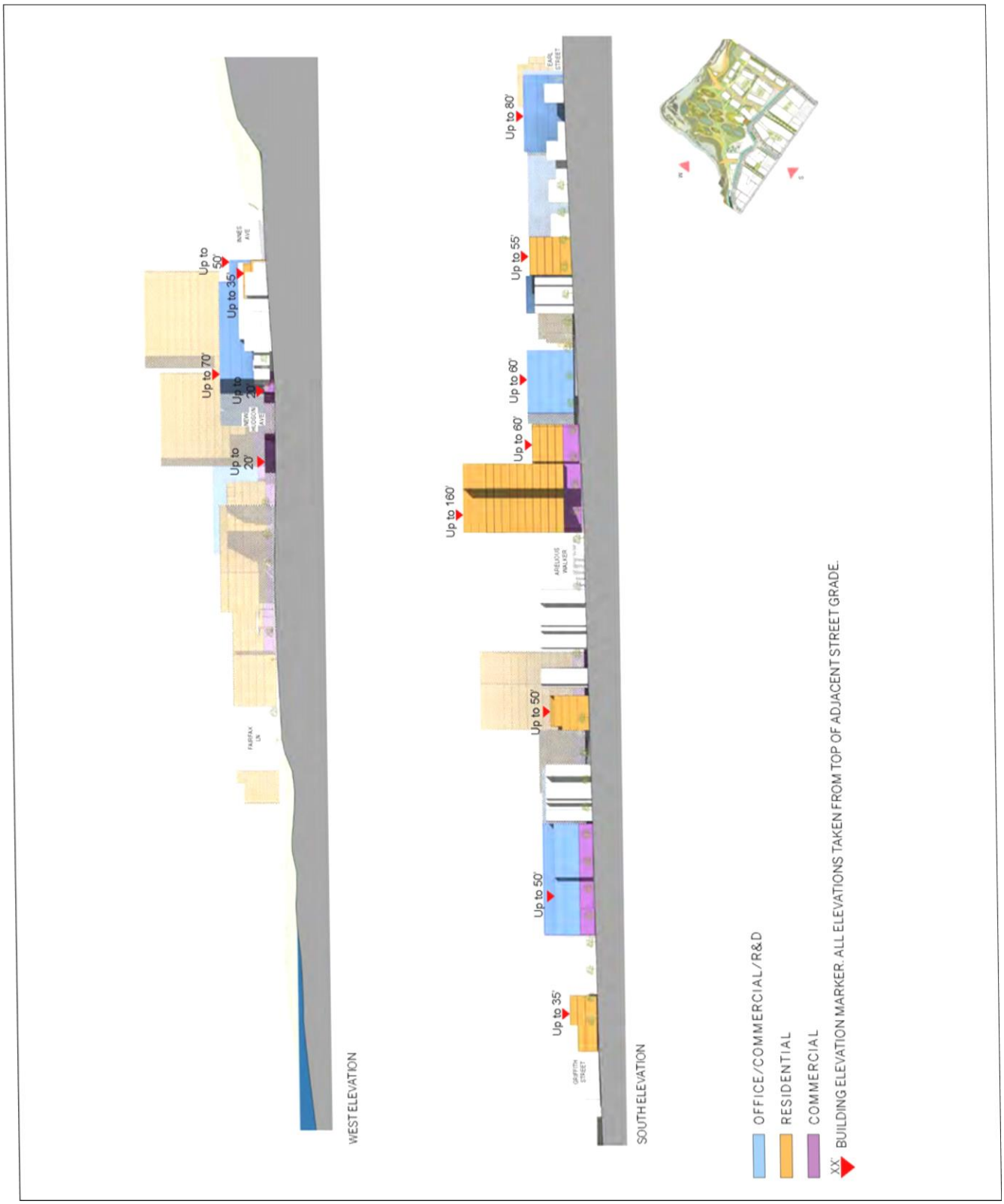


Source: SOM, 2017

Figure 2-6b **Variant East and North Building Elevations (India Basin Open Space and 700 Innes Properties)**

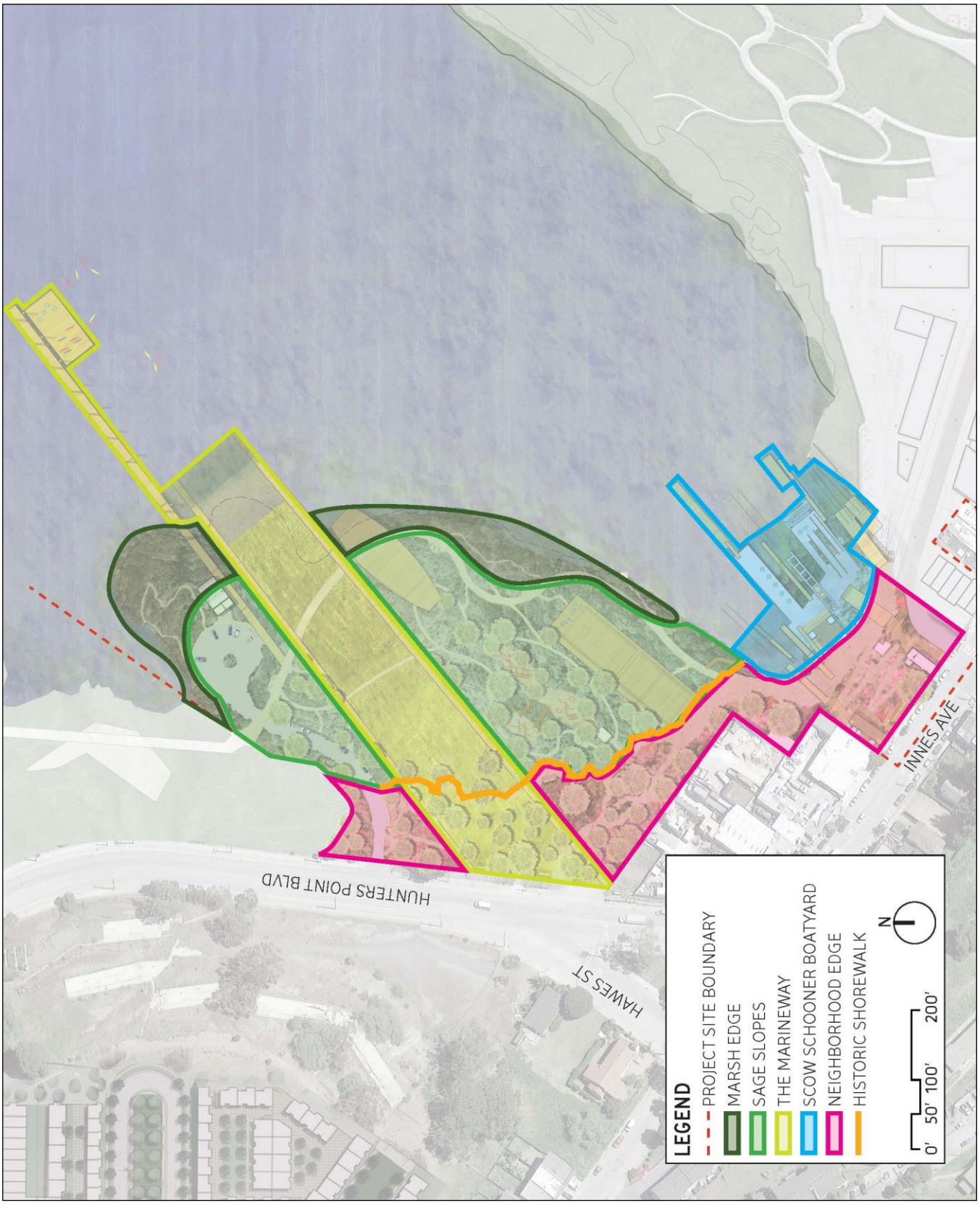
Source: SOM, 2017

Figure 2-7a **Proposed Project South and West Building Elevations (India Basin Open Space and 700 Innes Properties)**



Source: SOM, 2017

Figure 2-7b **Variant West and South Building Elevations (India Basin Open Space and 700 Innes Properties)**



Source: GGN, 2017

Figure 2-8 **Distinct RPD Park Spaces**

The proposed improvements would be informed by technical studies, and then finalized by RPD and regulatory agency review and approvals. Boardwalks, trails, and stairways would connect the India Basin Open Space property with an approximately 5.47-acre, publicly owned and accessible open space area referred to as the "Big Green," and an approximately 0.43-acre hardscape public area called the "Cove Terrace," which would be built by BUILD and transferred in fee to the City by and through the SF Port, subject to the Burton Act trust, to be managed by RPD through an interdepartmental agreement. This area, described further below under "700 Innes Property," would provide continuous public access to the Bay shoreline.

700 Innes Property & ROWs

Both the proposed project and the variant would develop an approximately 5.47-acre, publicly owned park, referred to as the "Big Green" and an approximately 0.43-acre hardscape public area called the "Cove Terrace," adjacent to, and integrated with, the existing India Basin Open Space property (Figures 2-4b and 2-4c). The Big Green would provide pedestrian and bicycle pathways, sculpted grasslands, stormwater bio-retention ponds, swales, planters, a wet meadow, park benches and pavilions, and groves of trees. It would also include some children's play areas, a fitness loop, and some small gathering spaces. The amount of private open space available would differ between the proposed project and the variant, as described below.

Proposed Project

Under the proposed project, the proposed development would also include approximately 3.22 acres of private open space for shared use by residents (courtyards and roof decks, not publicly accessible) and individual units (private decks and patios for residents) (Figure 2-4b).

Variant

Under the variant, the proposed development would also include approximately 2.75 acres of private open space for shared use by residents (courtyards and roof decks, not publicly accessible) and individual units (private decks and patios for residents) (Figure 2-4c).

2.3.3 Architecture and Design

Proposed structures would be constructed to the standards required by the San Francisco Green Building Ordinance, which establishes Leadership in Energy and Environmental Design (LEED) certification levels or GreenPoint Rated system points for various types of buildings. Specifically, the proposed RPD development would be constructed to a LEED Gold rating or equivalent, and the BUILD development would be constructed to a LEED Silver rating or equivalent. Because of the length of the buildout period for the RPD properties, the design details of individual buildings and structures would be further refined as specific building permits are sought.

RPD Development

India Basin Shoreline Park Property

The proposed conceptual design would include a wood deck entry plaza with arbor and porch swings along Hunters Point Boulevard. Additionally, two basketball courts, a Class 1 bikeway, and vehicular access at the existing drive would invite a variety of users into the site through the sage slope gardens and onto the Historic Shorewalk, accessed via Hunters Point Boulevard.

The Marineway lawn component of the proposal would extend north from the park entry and terminate at the water, at a beach for people to sit or kayakers to launch boats during higher tides, while a fixed pier would extend out into India Basin to meet a new floating platform. A viewing deck with seat steps extending to the edge of the enhanced Marsh Edge would be constructed over the buried remains of the *Bay City*, one of the historic ship hulls located within the Park. The deck would function as an interpretive exhibit conveying the history of the India Basin Scow Schooner Boatyard, including the remains of the *Bay City*. An outfitter building, located on land adjacent to the pier, would provide storage for kayaks, canoes, and life jackets; a kayak and canoe rental service; and office space to operate RPD programming. Members of the public would launch their own boats as well as the rental kayaks and canoes, and covered areas for shelter would provide space for birders, outdoor classes, and picnicking.

A single-stall restroom would be provided in the outfitter building, adjacent to the Bay Trail and close to the vehicular turnaround. A multi-stall restroom would also be located near the adventure play area.

900 Innes Property

Anchored by use of the restored historic Shipwright's Cottage as a welcome center and gallery space, the proposal for the 900 Innes property aims to preserve the character of the existing boatyard and honor the site's past while allowing direct access to the water at the original shoreline and floating docks. The Shipwright's Cottage would be retained and rehabilitated to the SOI Standards. The Boatyard Office building may be retained or may be demolished. Both are character-defining features of the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape.[13] The project may demolish or may interpret the third remaining significant building (the Tool Shed and Water Tank building) by keeping or replacing in-kind portions of the foundation and structural elements, where feasible, to reflect the building's massing, to construct in-kind a roof that matches the existing roof form, and to reuse or replace in-kind some cladding materials. The storage yard would be retained as an open area, and scale and materials would distinguish historic circulation paths from nonhistoric paths. If possible, depending on other considerations, the original wood portions of the west marine way tracks would be replaced because they are contaminated. The original metal portion of the west marine way tracks would be remediated and left in place.

Along Innes Avenue, the proposed ADA-accessible entry path into the park would be flanked by two small structures, the Shipwright's Cottage to the east (right) of the ADA-accessible path and the new overlook pavilion to the west (left). The overlook pavilion would have both an enclosed building space and a covered open-air space

[13] The India Basin Scow Schooner Boatyard Vernacular Cultural Landscape is a CRHR-eligible resource located within both 900 Innes Avenue and India Basin Shoreline Park and includes the following features: the Bay; roads and paths; ship hulls, structures such as marine ways and docks; and buildings, including the aforementioned Shipwright's Cottage, that were in use between 1875 and 1936.

overlooking the boatyard. The Innes Avenue level of the overlook pavilion would provide room for food vendor operations and an ADA-accessible restroom. A larger set of multi-stall public restrooms and park storage would be provided on the lower level facing the boatyard. The boatyard's former paint shop would be repurposed into the shop building, an open-air space for uses such as boatbuilding and other carpentry that also would store tools and equipment for repair workshops. A maintenance building is proposed northwest of the bike path.

BUILD Development

Because of the length of the buildout period for the BUILD properties, the design details of individual buildings and structures would be further refined as specific building permits are sought. The design of all buildings and streetscape elements would be subject to the development controls established by the India Basin SUD and a Design Standards and Guidelines (DSG) document to be adopted by the Planning Commission (included in this EIR as Appendix B); a project Development Agreement (DA); and design review for each phase by the Planning Director and/or Planning Commission in accordance with the SUD, DSG, and DA.

The India Basin SUD and DSG would include development standards for land uses. Regulations would govern maximum allowable development, street frontage, site coverage, setbacks, height, building separation, bulk and massing controls, vehicle parking, bicycle parking, loading, buildings, streetscape, and open space. Other design regulations would guide the design of the proposed commercial, residential, retail, arts, and open space uses. The development agreement would outline project approvals for the duration of a phased buildout and would dictate responsibilities for constructing and managing community improvements. Individual buildings and structures would be designed by design firms that would be selected in the future.

India Basin Open Space Property

Under either the proposed project or the variant, a small single-story building with a small café, maintenance facility, rentals, and concessions would be built adjacent to the India Basin Open Space property within the Big Green.

700 Innes Property

Proposed Project

The conceptual land use plan for the 700 Innes property under the proposed project is characterized by buildings ranging in height from one to 14 stories (20 to 160 feet tall) and concentrated along Innes Avenue, Arelious Walker Drive, Hudson Avenue, New Hudson Avenue, and Earl Street (Figures 2-5b, 2-6a, and 2-7a). Based on the site's hydrology, geotechnical conditions, cultural resource considerations, biological resources, projected sea-level rise, and site access, the site plan proposes concentrating development in a dense, compact area along Innes Avenue, Earl Street, and New Hudson Avenue.

Buildings located in the western corner of the 700 Innes property would be adjacent to the India Basin Scow Schooner Boatyard site; those nearest the site's eastern boundary would be two to three stories tall, with building heights rising as they move eastward to accommodate the existing slope of the site. The westernmost two-story volume would allow a height transition down to the site of the one-story Shipwright's Cottage and boatyard. The CRHR-eligible 702 Earl Street building would be relocated and rehabilitated on a parcel closer to the Bay. The

rehabilitation would involve constructing a new building foundation and walls on the new site, as well as an attached elevator tower, first-story loading dock, second-story deck, third-story walkway, and new openings into the building.

Variant

Up to 500 dwelling units and up to 1 million gsf of commercial/institutional uses (retail/commercial/R&D) would be developed on the 700 Innes property under the variant. Project elements would be as described above for the proposed project under "Institutional/Educational Uses," "Recreational and Open Space Uses," and "Architecture and Design." Differences relative to the proposed project are described below.

The variant's overall massing form, block structure, and street layout would be similar to those for the proposed project. The primary difference would be along Innes Avenue, where commercial/institutional buildings would be constructed between Arelious Walker Drive and Earl Street. The residential mixed-use buildings generally north of New Hudson Avenue, institutional/educational uses, and public open space would be similar under the proposed project and the variant. The commercial buildings would range in height from one to seven stories (20–90 feet tall), but the 14-story towers included in the proposed project would remain (Figures 2-5b, 2-6b, and 2-7b).

Similar to the proposed project, the design of the variant would include a gradual transition in building heights sloping away from the Shipwright's Cottage toward the Bay to the east. The 702 Earl Street building would also be relocated and rehabilitated because it qualifies as a CRHR-eligible resource.

2.3.4 Landscaping

RPD Development

India Basin Shoreline Park Property

RPD would extend the shorewalk at the India Basin Shoreline Park property out toward the water. The proposed Sage Slopes and Marineway areas would provide two different park experiences for accessing the water. Nestled within plantings of native California sage scrub, the Sage Slopes' large playground, adult fitness programming, informal walking trails, viewing deck, basketball courts, and skate trails would provide recreational opportunities within a serene, drought-tolerant landscape. The Marineway would provide a direct connection down to the water, with a level lawn for active pickup sports and areas for barbeques and picnic tables for groups near the Historic Shorewalk area and a sloped lawn for lounging, playing, and hosting events closer to the water's edge.

The Marsh Edge area would be restored by replacing the hard riprap edge along India Basin Shoreline Park with a soft, vegetated buffer that would provide habitat for birds and animals and improve the park's ability to adapt to sea level rise and storm surges.

900 Innes Property

On the 900 Innes property, the proposed Scow Schooner Boatyard area would feature shoreline plantings, water feature, seating and picnic tables, and restored artifacts from the boatyard, such as the marine way rails and potentially the Tool Shed interpretive structure. The existing concrete surface at the boatyard would remain in

place wherever possible and resurfaced to create an ADA-compliant surface, and selected areas of crumbling concrete could be replaced with tidal marsh wetlands. Historic pathways would be retained and highlighted through the use of scale and materials and the historic yard areas would be retained as an open area with minimal plantings.

BUILD Development

India Basin Open Space Property

Existing wetlands and tidal marshes on the India Basin Open Space property would be enhanced and new tidal marsh would be created in the property's northwest and northeast sections. Approximately 0.31 acres of new seasonal wetland would be created. Grading and earthwork would occur and native and adaptive species would be planted. There would also be an elevated pedestrian boardwalk, pier, and gravel beach.

700 Innes Property

Under either the proposed project or the variant, the Big Green would retain its natural character and could include grasslands, stormwater bioretention ponds, swales, planters, a wet meadow, and groves of trees. It would also include some children's play areas, a fitness loop, and some small gathering spaces. Paved walking paths throughout the Big Green would connect with pathways in India Basin Open Space. Treatment planters and permeable surfaces would be present throughout the development to help manage stormwater, and the buildings would have landscaped patios and terraces.

2.3.5 Shoreline and In-Water Uses

RPD Development

India Basin Shoreline Park Property

On the India Basin Shoreline Park property, RPD would construct a new 12-foot wide pier that would extend 480 feet into the Bay. Directly adjacent to this pier, a 50-foot by 100-foot floating dock would feature an ADA-accessible boat launch area that would provide access to the Bay for human-powered boats. A barge may be needed to build portions of the pier offshore in deeper waters of the Bay.

RPD would also partially or wholly replace the riprap edge on the India Basin Shoreline Park property with tidal wetlands. The wetlands would be created from the land side during low tide. Care would be taken, however, to avoid physically disturbing the existing remains of the *Bay City* and *Caroline*, historic ship hulls that are partially visible off the shoreline of the existing India Basin Shoreline Park. The proposed Marineway crosses over the identified remains of the *Caroline* and the proposed viewing deck is proposed over the hull of the *Bay City*. An interpretive exhibit explaining the history of the India Basin Scow Schooner Boatyard, including the remains of the *Bay City* and other buried ship hulls, would be developed and installed in India Basin Shoreline Park so that park visitors could learn about the vessel while simultaneously viewing its remains from above.

Finally, a gravel beach would be created at the end of the grass Marineway for people to sit or kayakers to launch boats during higher tides.

900 Innes Property

RPD would replace two piers on the 900 Innes property, one measuring 12-foot wide and-125 foot long and another that has nearly collapsed into the Bay. The structures would be replaced by two floating docks, both of which would be laterally supported by concrete piles. One replacement dock would measure approximately 12 feet wide and 120 feet long, and the other approximately 18 feet wide and 50 feet long. Adjacent to the smaller dock, a fixed pier measuring approximately 6 feet wide by 104 feet long would be constructed. The piers and docks would include minor furnishings such as benches, and would be used solely for pedestrian access. Boat access would not be available on any of the 900 Innes piers.

In addition, an attempt would be made to restore and enhance the eroded west marine way tracks, which were historically used to haul watercraft onto and off of dry land via horse team or capstan and winch.[14] If possible, depending on other considerations, the original wood portions of the west marine way tracks would be replaced because they are contaminated. The original metal portion of the west marine way tracks would be remediated and left in place.

BUILD Development

India Basin Open Space Property

BUILD may also replace a portion of the riprap edge on this property with tidal wetlands along the shoreline. The wetlands would be created on the land side during low tide. In addition, an existing drainage outfall would be removed.

700 Innes Property

BUILD would remove an existing pier and associated piles in the northwest corner of the 700 Innes property, which is the only area of this property where shoreline access is available (Figure 2-5b).

2.3.6 Circulation Network

The following figures show the elements of the circulation network as proposed for the India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes properties:

- *Figures 2-9a and 2-9b:* Vehicular circulation and access
- *Figures 2-10a and 2-10b:* Emergency vehicle access
- *Figures 2-11a and 2-11b:* Transit and pedestrian crossings
- *Figures 2-12a and 2-12b:* Pedestrian paths and access
- *Figures 2-13a and 2-13b:* Bicycle circulation and access

[14] A capstan and winch is a revolving cylinder with a vertical axis used for winding a rope or cable, powered by either a motor or levers.

Vehicular Access and Circulation

RPD Development

India Basin Shoreline Park Property

Vehicular access to the India Basin Shoreline Park property would be provided by Hunters Point Boulevard (Figures 2-9a and 2-10a). On-street parking would be available along Hawes Street and a limited-access turnaround would provide loading-zone access to the Marineway lawn and the floating pier. Emergency vehicle access to the 900 Innes property would be permitted on the Class 1 bikeway, the Bay Trail/shared use path, and the limited-access turnaround (Figure 2-10a).

Figure 2-11a shows proposed transit routes and pedestrian crossings to access the India Basin Shoreline Park property. The existing vehicular ROW on the western edge of the property, at Hudson Avenue, would be removed. However, it may be maintained to provide vehicular access to the privately-owned properties across Hudson Avenue (outside of the project site boundary). If removed, access would only be possible from Hunters Point Boulevard or Innes Avenue if it would not create unacceptable conflicts between vehicles, cyclists, and pedestrians. RPD will consider maintaining public access on Hudson Avenue to facilitate adjoining development that would activate and complement the park frontage.

The redesigned entrance to India Basin Shoreline Park off Hunters Point Boulevard would incorporate safety precautions for the proposed dedicated bicycle lane, which would run along Hunters Point Boulevard.

900 Innes Property

The 900 Innes property would include an improved roadway on the Griffith Street ROW with one sidewalk on the southeastern side, connected to the new Hudson Avenue roadwork proposed for the BUILD development and intersecting Innes Avenue (Figure 2-9b). The Griffith Street/Innes Avenue intersection would remain in its current location; however, Griffith Street between Innes Avenue and Hudson Avenue would be reoriented southeastward to connect to New Hudson Avenue north of the 900 and 700 Innes bicycle path. Hudson Avenue between the northern border of the 700 Innes property and Hunters Point Boulevard would be vacated and converted to parkland. Limited vehicular access and parking and a dedicated bicycle track would be created. Emergency vehicle access to the site would be provided through India Basin Shoreline Park via the Class 1 bikeway, the Bay Trail/shared use path, and the limited-access turnaround (Figure 2-10a). Figure 2-11a shows proposed transit routes and pedestrian crossings to access the 900 Innes property.

BUILD Development

India Basin Open Space Property

No vehicular access to the India Basin Open Space property would be available. However, access to publicly accessible portions of this property for emergency and maintenance vehicles would be provided through the 700 Innes property (Figure 2-9b).

700 Innes Property

Both the proposed project and the variant would change the location, dimensions and design of existing public ROWs within the project site. Due to these design changes, land dedicated to existing ROWs within the project site would be reduced from approximately 5.94 acres to 4.84 acres. BUILD has been coordinating with the Planning Department, the San Francisco Municipal Transportation Agency (SFMTA), RPD, SFPW, PG&E, and FivePoint (formerly Lennar Urban) to create the *India Basin Transportation Action Plan* (IBTAP). The plan involves reconfiguring and improving the streets and streetscapes on-site and in the immediate vicinity of the project site, along Innes Avenue, Hunters Point Boulevard, Evans Street, and Jennings Street between Donahue Street and Cargo Way.

Many of the improvements proposed in the IBTAP will be studied as part of other planning efforts undertaken by the Planning Department in cooperation with SFMTA, RPD, SFPW, PG&E, and FivePoint. However, the following improvements identified in the IBTAP are specifically proposed for implementation as part of the proposed project or variant and are analyzed in this EIR:

New Intersection Signals and Pedestrian Crosswalks

- Hunters Point Boulevard and Hudson Avenue/Hawes Street
- Innes Avenue and Hunters Point Boulevard
- Innes Avenue and Griffith Street
- Innes Avenue and Arelious Walker Drive
- Innes Avenue and Earl Street

Left-Turn Pockets

- Innes Avenue and New Griffith Street
- Innes Avenue and Arelious Walker Drive
- Innes Avenue and Earl Street

General Innes Avenue Streetscape Improvements[15]

- Street benches
- Bicycle racks
- Trash receptacles
- Signage
- Repaving

[15] General Innes Avenue streetscape improvements would be constructed along the project's Innes Avenue frontage in a manner consistent with the *San Francisco Better Streets Plan*. A detailed streetscape design will be created in cooperation with SFMTA, the Planning Department, FivePoint, and SFPW.

Figure 2-9b shows proposed vehicular circulation and access for the BUILD development site. Figure 2-11b shows proposed transit routes and pedestrian crossings to access the 700 Innes property. The roadway network would adhere to the standards outlined in the *San Francisco Better Streets Plan*.

Primary access to the project site would continue to be from Innes Avenue and Hunters Point Boulevard. Several changes to the street network would be completed concurrent with the construction of the proposed project or variant and the adjacent Hunters Point Shipyard development. The intersections at Hudson Avenue/Hunters Point Boulevard/Hawes Street, Hunters Point Boulevard/Innes Avenue, Innes Avenue/Griffith Street, Innes Avenue/Arelious Walker Drive, and Innes Avenue/Earl Street would be signalized as part of the proposed project or the variant. Innes Avenue would be repaved, some on-street parking would be removed, and eastbound left-turn lanes would be added at the intersections with New Griffith Street, Arelious Walker Drive, and Earl Street to improve the movement of traffic entering the 700 Innes site. These improvements would all be part of either the proposed project or the variant. Construction of the proposed traffic improvements would be subject to final review and approval of the City's traffic engineer, SFMTA, SFPW, SFFD and other relevant City agencies, as applicable.

The proposed project or variant would add physical elements to bus stops along Hunters Point Boulevard and Innes Avenue adjacent to the project site. The new elements may include amenities such as shelters and signs. SFMTA would determine the final locations of transit stops at a future date pursuant to its location guidance,[16] taking into account boarding/alighting demand and areas with higher levels of activity and denser populations.

New roadways on the project site would provide access to the park and open space areas, and would allow circulation within the residential and commercial/retail areas. Hudson Avenue east and west of Arelious Walker Drive would be vacated and realigned, generally north of the existing ROW. The realigned segment of Hudson Avenue would be named New Hudson Avenue. The vacated Hudson Avenue ROW east and west of Arelious Walker Drive would become part of the 700 Innes property development. The Arelious Walker Drive ROW immediately north of New Hudson Avenue would shift to the northeast, to connect to New Hudson Avenue, while the remainder of the Arelious Walker Drive ROW beyond the intersection of New Hudson Avenue would be vacated for new parkland. Earl Street would be regraded and shifted southeast to meet City standards for vehicular access, descending from Innes Avenue and connecting with New Hudson Avenue. Earl Street would transition to a multiuse bike and pedestrian path from New Hudson Avenue to the Bay. New Hudson Avenue would serve as the neighborhood "spine," providing connections to the edge of the future Northside Park to the east and to the 900 Innes property to the west.

Arelious Walker Drive, New Hudson Avenue, and Earl Street would function as the primary vehicular loop for the 700 Innes property. A secondary loop created by Beach, Fairfax, and Spring lanes would connect to New Hudson Avenue, provide access to the residential development and public access to the India Basin Open Space and the shoreline, and satisfy fire department access requirements.

[16] SFMTA guidelines state that bus stops should be placed 800–1,360 feet apart on grades less than or equal to 10 percent and as close as 500 feet on grades exceeding 10 percent. Rapid and specialized stops are spaced on a case-by-case basis. Other metrics used include boarding/alighting demand, population density, and general intersection activity.

Pedestrian and Bicycle Access and Circulation

RPD Development

India Basin Shoreline Park Property

The India Basin Shoreline Park property would have a network of new pedestrian pathways and a Class 1 bikeway. Tracing the prefill shoreline at India Basin, the Historic Shorewalk area would provide a wide hardscaped promenade for strolling adjacent to the heritage garden. The pedestrian walk space would be lined with benches, porch swings, and areas for picnic tables and gathering. The proposed Sage Slopes area would include a large playground, adult fitness programming, informal walking trails, basketball courts, and skate trails. Figures 2-11a, 2-12a, and 2-13a show the conceptual pedestrian and bicycle circulation and access proposed for the India Basin Shoreline Park property.

900 Innes Property

On the 900 Innes property, a set of porch swings would hang from a trellis structure just off the sidewalk along Innes Avenue. A pair of timber staircases flanking an ADA-accessible path consisting of stone or concrete pavers would bring visitors down to a landing where the potential other Class 1 bikeway and the Bay Trail would converge to connect to the adjacent India Basin Open Space and 700 Innes properties (Figure 2-13a). From there, pedestrian access to the Scow Schooner Boatyard area would extend toward the water. Figures 2-11a and 2-12a show the pedestrian and bicycle circulation and access proposed for the 900 Innes property.

BUILD Development

India Basin Open Space Property

An elevated boardwalk would traverse the length of the India Basin Open Space property, providing pedestrian access to the water in select locations. Bicycles would not be allowed on the elevated boardwalk, as recreational and commuter bicycle traffic would be directed through the 700 Innes property on the new bicycle lanes. Figures 2-11b, 2-12b, and 2-13b show the conceptual pedestrian and bicycle circulation and access proposed for the India Basin Open Space property.

700 Innes Property

Both the proposed project and the variant would include a network of new pedestrian pathways and Class 1 and 3 bicycle lanes to enable a continuous Blue Greenway/Bay Trail and multiple points of access between the India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes properties. Continuous access to the future Northside Park immediately to the east, part of the Candlestick Point–Hunters Point Shipyard project, would also be provided. Figures 2-11b, 2-12b, and 2-13b show the proposed pedestrian and bicycle circulation and access.

Source: GGN, 2017

Figure 2-9a **Proposed Vehicular Circulation and Access (India Basin Shoreline Park and 900 Innes Properties)**

Source: SOM, 2017

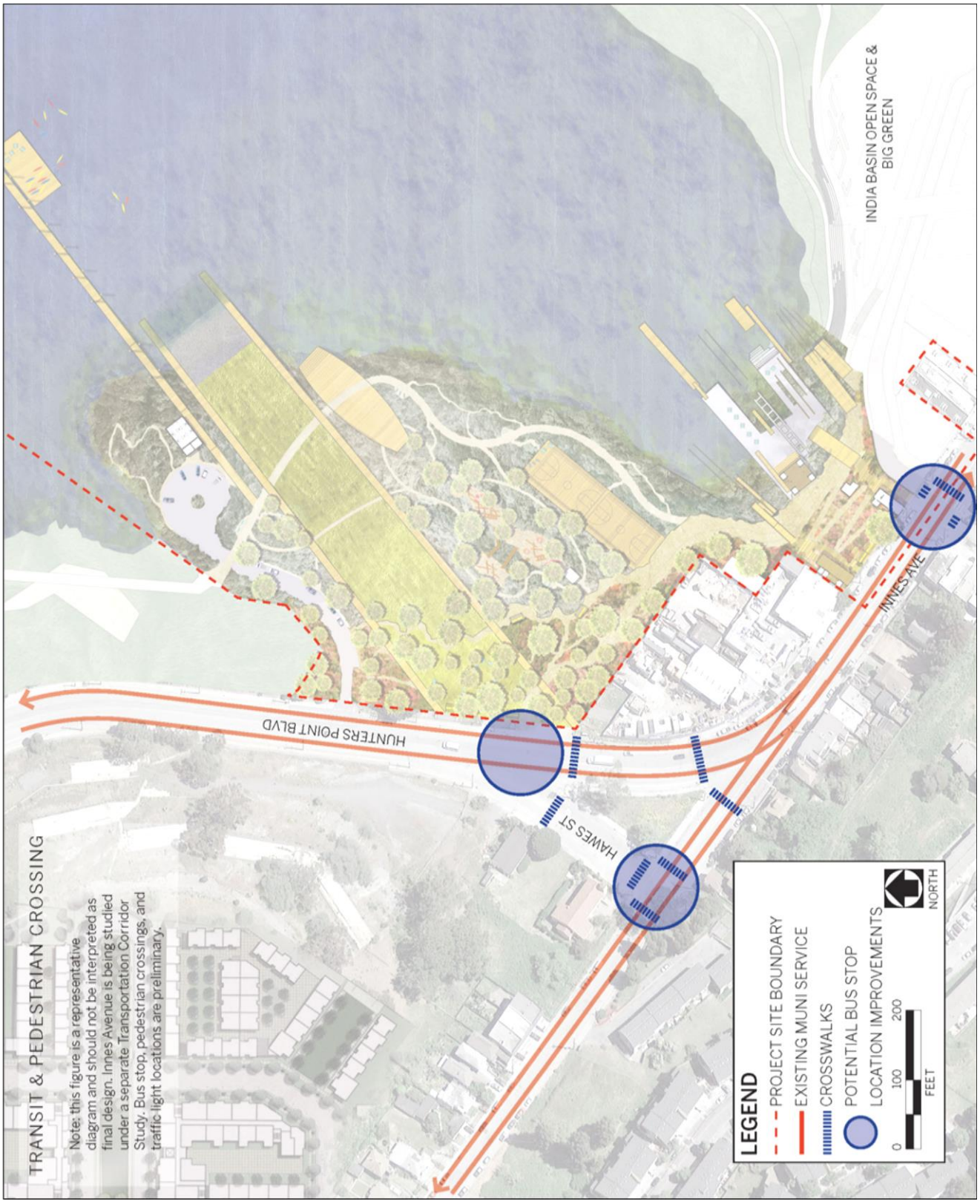
Figure 2-9b **Proposed Vehicular Circulation and Access (India Basin Open Space and 700 Innes Properties)**

Source: GGN, 2017

Figure 2-10a **Proposed Emergency Vehicle Access (India Basin Shoreline Park and 900 Innes Properties)**

Source: SOM, 2017

Figure 2-10b **Proposed Emergency Vehicle Access (India Basin Open Space and 700 Innes Properties)**



Source: GGN, 2017

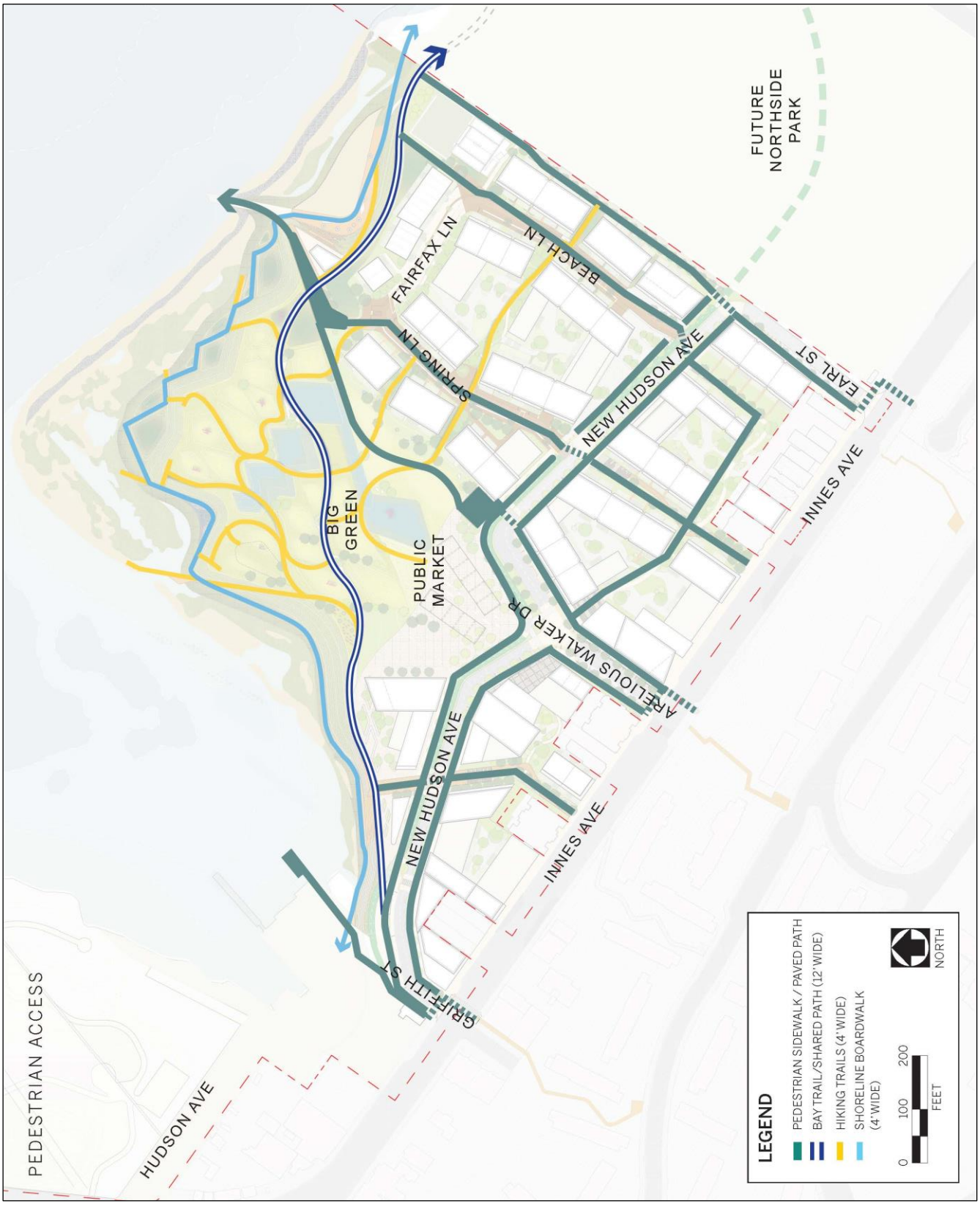
Figure 2-11a **Proposed Transit and Pedestrian Crossings (India Basin Shoreline Park and 900 Innes Properties)**

Source: SOM, 2017

Figure 2-11b **Proposed Transit and Pedestrian Crossings (India Basin Open Space and 700 Innes Properties)**

Source: GGN, 2017

Figure 2-12a **Proposed Pedestrian Paths and Access (India Basin Shoreline Park and 900 Innes Properties)**



Source: SOM, 2017

Figure 2-12b **Proposed Pedestrian Paths and Access (India Basin Open Space and 700 Innes Properties)**

Source: GGN, 2017

Figure 2-13a **Proposed Bicycle Circulation and Access (India Basin Shoreline Park and 900 Innes Properties)**

Source: SOM, 2017

Figure 2-13b **Proposed Bicycle Circulation and Access (India Basin Open Space and 700 Innes Properties)**

2.3.7 Parking and Loading

RPD Development

India Basin Shoreline Park Property

A minimum of 25 off-street parking spaces would be provided on the India Basin Shoreline Park property. These spaces would be accessible from Hunters Point Boulevard. A restricted-access vehicular turnaround would provide disabled parking and loading-zone access adjacent to the Marineway lawn for kayak loading and access by the disabled. One on-street loading zone would be located on the east side of Hunters Point Boulevard, immediately north of the Hunters Point Boulevard/Hawes Street/Hudson Avenue intersection.

900 Innes Property

No off-street parking would be provided on the 900 Innes property, but public parking for users of this property would be available in the parking garages for the 700 Innes property and at India Basin Shoreline Park. One on-street loading zone would be located adjacent to the 900 Innes property, on the north side of Innes Street, west of the intersection with New Griffith Street, and adjacent to the Overlook Building.

BUILD Development

India Basin Open Space Property

No off-street parking would be provided on the India Basin Open Space property, but public parking for users of this property would be available in the parking garages for the 700 Innes property.

700 Innes Property

Proposed Project

The proposed project would provide approximately 679,900 gsf of off-street vehicle parking, primarily in three large, shared, underground garages (Figure 2-10b). These garages, accessible via five entrances, would provide up to 1,800 vehicle spaces for residents, guests, and nonresidential uses.

In addition, the proposed project would provide a minimum of 1,240 Class 1 and Class 2 bicycle parking spaces on the 700 Innes property, in accordance with Planning Code requirements. Class 1 spaces would be distributed throughout the residential building developments on the ground-floor and/or garage levels and in park areas. Class 2 bicycle parking spaces would be provided on sidewalks throughout the 700 Innes property's open space areas for recreational users, visitors, and guests, in accordance with the India Basin SUD.[17] These improvements would be included as part of the transportation demand management (TDM) measures that would be incorporated as part of either the proposed project or the variant.

[17] Class 1 spaces would protect the entire bicycle and would be placed in secure, weather-protected facilities, intended for use as long-term, overnight, and workday bicycle storage by dwelling unit residents, nonresidential occupants, and employees. Class 2 spaces would be located in a publicly accessible, highly visible location, intended for transient or short-term use by visitors, guests, and building patrons (i.e., standard bicycle racks that allow users to tether bicycles).

The 700 Innes property would include 14 off-street loading spaces. Four on-street loading zones would be available at street level: one zone on Earl Street, two on Fairfax Lane, and one on Arelious Walker Drive. The on-street loading zones would be used for passenger pickup and drop-off or temporary commercial loading (i.e., mail package delivery). The loading zones would be located close to building entrances to help keep loading times short.

Proposed Variant

The variant would provide approximately 717,365 gsf of off-street vehicle parking, primarily in the underground podium levels of the buildings on the 700 Innes property (Figure 2-9b). The garages, accessible via five entrances, would provide up to 1,932 vehicle spaces for residents, guests, and nonresidential uses, and 23 off-street loading spaces, or a lesser amount if the City reviews and approves an Active-Loading Management Plan that permits a reduction in spaces through active management strategies, as described in greater detail in Section 2.3.9.

The variant would provide a minimum of 500 Class 1 and Class 2 bicycle parking spaces on the 700 Innes property, in accordance with Planning Code requirements.

2.3.8 Transportation Demand Management

RPD and BUILD Developments

India Basin Open Space and 700 Innes Properties

Both the proposed project and the variant would include a TDM plan that would provide a comprehensive strategy for managing transportation demands created by the BUILD development. The TDM plan would incorporate transportation planning principles to address the project's transportation needs consistent with the local plans and policies described in Section 3.5, "Transportation and Circulation"; encourage the use of transit and other alternatives to the personal automobile; and discourage the use of single-occupancy automobiles or automobiles in general.

The TDM plan would include measures to reduce the use of single-occupancy vehicles and encourage use of transit and non-motorized travel modes. The TDM plan could include measures such as those listed below.

Administration of the TDM plan and funding of the plan's measures would be the responsibility of the BUILD development property manager, who would be required to comply with all reporting and monitoring requirements. The first TDM measure listed below applies to both the BUILD and RPD developments. All other TDM measures below apply to the 700 Innes development only.

Active Transportation Measures

- *Improved Walking Conditions:* Complete streetscape improvements to encourage walking, including sidewalk furniture, curb ramps, or additional sidewalk space. All facilities would comply with the standards for the pedestrian environment described in the *San Francisco Better Streets Plan*.
- *Bicycle Parking:* Provide secure bicycle parking via bicycle lockers or racks located on the project site in an indoor space. The proposed project would provide 1,343 Class 1 bicycle parking spaces (such as bike lockers

or secure bike rooms) and 163 Class 2 bicycle parking spaces (traditional, publicly accessible bicycle racks). The variant would provide 745 Class 1 bicycle parking spaces and 164 Class 2 bicycle parking spaces.

- *Showers and Lockers:* Provide on-site showers and lockers so commuters can travel using active modes. At least one shower facility and one locker location per commercial building would be provided.
- *Bike Share Membership:* Provide bike share memberships for residents and employees.
- *Bicycle Repair Station:* Provide on-site tools and space for bicycle repair.
- *Bicycle Maintenance:* Offer maintenance services through an on-call mechanic or vouchers to a local shop.
- *Fleet of Bicycles:* Provide an on-site fleet of bicycles for use by residents, employees, and/or guests.
- *Temporary Bicycle Valet Parking:* Provide monitored bicycle parking for 20 percent of event guests.

Carshare Measures

- *Carshare Parking:* Offer carshare parking and/or memberships. Carshare parking spaces would be reserved for carshare vehicles in each off-street garage at a number that meets Planning Code requirements, in locations of high convenience for residents. Signage would be installed to direct individuals to carshare access locations.

Delivery Measures

- *Delivery-Supportive Amenities:* Facilitate deliveries with a staffed reception desk, lockers, or other accommodations.
- *Delivery Services:* Provide for delivery of products (e.g., groceries) or services (e.g., dry cleaning).

Family Measures

- *Family TDM Amenities:* Provide car seat storage near carshare parking, cargo bikes, and shopping carts.
- *On-Site Childcare:* Provide on-site childcare services. At least one on-site childcare facility would be provided as part of the proposed project or variant.

High-Occupancy Vehicle Measures

- *Shuttle Bus Service:* Provide shuttle bus services or encourage them for large commercial tenants.

Information and Communication Measures

- *Multimodal Wayfinding Signage:* Provide directional signage for locating transportation services (shuttle stop) and amenities (bicycle parking).
- *Real-Time Transportation Information Displays:* Install a large screen or monitor that displays, at a minimum, transit arrival and departure information.
- *Tailored Transportation:* Provide residents and employees with information about travel options.

Land Use Measures

- *Healthy Food Retail in Underserved Area:* Include a supermarket and restaurant and café space, all of which are available to residents of neighboring communities. There are currently no supermarkets or grocery stores in the vicinity of the project site; the nearest full-service grocery store is located on Third Street, approximately 1.5 miles to the west.[18]
- *On-Site Affordable Housing:* Designate 12 percent of the project's dwelling units as affordable.

Parking Management Measures

- *Unbundled Parking:* Separate the cost of parking from the cost of rent, a lease, or ownership.
- *Parking Cash-Out:* Give employees the option to take the cash value of a paid parking space in lieu of the space itself. This would encourage individuals to opt out of receiving a parking space, and reward the use of commute modes other than driving alone.

2.3.9 Vehicle Loading

RPD Development

Two loading zones would be included for access to the RPD property. One would be located on the east side of Hunters Point Boulevard, to the north of the Hunters Point Boulevard/Hawes Street/Hudson Avenue intersection, and the other loading zone would be located on the north side of Innes Avenue, to the west of the Innes Avenue/Griffith Street intersection.

BUILD Development

The proposed project and the variant would provide a total of 21 and 30 loading zones, respectively. Within these loading zones, the proposed project would include 14 off-street loading spaces and the variant would include 23 off-street loading spaces, both distributed across the four proposed off-street parking garages.

700 Innes Property

Active-Loading Management Plan

Both the proposed project and the variant for the 700 Innes property would involve developing an active-loading management plan for approval by the Planning Department to address loading activities during operation of the proposed project or the variant for City review and approval. The plan would avoid loading conflicts and may incorporate the following ongoing actions to address potential ongoing loading issues:

- Direct residents and commercial tenants to schedule all move-in and move-out activities and deliveries of large items (e.g., furniture) with management of their respective buildings.

[18] The U.S. Department of Agriculture defines food deserts and the areas that will be helped by initiatives to reduce food deserts. To qualify as a "low-access community," at least 500 people and/or at least 33 percent of the census tract's population must reside more than 1 mile from a supermarket or large grocery store (for rural census tracts, the distance is more than 10 miles) (American Nutrition Association, 2017).

- Direct commercial and retail tenants to schedule deliveries during certain times of the day and to restrict the number of loading vehicles permitted during certain hours, to the extent feasible.
- Reduce illegal stops (i.e., in red zones) by delivery vehicles by directing the lobby attendants of each building and retail tenants to notify any delivery personnel who have stopped illegally that their vehicles should be parked in the on-street commercial loading spaces.

The Active-Loading Management Plan would be included as part of the project's DSG document. The plan and all revisions would be reviewed and approved by the Planning Department's Environmental Review Officer or designee. The plan must be approved before receipt of the certificate of occupancy for the first parking/loading garage. The plan would also be evaluated after the proposed project or variant reaches a predetermined level of occupancy agreed to by the Planning Department to assess how the project is performing in terms of loading.

The Active-Loading Management Plan also would be evaluated by a qualified transportation professional retained by the project sponsors, then approved by the Planning Department, after the combined occupancy of the commercial and residential uses reaches 50 percent occupancy. The plan would be evaluated and approved again once a year going forward until the Planning Department determines that the evaluation either is no longer necessary or could be done less frequently. The specific contents of the evaluation report would be determined by Planning Department staff, in consultation with SFMTA. Generally, the report would assess on-site and on-street loading conditions, including actual loading demand and loading operation observations, and evaluate how the project performs.

If the City observes ongoing conflicts occurring in the project area, the Active-Loading Management Plan evaluation report would put forth additional requirements to address ongoing conflicts associated with loading operations. The evaluation report would be reviewed by Planning Department staff, who would make the final determination of whether ongoing conflicts are occurring. If ongoing conflicts are occurring, the above plan requirements (e.g., hour and day restrictions, number of loading vehicle operations permitted during certain hours) may be altered.

2.3.10 Utilities

Stormwater

RPD Development

India Basin Shoreline Park Property

India Basin Shoreline Park is located within the City's Municipal Separate Storm Sewer System (MS4), with sanitary sewer flows and stormwater flows managed through separate infrastructure. A small tributary area drains to one storm drain inlet within the turnaround that discharges to the Bay via a stormwater outfall. The reminder of the site drains to the Bay all along the shoreline via surface sheet flow. All portions of the site overland release to the Bay. A combined sewer overflow pipe runs beneath Hudson Avenue under the India Basin Shoreline Park property, but no area of the site is connected to it.

The proposed storm drainage for the India Basin Shoreline Park property would maintain the separate storm sewer system. Stormwater would be managed in accordance with the SFPUC storm drainage code and would comply with the City's stormwater management ordinance and the SWRCB's 'trash amendments'. Swales and/or bioretention areas would be used to manage runoff from new impervious surfaces. The conceptual design breaks down topographically into two basins on the India Basin Shoreline Park property, and these constructed areas would be used to manage the runoff in each subbasin. The northern subbasin would use the existing stormwater outfall near the turnaround and the southern subbasin would require a new stormwater outfall.

900 Innes Property

A combined sewer overflow pipe in Hudson Avenue crosses the property and then outfalls within the 900 Innes property. The 900 Innes property, however, is not connected to the pipe. The entire site sheet flows to the shoreline. This property currently has no stormwater inlet/outlet infrastructure.

The proposed storm drainage for the 900 Innes property would be managed as a separate stormwater system in accordance with the SFPUC storm drainage code and would comply with the City's stormwater management ordinance and the SWRCB's 'trash amendments'. Swales and/or bioretention areas would be used to manage runoff from new impervious surfaces. The conceptual design breaks down topographically into a single basin within the 900 Innes property, and this constructed area would manage the property's runoff. This property would use a new stormwater outfall that would be jointly used by the 900 Innes property and the abutting BUILD development.

BUILD Development

India Basin Open Space Property

An existing stormwater drainage outfall extending from the India Basin Open Space property into the Bay would be removed. All stormwater on the property would be conveyed through bioretention ponds, swales, and planters, and would discharge to the Bay through a new stormwater outfall in compliance with the City's stormwater management ordinance and the SWRCB's 'trash amendments'.

700 Innes Property

The proposed project or variant would implement a separated stormwater and sewer system on the 700 Innes property, which would reduce potential impacts on the City's combined sewer system. Both the proposed project and the variant would include a stormwater management system on the 700 Innes property that would meet the City's stormwater management ordinance and the SWRCB's 'trash amendments'. The project site would be designed with Low Impact Development concepts and stormwater management systems to comply with the Stormwater Management Requirements and Design Guidelines. The goal of implementing the stormwater management system on this property would be to retain and reuse some of the stormwater captured on-site. Any storm water not reused on site would be treated and discharged via an outfall to the Bay, adhering to SFPUC and San Francisco Bay RWQCB requirements.

The stormwater management system on the 700 Innes property would include the following components:

- **Streetscape runnels**[19] to convey stormwater in hardscape areas to various bioretention areas, and to feed the reservoirs in the open space. There would be a minimum of 0.28 acre of stormwater treatment in streetscape features.
- **Vegetated swales** to treat and convey stormwater in softscape areas. The swales would accommodate seasonal and large-storm-event water flows and would be capable of withstanding inundation. The swales would occupy a minimum of 0.6 acre.
- **Local treatment,** including the use of rain gardens and flow-through planters in the public realm, and biotreatment ponds and swales in the open space areas.
- **Retention ponds** to store runoff for reuse. A minimum of 0.14 acre would be designated for wastewater treatment ponds (secondary treatment phase).
- **Circulation system** to aerate and move water between facilities.
- **Reuse** of treated stormwater on-site, and on-site recycling of grey water[20] and black water[21] for on-site irrigation, toilet flushing, and other purposes, including potential export for off-site irrigation.
- **Spring cutoff drain** to recapture water flow from a spring below the project site, to contribute to nonpotable water, and for use in water features and/or stormwater infrastructure (requires approval from SFPUC and the City).
- **New stormwater outfall** that would serve the BUILD, Inc property ad 900 Innes.

Wastewater and Wastewater Recycling

RPD Development

The specific components of the stormwater management system for the India Basin Shoreline Park and 900 Innes properties are being developed.

BUILD Development

Two potential scenarios are being considered for wastewater management at the 700 Innes property:

- *Wastewater Scenario 1:* Connect to the municipal combined sewer system and discharge all sewer flows generated on the property to the municipal system.[22]
- *Wastewater Scenario 2:* Construct a wastewater treatment facility on-site to treat a portion of the wastewater for reuse on-site as recycled water.

[19] Runnels are shallow concrete- or stone-lined conveyance systems designed to carry moderate flows of stormwater runoff.
[20] Grey water is wastewater from bathtubs, showers, bathroom sinks, clothes washing machines, and laundry tubs.
[21] Black water is wastewater from toilets, urinals, dishwashers, kitchen sinks, and utility sinks.
[22] The City requires developments with 250,000 sq. ft. of gross floor area to treat water on-site and reuse it for nonpotable applications. If Wastewater Scenario 1 is chosen, a building-by-building system would be installed to use all available graywater, rainwater and foundation drainage to meet the toilet flushing and irrigation nonpotable-water demands.

2.3.11 Phasing and Construction

For the purposes of this EIR and to be conservative and anticipate the maximum impacts possible during buildout, it is assumed that the RPD development would be completed in two phases over 2 years and the BUILD development would be completed in two large phases over 5 years. While the project is seeking a development agreement permitting implementation and phasing of the project over a period of approximately 25 years, the analysis of project impacts in this EIR, including construction impacts, adopted a conservative approach regarding the time of buildout. To model the most conservative possible impacts, the analysis conservatively assumes a buildout of 5 years for the BUILD development with construction activities and impacts all occurring in a concentrated manner, thus resulting in greater impacts.

RPD Development

Development at the 900 Innes and India Basin Shoreline Park properties would occur in two major phases, one for each property, commencing with the 900 Innes property. The first major construction phase (Figure 2-14a) would involve:

- site remediation of the 900 Innes site consistent with the RWQCB-approved RAP and site remediation of the portion of India Basin Shoreline Park included in the first phase, consistent with the Maher Ordinance;
- demolition of structures and piers;
- removal of approximately 32 creosote-treated piles;
- grading of the entire 900 Innes site and a portion of the India Basin Shoreline Park site; and
- construction of the Class 1 bikeway, buildings, utilities, two replacement piers/docks, and on-land recreation/open space outdoor area at the 900 Innes property, as well as the Class 1 bikeway and pedestrian route as it continues through India Basin Shoreline Park.

The second major construction phase (Figure 2-15a) would involve:

- site remediation of the India Basin Shoreline Park site in accordance with the Maher Ordinance;
- demolition of structures on India Basin Shoreline Park;
- grading of the India Basin Shoreline Park site; and
- construction of the remainder of the recreational bike and pedestrian paths, children's playground and adult fitness programming, basketball courts, buildings,[23] utilities, new pier and dock, and on-land recreation/open space outdoor area at the India Basin Shoreline Park property.

Construction could begin as early as spring 2018 and is conservatively anticipated to last 2 years; however, given the phases, construction would most likely not be continuous. The timing of construction would be dependent on approval and funding considerations.[24]

[23] The Shipwright's Cottage would be retained and rehabilitated to SOI Standards. The Boatyard Office building may be retained or may be demolished. The project may demolish or may interpret the third remaining significant building (the Tool Shed and Water Tank building) by keeping or replacing in-kind portions of the foundation and structural elements, where feasible, to reflect the building's massing, to construct in-kind a roof that matches the existing roof form, and to reuse or replace in-kind some cladding materials.

The total soil off-haul from the site over the entire construction period is anticipated to be up to approximately 26,795 CY; import of an additional 15,359 CY of fill is also expected. The maximum depth of ground-disturbing work—necessary for pile driving to construct the foundation for the Marineway—would be 110 feet below ground surface (bgs). Pile driving to this depth would be necessary for in-water work and for work occurring at a maximum of 15 feet above sea level. Before the start of any remediation, demolition, grading, or construction activities, the construction area would be clearly defined by construction fencing and staking. Construction staging would occur within the project site.

Specific construction activities are expected to occur between 7 a.m. and 8 p.m., Monday through Friday, in compliance with the San Francisco Noise Ordinance. Construction may also involve occasional work on Saturdays, for which required permits would be obtained and public notices would be distributed as necessary. The anticipated most intensive construction phasing for the project is shown in Figures 2-14a and 2-15a.

BUILD Development

Development of the 6.2-acre, City-owned India Basin Open Space property would be conducted in conjunction with the phasing and construction of the 700 Innes property and the 5.94 acres of City ROW parcels intersecting and adjacent to the 700 Innes property, because the redesign of the India Basin Open Space property would be integrated with the proposed new publicly accessible open space in the BUILD development. Development of the India Basin Open Space, 700 Innes and ROW properties would likely be conducted in multiple phases over a period of 5–15 years based on market demand and financing. As a conservative assumption, the BUILD development would be completed in two large phases over 5 years. In this conservative scenario, the first major construction phase (see Figure 2-14b for Phase 1 of the proposed project and Figure 2-14c for Phase 1 of the variant) would involve:

- site remediation consistent with the Maher Ordinance;
- rough grading of the entire site[25];
- removal of the existing pier and eight associated creosote-treated piles offshore of the 700 Innes property;
- removal of the existing drainage outfall extending into the Bay from the India Basin Open Space property; and
- construction of the streets, utilities, open space, underground garage, and buildings located between New Hudson Avenue and Innes Avenue and between Earl Street and New Griffith Street and the park area north of Arelious Walker Drive.

The space east of Hudson Avenue and south of Arelious Walker Drive would be used for temporary access, construction staging, soil management, and temporary facilities during Phase 1.

The second major construction phase (see Figure 2-15b for Phase 2 of the proposed project and Figure 2-15c for Phase 2 of the variant) would involve construction of the permanent streets, utilities, parks, open space, and structures east of Hudson Avenue and south of Arelious Walker Drive. Overall construction could begin as early

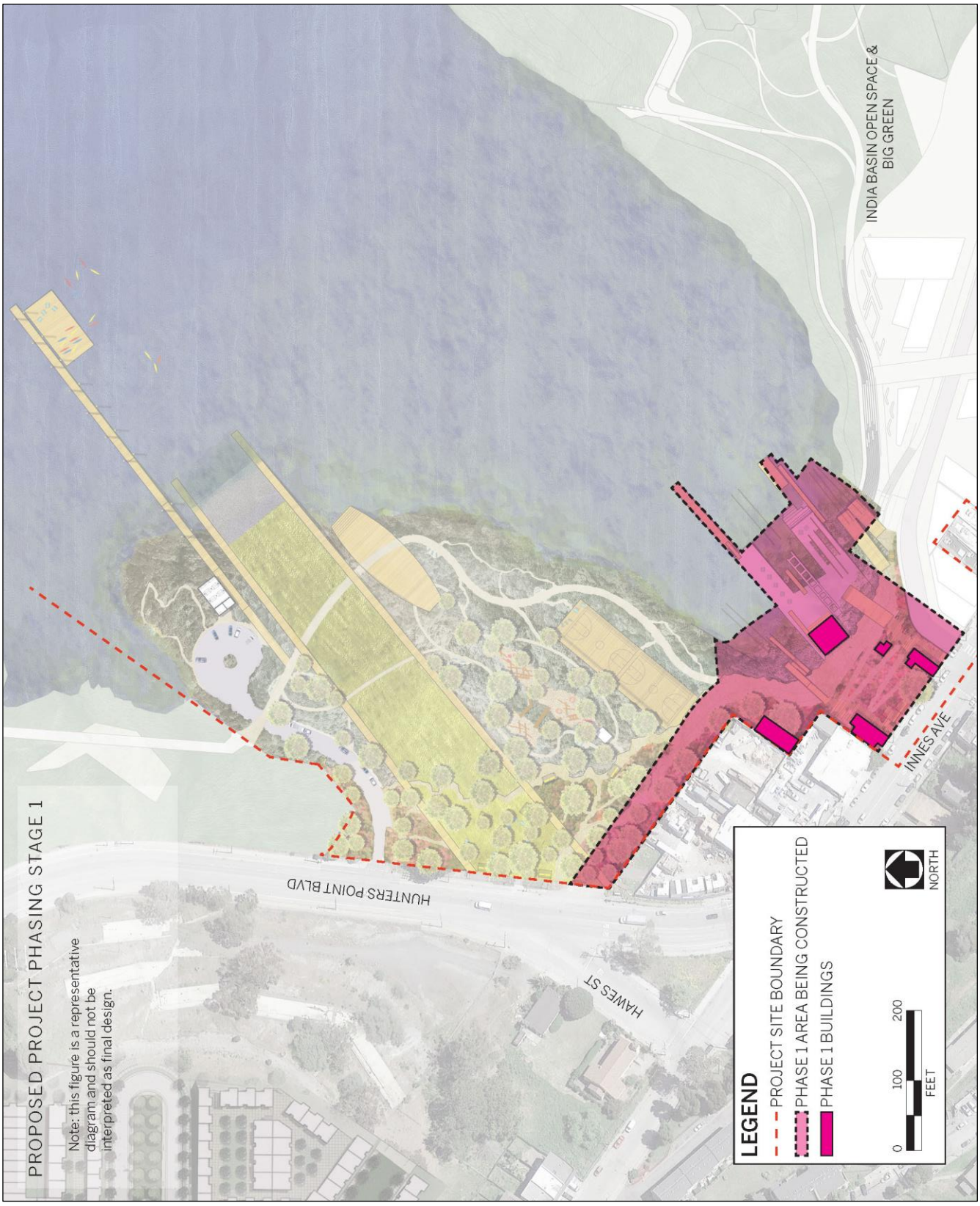
[24] See the prior footnote in this section regarding phasing and construction.
[25] See the prior footnote in this section regarding phasing and construction.

as spring 2018 and is anticipated to take 5 years; however, the timing would be dependent on approval and funding considerations.[26]

Within the two major phases, there would be up to seven phases of construction. The maximum possible cut and off-haul from the site over Phases 1–7 is anticipated to be up to 340,000 CY; import of an additional 187,000 CY of fill is also expected. The maximum depth of ground excavation on land would not exceed 17 feet bgs, but the maximum depth of on-land ground-disturbing activity (pile driving) would be 80 feet bgs. Before the start of any demolition, grading, or construction activities, the construction area would be clearly defined by construction fencing and staking. Construction staging would occur on the 700 Innes property.

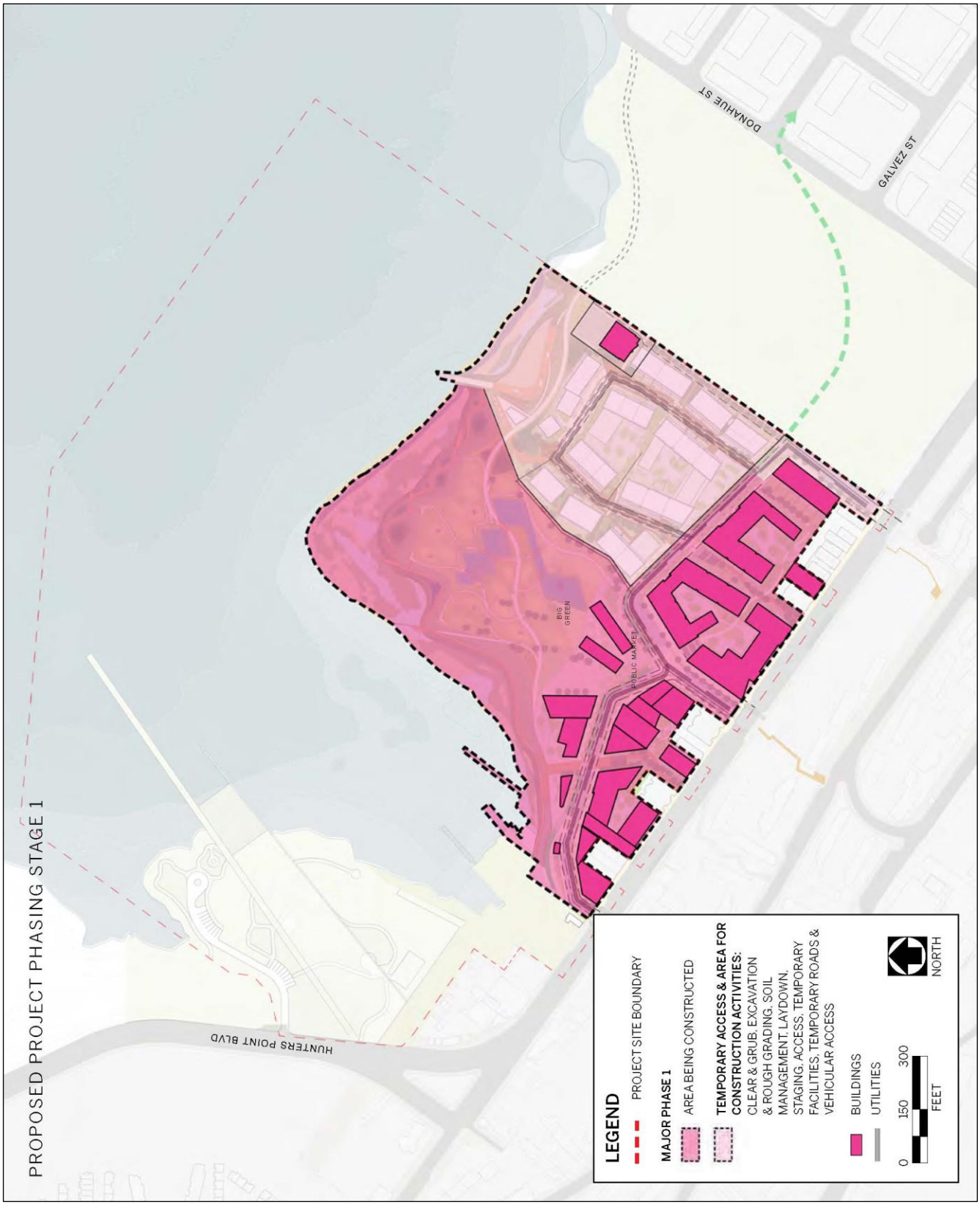
Specific construction activities are expected to occur primarily between 7 a.m. and 8 p.m., Monday through Friday, in accordance with the San Francisco Noise Ordinance. Construction may also involve occasional work on Saturdays, for which required permits would be obtained and public notices would be distributed as necessary. The anticipated most intensive construction phasing for the proposed project and the variant is shown in Figures 2-14a through 2-14c.

[26] See the prior footnote in this section regarding phasing and construction.



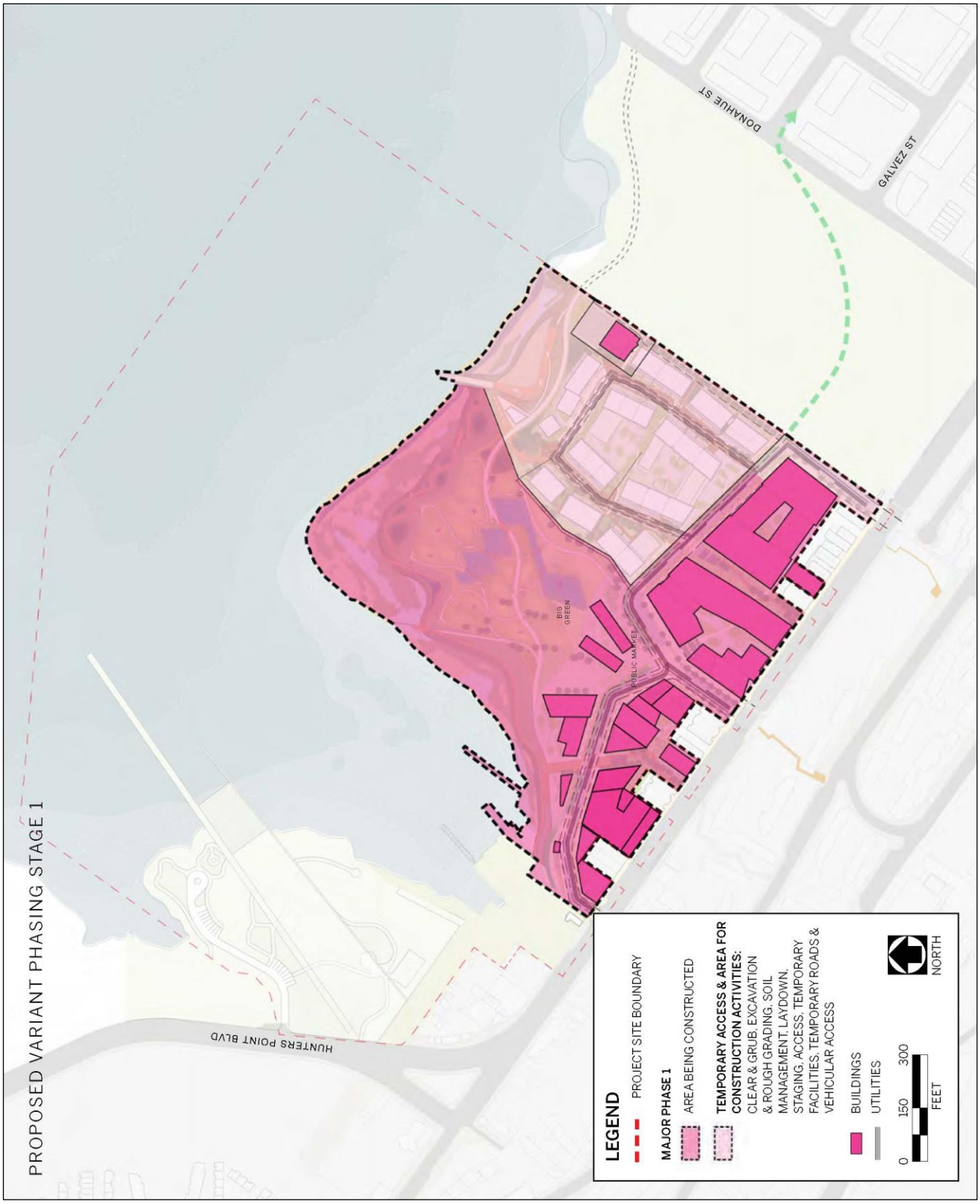
Source: GGN, 2017

Figure 2-14a **Proposed Project Major Construction Phase 1 (India Basin Shoreline Park and 900 Innes Properties)**



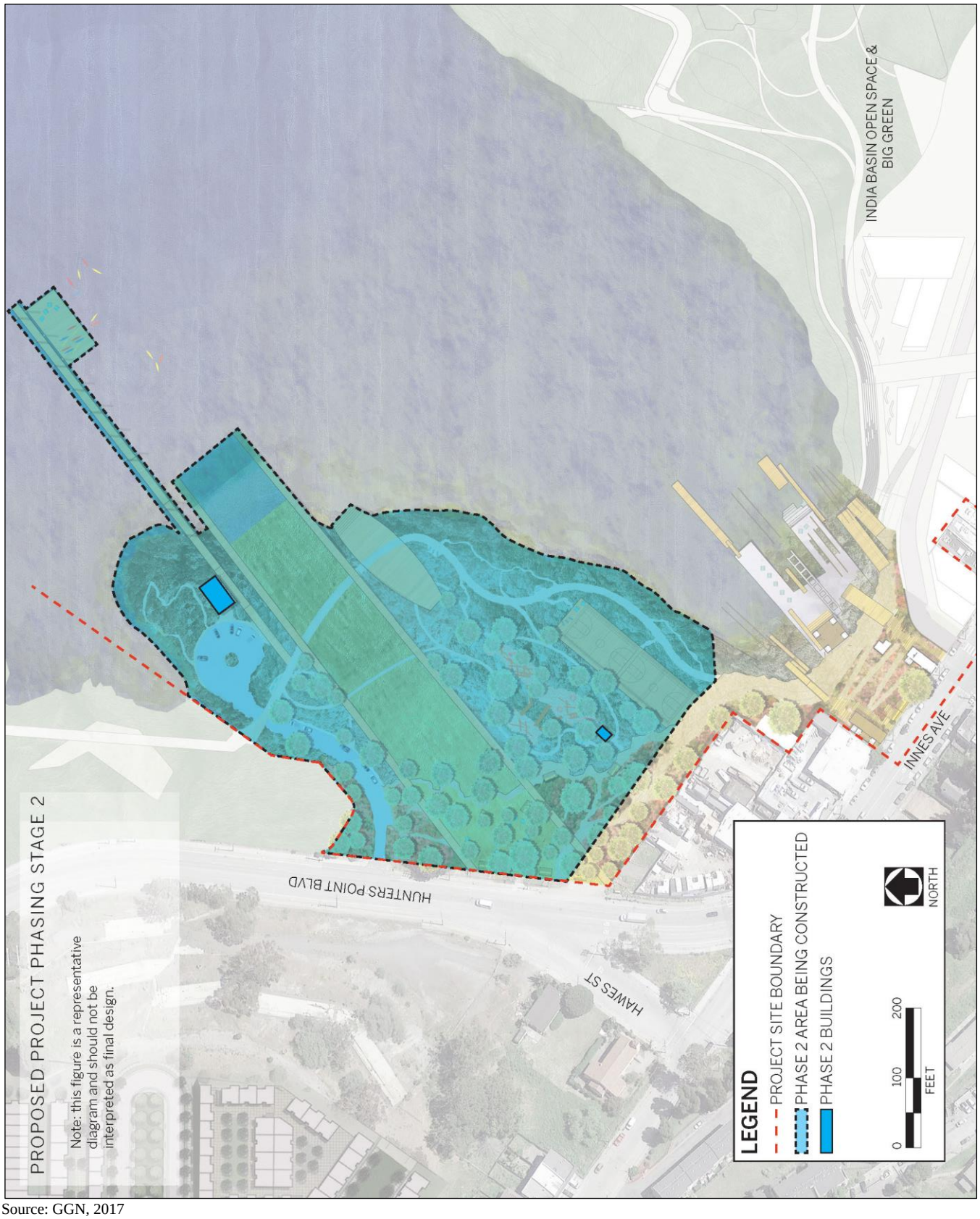
Source: SOM, 2017

Figure 2-14b **Proposed Project Major Construction Phase 1 (India Basin Open Space and 700 Innes Properties)**



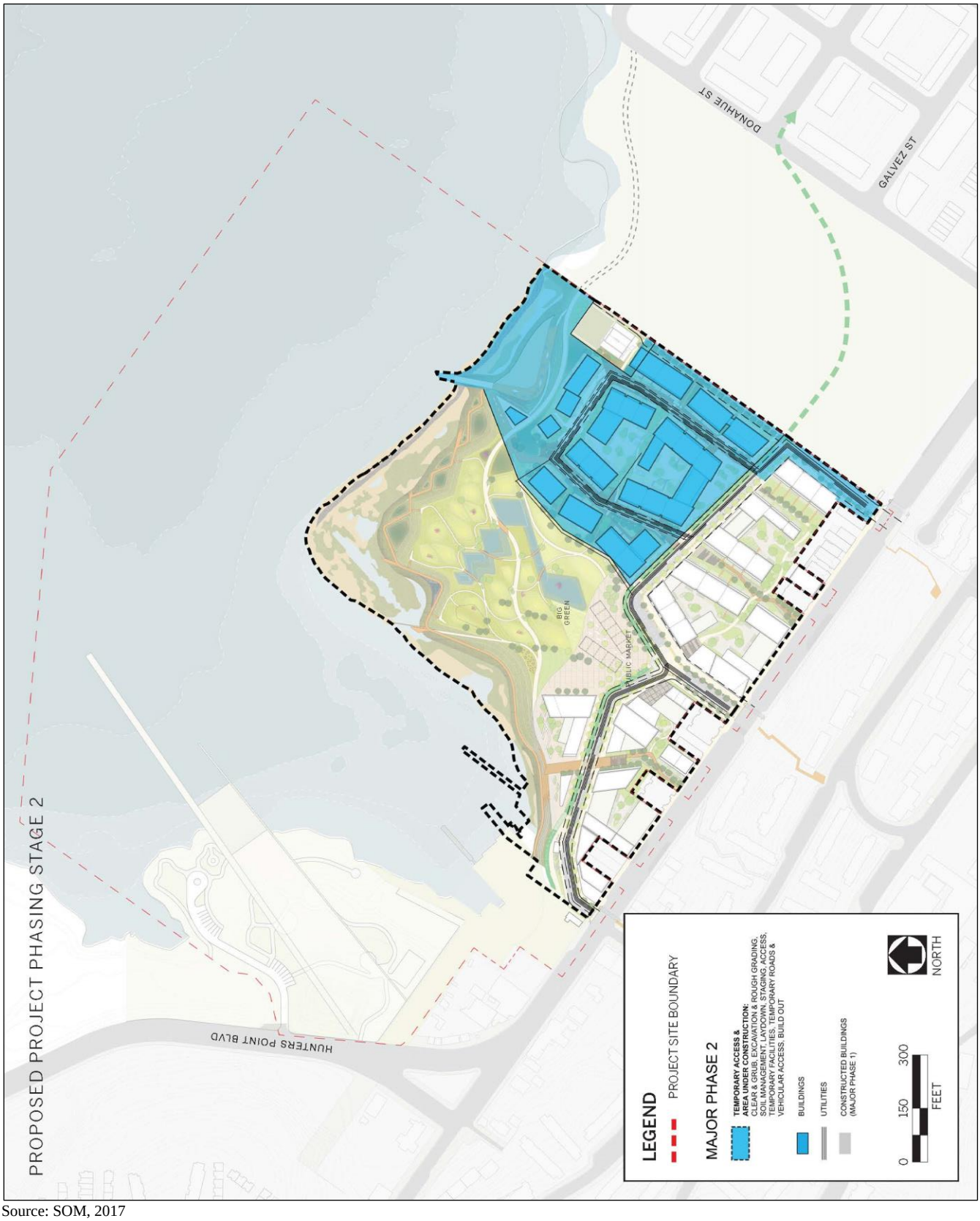
Source: SOM, 2017

Figure 2-14c **Variant Major Construction Phase 1 (India Basin Open Space and 700 Innes Properties)**



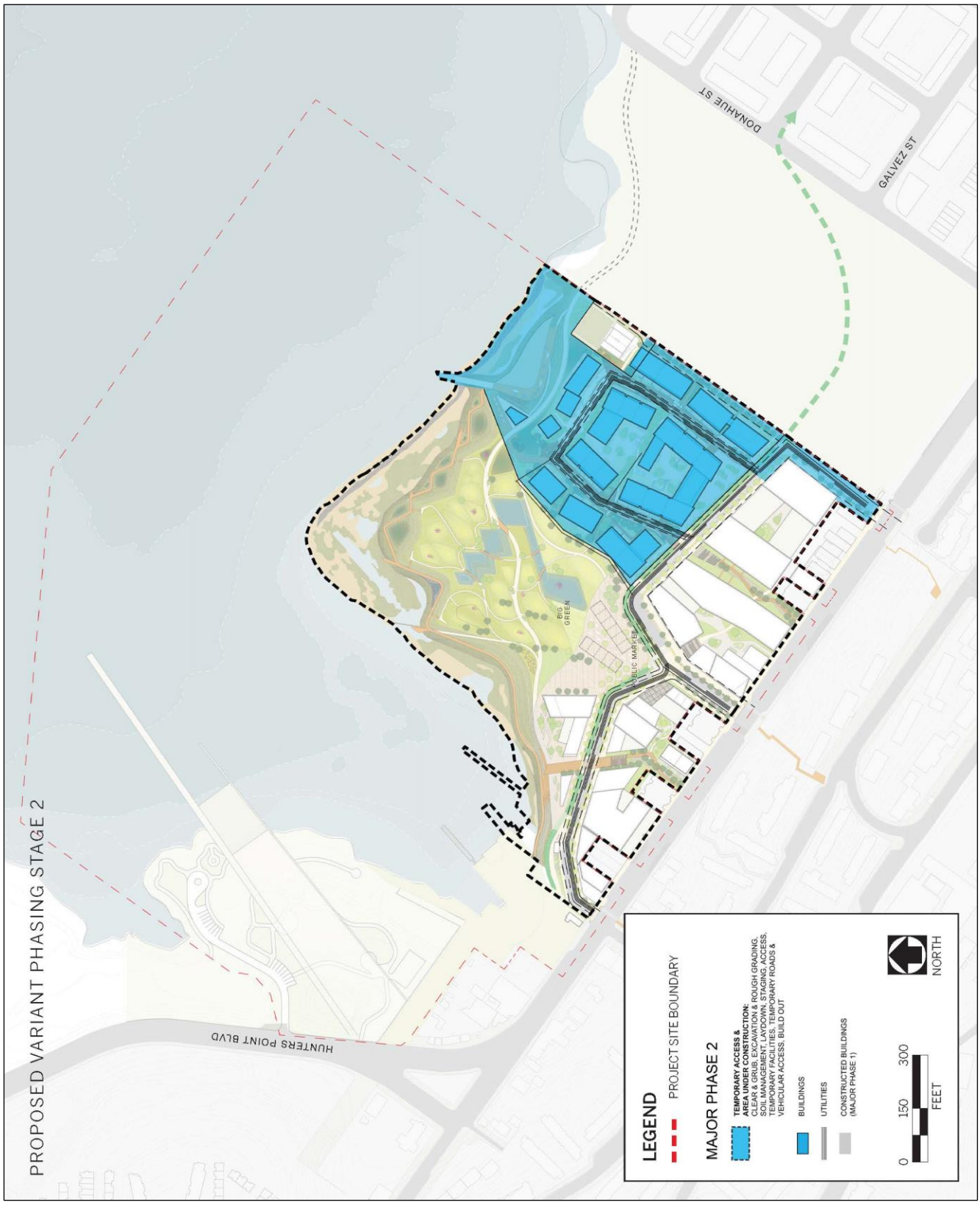
Source: GGN, 2017

Figure 2-15a **Proposed Project Major Construction Phase 2 (India Basin Shoreline Park and 900 Innes Properties)**



Source: SOM, 2017

Figure 2-15b **Proposed Project Major Construction Phase 2 (India Basin Open Space and 700 Innes Properties)**



Source: SOM, 2017

Figure 2-15c **Variant Major Construction Phase 2 (India Basin Open Space and 700 Innes Properties)**

2.4 DISCRETIONARY ACTIONS AND APPROVALS

The proposed project and variant would require approvals from several authorities, including those listed below.

2.4.1 City and County of San Francisco

- **San Francisco Planning Commission**
  - Certify the Final EIR.
  - Recommend to the Board of Supervisors approval of amendments to the General Plan, Planning Code text, and the Zoning Map to create an SUD, including design review procedures.
  - Recommend to the Board of Supervisors approval of a Development Agreement with BUILD.
  - Make General Plan consistency findings, including priority policy findings under Planning Code Section 101.1, for all project approvals requiring consistency findings under Charter Section 4.105 and Administrative Code Section 2A.53.
  - Determine that shadows from buildings exceeding 40 feet in height will have no adverse effect on parks subject to Section 295 of the Planning Code. Such determination would occur after RPD's general manager in consultation with the Recreation and Parks Commission has commented on the proposed project or variant.
  - Determine Proposition M office allocation.
  - General Plan referral to the Board of Supervisors for a Major Encroachment Permit.

- **Historic Preservation Commission**
  - Hold a public hearing on the Draft EIR regarding impacts on historic resources and approve a certificate of appropriateness for alterations proposed to landmark structures.

- **San Francisco Recreation and Park Commission**
  - Approve 900 Innes Avenue and India Basin Shoreline Park improvements and shoreline modifications (the conceptual design).
  - Approve India Basin Open Space improvements and shoreline modifications.
  - Consult with RPD's general manager on the effect of the proposed project or variant on shadow on parks subject to Section 295 of the Planning Code.
  - Accept the transfer of any new properties to RPD jurisdiction or management, including a memorandum of understanding with SF Port governing use and control of the proposed Big Green and other property under SF Port jurisdiction to be managed by RPD.
  - Approve the Trust Exchange Agreement with CSLC that would remove the public trust from portions of the 700 Innes property and transfer other portions to the City, in trust (under Port jurisdiction), to be used for open space.
  - Approve a memorandum of understanding between the Port and RPD for the use and control of all open space at 700 Innes and India Basin Open Space that is currently under Port jurisdiction or transferred to the Port in trust after the trust exchange.

  - Approve easements and/or acquisition of rights for in-water improvements over private in-water parcels.
  - Consent to the Development Agreement.

- **San Francisco Public Works**
  - Recommend to the Board of Supervisors approval of street vacations, dedications, and realignments; sidewalk widenings; and improvements in public ROWs.
  - Approve tentative subdivision maps, including condominium map applications and any major or minor encroachment permits.
  - Consent to the Development Agreement

- **San Francisco Department of Building Inspection**
  - Issue demolition, grading, and site construction permits.

- **San Francisco Municipal Transportation Agency (SFMTA)**
  - Approve new bicycle paths and all roadway changes affecting vehicles, transit, bicycles, and pedestrians.
  - Consent to the Development Agreement.

- **San Francisco Public Utilities Commission (SFPUC)**
  - Approve water, sewer, stormwater, and street light infrastructure.
  - Consent to the Development Agreement.

- **San Francisco Department of Public Health (DPH)**
  - Approve site remediation plans under Health Code Article 22A.

- **San Francisco Port Commission**
  - Approve the Trust Exchange Agreement affecting property under SF Port jurisdiction.
  - Consent to the Development Agreement.
  - Approve a memorandum of understanding with RPD governing use and control of the Big Green and other property under SF Port jurisdiction to be managed by RPD.

- **San Francisco Board of Supervisors**
  - Approve amendments to the General Plan, Planning Code, and Zoning Map.
  - Authorize street vacations, dedications, major street encroachments, realignments, and sidewalk widenings.
  - Approve easements and/or acquisition of rights for in-water improvements over private in-water parcels.
  - Approve a Development Agreement with BUILD.
  - Approve the Trust Exchange Agreement with CSLC.

2.4.2 State and Federal Agencies

- **San Francisco Bay Conservation and Development Commission (BCDC)**
  - Issue a major permit to authorize construction within the 100-foot shoreline band.
  - Approve an amendment to the *San Francisco Bay Plan* and the *San Francisco Waterfront Special Area Plan.*
- **San Francisco Bay RWQCB**
  - Approve CWA Section 401 water quality certification.
  - Approve RPD's site remediation plan for areas within San Francisco Bay RWQCB jurisdiction.
  - Approve amendments to the City's MS4 discharge permit to authorize the release of treated stormwater to the Bay.
- **Bay Area Air Quality Management District**
  - Issue permits for installation and operation of emergency generators.
- **California State Lands Commission (CSLC)**
  - Approve the Trust Exchange Agreement with the City.
- **California State Historic Preservation Office**
  - Provide Section 106 consultation for potential effects of project implementation on cultural resources in the Bay.
- **California Department of Fish and Wildlife**
  - Approve permit under the California Endangered Species Act (if applicable).
- **U.S. Army Corps of Engineers (USACE)**
  - Approve permits under CWA Section 404 and Section 10 of the Rivers and Harbors Act of 1899 for improvements or relocation of wetlands and permanent or temporary placement of fill in the Bay.
- **U.S. Environmental Protection Agency (EPA)**
  - If remediation work is completed using EPA grant funding, then ensure compliance with additional applicable federal laws and regulations governing remediation contracts, such as the Small Business Liability Relief and Brownfields Revitalization Act and the Davis-Bacon Act.
- **U.S. Fish and Wildlife Service/National Marine Fisheries Service**
  - Provide Section 7 consultation for potential effects of shoreline modifications on endangered species (Section 7 consultation is triggered by the Section 404/Section 10 permit).

2.5 REFERENCES

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3.0 ENVIRONMENTAL SETTING AND IMPACTS

3.0.1 INTRODUCTION

This chapter sets forth the physical and regulatory environmental setting and addresses the environmental impacts of the proposed residential project (proposed project) and the maximum commercial variant (variant) with respect to 15 environmental resource areas. The discussions of the environmental setting describe the present physical conditions, or baseline conditions, in the project area. The baseline used for the analysis of environmental impacts under the California Environmental Quality Act (CEQA) reflects the conditions present at the time the Notice of Preparation (NOP) for this environmental impact report (EIR) was published.

The potential impacts of the proposed project and the variant are compared against the existing baseline conditions for each environmental resource.

The proposed project and the variant are analyzed from the viewpoint of the following 16 environmental resource areas:

- Land Use and Land Use Planning
- Aesthetics
- Population and Housing
- Cultural Resources
- Transportation and Circulation
- Noise
- Air Quality
- Greenhouse Gas Emissions
- Wind
- Shadow
- Recreation
- Utilities and Service Systems
- Public Services
- Biological Resources
- Hydrology and Water Quality
- Hazards and Hazardous Materials

3.0.2 SPECIFIC CEQA ANALYSIS APPROACHES

Aesthetics and Parking Analysis (Senate Bill 743 and CEQA Section 21099)

CEQA Section 21099(d) provides that "aesthetics and parking impacts of a residential, mixed-use residential, or employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment."[1] Accordingly, aesthetics and parking are not considered when determining whether a project that meets all of the following three criteria has the potential to result in significant environmental impacts:

- The project is in a transit priority area. [2]
- The project is on an infill site.[3]
- The project is residential, mixed-use residential, or an employment center.[4]

[1] Refer to Section 21099(d)(1) of the CEQA statute.

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

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

The proposed project and variant meet the first and third criteria only; therefore, this EIR does consider aesthetics and the adequacy of parking in determining the significance of project impacts under CEQA.

Automobile Delay and Vehicle Miles Traveled Analysis

CEQA Section 21099(b)(1) requires the Governor's Office of Planning and Research (OPR) to develop revisions to the State CEQA Guidelines that establish criteria for determining the significance of transportation impacts of projects that promote the "reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." CEQA Section 21099(b)(2) states when the revised State CEQA Guidelines for determining transportation impacts have been certified pursuant to CEQA Section 21099(b)(1), automobile delay, as described solely by level of service (LOS) or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA.

In January 2016, OPR published for public review and comment a *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA* (OPR, 2016) (proposed transportation impact guidelines), which recommended measuring the transportation impacts of projects using the metric of vehicle miles traveled (VMT). VMT measures the amount and distance that a project might cause people to drive, accounting for the number of passengers in a vehicle.

OPR's proposed transportation impact guidelines provide substantial evidence that VMT is an appropriate standard to use in analyzing transportation impacts to protect environmental quality and is better than automobile delay at indicating greenhouse gas, air quality, and energy impacts. Acknowledging this, San Francisco Planning Commission Resolution 19579, adopted on March 3, 2016:

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

Planning Commission Resolution 19579 became effective immediately for all projects that have not received a CEQA determination, and for all projects that have previously received CEQA determinations but require additional environmental analysis.

[4] CEQA Section 21099(a)(1) defines an "employment center" as a project that is located on property zoned for commercial uses with a floor area ratio of no less than 0.75 and is located in a transit priority area.

Accordingly, this EIR does not discuss automobile delay impacts. Instead, an analysis of VMT and induced automobile travel impacts is provided in Section 3.5, "Transportation and Circulation." Nonetheless, decision-makers may consider automobile delay, independent of the environmental review process, as part of their decision to approve, modify, or disapprove the proposed project or variant.

3.0.3 FORMAT OF THE ENVIRONMENTAL ANALYSIS

Each resource area analyzed in this chapter includes the subsections summarized below.

Environmental Setting

This subsection describes the existing, baseline physical conditions of the project site and surroundings (e.g., existing land uses, transportation conditions, noise environment) with respect to each resource topic at the time the NOP was issued. Conditions are described in sufficient detail and breadth to allow a general understanding of the environmental impacts of the proposed project and variant.

Regulatory Framework

This subsection describes the relevant federal, State, and local regulatory requirements that are directly applicable to the environmental topic being analyzed.

Impacts and Mitigation Measures

This subsection evaluates the potential for the proposed project or variant to result in direct and indirect adverse impacts on the existing physical environment, with consideration of both short-term and long-term impacts. The analysis covers all phases of the proposed project and variant, including construction and operation. The significance thresholds for environmental impacts are defined at the beginning of this subsection, and the discussion of the approach to the analysis explains how the significance thresholds have been applied to evaluate the impacts of the proposed project or variant.

Indirect impacts are discussed only for those resources for which they have the potential to occur (e.g., population and housing, cultural resources, air quality, and biological resources). Both project-level and cumulative impacts are analyzed. Project-level impacts could result from actions related to implementation of the proposed project or the variant. Cumulative impacts could result from implementation of the proposed project or the variant in combination with other cumulative projects in the study area. As discussed in "Cumulative Impacts," below, the projects listed in Table 3-1, in conjunction with the proposed project or the variant, are considered the cumulative scenario for the analysis of cumulative impacts.

Impacts are analyzed and the respective assessment and findings are included in this Draft EIR, applying the following levels of significance:

- **No Impact.** A conclusion of No Impact is reached if no potential exists for impacts or if the environmental resource does not occur in the project area or the area of potential impacts.
- **Less-than-Significant Impact.** This determination applies if the impact 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. No mitigation is required for impacts determined to be less than significant.

- **Less-than-Significant Impact with Mitigation.** This determination applies if the project would result in a significant impact, exceeding the established significance criteria, but feasible mitigation is available that would reduce the impact to a less-than-significant level.
- **Significant and Unavoidable Impact.** This determination applies if the project would result in an adverse impact that exceeds the established significance criteria, and no feasible mitigation is available to reduce the impact to a less-than-significant level. Therefore, the residual impact would be significant and unavoidable.
- **Significant and Unavoidable Impact with Mitigation.** This determination applies if the project would result in an adverse impact that exceeds the established significance criteria, and although feasible mitigation might lessen the impact, the residual impact would be significant, and therefore, the impact would be unavoidable.

Impacts are defined in terms of their context and intensity. Context is related to the uniqueness of a resource; intensity refers to the severity of the impact. Where applicable, best management practices or project improvement measures, or both, are incorporated into the proposed project or the variant to limit the potential for a significant impact. Where necessary, mitigation measures are identified for significant impacts to limit the degree or lower the magnitude of the impact; rectify the impact by repairing, rehabilitating, or restoring the affected environment; or compensate for the impact by replacing or providing substitute resources or environments. These impacts conclude with a finding of Less-than-Significant Impact with Mitigation. Where no mitigation measures are necessary, relevant impacts are concluded to be Less than Significant or to have No Impact.

As part of the impact analysis, mitigation measures are identified, where feasible, for impacts considered significant or potentially significant consistent with State CEQA Guidelines Section 15126.4, which states that an EIR "shall describe feasible measures which could minimize significant adverse impacts." CEQA requires that mitigation measures have an essential nexus and be roughly proportional to the significant impact identified in the EIR. The project sponsors are required to implement all identified mitigation measures identified in this chapter, and the lead agency (in this case, the City and County of San Francisco) is responsible for overseeing the project sponsors' implementation of such mitigation measures.

Pursuant to State CEQA Guidelines Section 15126.4, mitigation measures are not required for environmental impacts that are not found to be significant. Therefore, for resource topics where this EIR finds the physical environmental impact of the proposed project or variant to be less than significant, but for which the San Francisco Planning Department has identified measures that would further lessen the project's already less-than-significant impacts, these measures have been identified as "improvement measures." The project sponsors have indicated that if the project is approved, they would incorporate all improvement measures identified in this EIR as part of the project.

Impacts are numbered and shown in bold type. The corresponding mitigation measures, where identified, are numbered and indented, and follow 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 abbreviations are used for individual topics:

- LU: Land Use and Land Use Planning
- AE: Aesthetics
- PH: Population and Housing
- CR: Cultural Resources
- TR: Transportation and Circulation
- NO: Noise
- AQ: Air Quality
- GG: Greenhouse Gas Emissions
- WI: Wind
- SH: Shadow
- RE: Recreation
- UT: Utilities and Service Systems
- PS: Public Services
- BI: Biological Resources
- HY: Hydrology and Water Quality
- HZ: Hazards and Hazardous Materials

Cumulative Impacts

The discussion of cumulative impacts in this subsection analyzes the cumulative impacts of the proposed project and the variant, taken together with other past, present, and reasonably foreseeable future projects producing related impacts. The goal of this analysis is to determine whether the overall long-term impacts of all such projects would be cumulatively significant, and to determine whether the project itself would cause a "cumulatively considerable" incremental contribution to any such cumulatively significant impacts. To determine whether the overall long-term impacts of all such projects would be cumulatively significant, the analysis generally considers the following:

- the area in which impacts of the proposed project or variant would be experienced;
- the impacts of the proposed project or variant that are expected in the area;
- other past, proposed, and reasonably foreseeable projects that have had or are expected to have impacts in the same area;
- the impacts or expected impacts of these other projects; and
- the overall impact that can be expected if the individual impacts from each project are allowed to accumulate.

"Cumulative impacts" refers to two or more individual impacts that, when considered together, are considerable, or that compound or increase other environmental impacts (State CEQA Guidelines Section 15355). Cumulative impacts can result from individually minor but collectively significant impacts taking place over time (40 Code of Federal Regulations 1508.7). If the analysis determines that the potential exists for the proposed project or variant, taken together with other past, present, and reasonably foreseeable future projects, to result in a significant or adverse cumulative impact, the analysis then determines whether the project's incremental contribution to any significant cumulative impact is itself significant (i.e., "cumulatively considerable").

The cumulative impact analysis for each individual resource topic is presented in each resource section of this chapter immediately after the description of the direct project impacts and identified mitigation measures.

Table 3-1 lists the relevant cumulative projects considered for the environmental analysis.

Table 3-1: Cumulative Projects

Name	Location	Description
Candlestick Point and Hunters Point Shipyard (Phases I and II)	702 acres along the southeastern waterfront of San Francisco (281 acres at Candlestick Point and 421 acres at Hunters Point Shipyard)	6,225 dwelling units, 125,000 gsf of neighborhood retail, 50,000 gsf of community facilities, 150,000 gsf of office, 10,000-seat performance venue, and 220 hotel rooms.
Blue Greenway/ Bay Trail	Along 13 miles of San Francisco's southeastern waterfront	Series of connected parks, trails, and green open space.
Hunters View	227-229 West Point Road in San Francisco	Demolition of all existing public housing units and other community facilities on the site and development of 800 new residential units, including 350 affordable rental units (267 of which will be replacement public housing units) and up to 450 homeownership units (10–15% of which will be affordable).
Executive Park	71-acre subarea of the *Bayview Hunters Point Area Plan* located in southeastern San Francisco, just east of U.S. Highway 101 and along the San Francisco/San Mateo County boundary	Two new residential development projects (totaling 964 residential units) north of Executive Park Boulevard North and north of Crescent Way. Demolition of the existing office park development within a 14.5-acre southern portion of the Subarea Plan Area to a new, primarily residential area (with 1,600 residential units and 73,000 gsf of retail).
Brisbane Baylands	684 acres along U.S. Highway 101 in Brisbane immediately south of the border with San Francisco	Four potential options evaluated at equal level of detail: • **Developer-Sponsored Plan (DSP)** includes 7 million gsf of office, retail, industrial, and institutional uses; 4,434 residential units; approximately 169.7 acres of "open space/open area"; and approximately 135.6 acres of "lagoon" area. Total new development under the DSP would be approximately 12.1 million gsf. • **DSP-Entertainment Variant (DSP-V)** is similar to the DSP in its development intensity and land use pattern but replaces the retail and office/R&D uses with entertainment-oriented uses, including a 17,000- to 20,000-seat sports arena, 5,500-seat concert theater, multiple-screen cinema, and more conference/exhibition space and hotel rooms than proposed under the DSP. Total new development under the DSP-V scenario would total 12 million gsf. • **Community Proposed Plan (CPP)** includes 7.7 million gsf of office, industrial, commercial, and institutional uses, along with 330 acres of open space/open area and a 135.6-acre lagoon. In addition to the 684-acre area included as part of the DSP, the CPP includes a 44.2-acre Recology site, which spans the Cities of Brisbane and San Francisco, encompassing the Beatty Subarea designated in the *Brisbane General Plan* and adjacent roadway ROW. The CPP does not include residential development. Total new development under the CPP scenario would total 7.7 million gsf. • **CPP-Recology Expansion Variant (CPP-V)** proposes expansion of the Recology facility in the northeast portion of the Brisbane Baylands within the Brisbane city limits. Under the CPP-V, Recology would expand southward from its current boundary, replacing the hotel and R&D uses proposed under the CPP just north of Geneva Avenue and east of Tunnel Road. The 44.2-acre Recology site would expand by 21.3 acres to a total of 65.5 acres. Total new development under the CPP-V scenario would be 8.1 million gsf.

Table 3-1: Cumulative Projects

Name	Location	Description
Visitacion Valley/ Schlage Lock (Redevelopment Zones 1 and 2)	46 acres in San Francisco's Visitacion Valley neighborhood extending on both sides of Bayshore Boulevard roughly between Sunnydale Avenue and Blanken Avenue	2,014 dwelling units, 72,700 gsf of neighborhood-serving commercial, and 25,000 gsf of cultural/institutional/education development.
Eastern Neighborhoods Plan	Approximately 2,200 acres on the east side of the City	Changes in zoning controls and General Plan amendments intended to encourage new housing while maintaining or creating cohesive neighborhoods.
PG&E Hunters Point Shoreline Area	1000 Evans Avenue	Based on the Shoreline Area investigation work, PG&E is evaluating soil cleanup options to address future uses of the Shoreline Area. Cleanup of groundwater contamination is already in progress. On March 23, 2015, DTSC approved the final feasibility study and remedial action plan for the Shoreline Area of the former Hunters Point Power Plant.
Muni Forward	Citywide, including in project vicinity	Changes to bus routes, lanes, and bulb-outs along nearby streets.
San Francisco Bicycle Plan	Citywide, including in project vicinity	Changes to bike lanes along nearby streets.
Proposed Expansion of AWSS	India Basin/Hunters Point	The AWSS, or Emergency Firefighting Water System, could be expanded out to Hunters Point, potentially along Innes Avenue.
Biosolids Digester Facilities Project	Adjacent to the intersection of Jerold Avenue and Quint Street	The proposed project includes the planning, design, and construction of new digestion and solids handling processes, which would replace the existing and aging facilities that are in need of structural replacement and seismic upgrades. The environmental review process began in June 2015. The draft EIR was released in May 2017 and the final EIR is anticipated in early 2018 (SFPUC 2017).

Notes: AWSS = Auxiliary Water Supply System, City = City and County of San Francisco; CPP = Community Proposed Plan; CPP-V = Community Proposed Plan–Recology Expansion Variant; DSP = Developer-Sponsored Plan; DSP-V = Developer-Sponsored Plan–Entertainment Variant; DTSC = California Department of Toxic Substances Control; EIR = environmental impact report; General Plan = *San Francisco General Plan*; gsf = gross square feet; PG&E = Pacific Gas and Electric Company; R&D = research and development; ROW = right-of-way
Source: Data compiled by AECOM in 2017

References

This subsection includes the reference information for the information cited in the rest of the EIR section.

3.0.4 REFERENCES

Governor's Office of Planning and Research (OPR). 2016 (January 20). *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA. Implementing Senate Bill 743 (Steinberg, 2013).* Sacramento, CA.

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3.1 LAND USE AND LAND USE PLANNING

This section describes the existing environmental and regulatory setting related to land use and land use planning and addresses the potential impacts of the proposed project and variant. Public comments related to several topics were received during the public scoping period in response to the Notice of Preparation. Public comments on a number of issues related to land use were received during the public scoping period. These issues included:

- compatibility with existing land uses;
- height and bulk;
- division of an existing neighborhood;
- changes to zoning designations;
- potential public trust settlement and land exchange between the City and the California State Lands Commission (CSLC); and
- consistency with existing federal, State, regional, and coastal zone regulations and San Francisco Bay (Bay) waterfront plans, including the Association of Bay Area Governments' (ABAG's) *Bay Trail Plan Design Guidelines and Toolkit*.

These comments are addressed in this section. The compatibility of the proposed project and variant with existing zoning and plans also is described in detail in the Initial Study, included in Appendix A.

3.1.1 Environmental Setting

Physical Land Uses in the India Basin Area Surrounding the Project Site

The Bayview Hunters Point neighborhood is located in the southeast quadrant of San Francisco. Bayview Hunters Point is a predominantly industrial and residential district. The location of land uses in this neighborhood is generally defined by topography, with industrial land uses located along the shoreline and residential and institutional uses located at the top of the hill at the neighborhood's center. Residential uses continue back down the slope away from the Bay toward Third Street, the main commercial arterial of Bayview Hunters Point.

Historically, the area has been the location of the City's heaviest industries and its greatest concentration of public housing, supporting the area's high population of low-income residents. The three largest public housing developments in the area, Hunters Point East/West, Westbrook, and Hunters View, are supported by nearby institutional uses: the San Francisco Housing Authority, Malcolm X Academy, George Washington Carver Elementary School, the Willie Mays Boys and Girls Club of San Francisco, and a number of parks in the Hilltop area. Existing and former industrial uses range from small production, distribution, and repair businesses to large warehouses and industrial campuses.

The Bayview Hunters Point neighborhood supports more underutilized land than most other neighborhoods in San Francisco. Most vacant land in the area buffers industrial uses along the Bay from residential uses that are located on the hilltop. The area's underutilized land previously supported the Navy's Hunters Point Shipyard, Candlestick Point (including Candlestick Park, the stadium that formerly hosted the San Francisco 49ers and

San Francisco Giants), and the office park at Executive Park. These areas are currently under redevelopment, as discussed in Section 3.1.4, "Cumulative Impacts."

As shown in Figure 2-2 in Chapter 2.0, "Project Description," the project site is generally surrounded by the Bay on the north, the Candlestick Point–Hunters Point Shipyard Redevelopment Plan areas on the east, Innes Avenue on the south,[1] and Hunters Point Boulevard and Hawes Street on the west. In the immediate vicinity of the project site, surrounding land uses include residential, recreational, institutional, and industrial uses.

The in-water portion of the India Basin area adjacent to the project site encompasses 42.63 acres owned by the City, BUILD, and a few other private parties (Figure 2-2).

Physical Uses at the Project Site

The approximately 38.24-acre project site consists of privately and publicly owned properties and public right-of-way (ROW) (Figure 2-2). The parcels that are collectively referred to as the India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties are owned by the City through the SF Port, RPD, and SFPW, and total 13.6 acres, excluding the public ROW. These parcels are all managed by RPD. The parcels that are collectively referred to as the 700 Innes property are owned by BUILD, except a small parcel of land adjacent to Griffith Street that BUILD intends to acquire. These parcels total 17.12 acres, excluding the public ROW.

A total of 7.52 acres of the project site are public ROW owned by the City, as depicted in Figure 2-2. The portions of Innes Avenue immediately adjacent to these land uses are also included in the project site boundary, and include the following intersections: Hunters Point Boulevard and Hudson Avenue/Hawes Street, Innes Avenue and Hunters Point Boulevard, Innes Avenue and Griffith Street, Innes Avenue and Arelious Walker Drive, and Innes Avenue and Earl Street.

In-water structures associated with the project site include three dilapidated piers, associated piles, and a drainage outfall extending into the Bay.

India Basin Shoreline Park Property

The 5.6-acre India Basin Shoreline Park property currently contains tidal marsh; recreational amenities, including a picnic area, playground, and basketball court; public art; and parking. A portion of the Blue Greenway/San Francisco Bay Trail (Bay Trail) traverses India Basin Shoreline Park. The park provides informal access along the Bay shoreline. Hunters Point Boulevard and Pacific Gas and Electric Company's vacant former power plant parcels are located to the northwest and the 900 Innes property is located to the south. Portions of the India Basin Shoreline Park property are within the jurisdiction of SF Port (Figure 2-2). Two buried ship hulks, the *Bay City* and the *Caroline*, are located within the tidal coastline of the India Basin Shoreline Park property.

[1] Innes Avenue is oriented in a northwest-southeast direction. However, for the purposes of describing the proposed project, Innes Avenue is referred to as running west-east. Similarly, Hunters Point Boulevard is oriented in a northeast-southeast direction, but is referred to as running north-south. Arelious Walker Drive is oriented in a northeast-southwest direction, but is referred to as running north-south. These conventions are used throughout this EIR to describe locations of other buildings and uses relative to the project site.

900 Innes Property

The 900 Innes property consists of seven parcels totaling 2.4 acres, 0.6 acre of which is submerged. This property, located between the India Basin Shoreline Park and India Basin Open Space properties (Figure 2-2), is a former maritime industrial site that contains five structures totaling approximately 7,760 gross square feet (gsf). Among these structures is the historic Shipwright's Cottage. This property also contains the historic India Basin Scow Schooner Boatyard. Approximately 32 creosote-treated piles and two dilapidated piers are located in the Bay, offshore from this property. A portion of the 900 Innes property is within the jurisdiction of SF Port (Figure 2-2).

India Basin Open Space Property

The India Basin Open Space property is a 6.2-acre open space area bordering the Bay. This property includes a portion of the Blue Greenway/Bay Trail along its shoreline and contains benches, upland habitat, tidal salt marsh, mudflats, sand dunes, native vegetation, and a drainage outfall extending into the Bay. Public access to the shoreline is limited to the Blue Greenway/Bay Trail. On-street parking is available adjacent to the property on Arelious Walker Drive. Two easements to the shoreline exist, but they are not paved or designated for public access. Shoreline access also occurs via informal pathways that also are not designated for public access. Portions of the India Basin Open Space property are within the jurisdiction of SF Port (Figure 2-2).

700 Innes Property

Parcels

The 700 Innes property consists of 30 parcels totaling 17.12 acres (Figure 2-2). This area is generally made of fill materials, covered by light brush, debris, dirt, and gravel mounds. This property also supports wetlands. Some portions of the parcels of land are located in the Bay. The property is undeveloped and mostly vacant, except for six structures, including the historic 702 Earl Street property. A pier and approximately eight associated creosote-treated piles extend into the Bay from this property.

The 700 Innes property surrounds Arelious Walker Drive, a public ROW ending in a cul-de-sac, and is generally bounded by Innes Avenue to the south, Earl Street to the east, Griffith Street to the west, and the Bay to the north. Portions of the 700 Innes property may be subject to the public trust, as discussed below (see "The Public Trust" in the discussion of State regulations in Section 3.1.2, "Regulatory Framework"). The 700 Innes property is separated from the Bay by the 6.2-acre shoreline area that is owned by RPD and referred to as the India Basin Open Space.

Public Rights-of-Way

The existing public ROW within the project site totals 7.52 acres (Figure 2-2). Arelious Walker Drive is a paved street that runs north to south and roughly bisects the 700 Innes property, ending in a cul-de-sac. Griffith Street, Hudson Avenue, and Earl Street are partially paved where they meet Innes Avenue, but in general they are unpaved and/or partially paved, unimproved, and fenced from public access. Hudson Avenue runs west to east[2] through the project site, starting at Hunters Point Boulevard and terminating at Earl Street. Sections of Hudson

[2] Hudson Avenue is oriented in a northwest-southeast direction but is referred to here as running west-east. This EIR uses this convention throughout to describe uses relative to the project site.

Avenue are paper streets (roadways that appear on maps but have not been built). Earl Street forms the eastern boundary of the project site, running from the edge of the Bay to Innes Avenue. Griffith Street is the shortest of the streets, starting at Innes Avenue and terminating at the edge of the shoreline, bisecting the project site.[3]

Table 3.1-1 lists the existing buildings on the project site, providing their approximate gross square footage and existing uses.

Table 3.1-1: Existing Buildings on the Project Site

Name of Building/Address	Gross Square Feet	Existing Uses
Shipwright's Cottage/900 Innes Avenue	900	Vacant
702 Earl Street	11,000	Residential; workshop/studio[1]
838–840 Innes Avenue	3,700	Residential (rear unit); vacant (front unit)
India Basin Scow Schooner Boatyard/900 Innes Avenue		
Blacksmith and Machine Shop	1,460	Vacant
Paint Shop and Compressor House	1,700	Vacant
Boatyard Office Building	286	Vacant
Storage Building	1,600	Vacant
Tool Shed and Water Tank House	940	Vacant
Allemand Brothers Boatyard/700 Innes Avenue		
Storage Building	400	Vacant
Shop Building	1,100	Storage
Ark Houseboat	300	Storage
888 Innes Avenue	3,750	Industrial/production

Note: Under the proposed project or variant, the 702 Earl Street building would be relocated to a northeastern location on the 700 Innes property, closer to the shoreline.
Source: Data provided by RPD and BUILD in 2016

Innes Avenue

The portions of Innes Avenue immediately adjacent to the project site boundary shown in Figure 2-2 are also included in the project site boundary. This area includes the following intersections: Hunters Point Boulevard and Hudson Avenue/Hawes Street, Innes Avenue and Hunters Point Boulevard, Innes Avenue and Griffith Street, Innes Avenue and Arelious Walker Drive, and Innes Avenue and Earl Street.

[3] Earl and Griffith streets are oriented in a southwest-northeast direction, but the streets are referred to here as running north-south. This EIR uses this convention throughout to describe uses relative to the project site.

In-Water Areas

In-water structures associated with the project site include three dilapidated piers, 32 associated piles, and a drainage outfall extending into the Bay.

3.1.2 Regulatory Framework

Federal

Coastal Zone Management Act

The Coastal Zone Management Act is the only applicable federal law or regulation pertaining to land use and land use planning. The Coastal Zone Management Act is implemented locally through the plans and policies of the San Francisco Bay Conservation and Development Commission (BCDC), which are described below in the discussion of regional plans and policies.

State

The Public Trust

The common-law public trust and the Burton Act,[4] as amended (referred to in the rest of this EIR section as the Public Trust) imposes certain use restrictions on historical tidal and submerged lands along the waterfront to protect the interests of the State in commerce, navigation, and fisheries, as well as other public benefits recognized to further the Public Trust's purposes, such as recreation and environmental preservation.[5] Under Sections 6301 and 6306 of the Public Resources Code, CSLC has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. CSLC retains certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions.

The State legislature has granted to the City, through the SF Port, some of the project site land that is impressed with the Public Trust (e.g. portions of the property Bayward of the SF Port jurisdictional line). Other portions of the project site outside the SF Port jurisdictional line may also be subject to a Public Trust claim by CSLC, including paper street areas that are owned by the City and property owned by Build, Inc. As noted above, the project site includes both granted lands under the Burton Act and lands for which the Public Trust status is uncertain.

Regional

In addition to local plans and policies, there are several regional planning agencies whose environmental, land use, and transportation plans and policies consider the growth and development of the nine-county San Francisco Bay Area (Bay Area). Some of these plans and policies are advisory, and some include specific goals and provisions that must be adhered to when evaluating a project under CEQA. The regional plans and policies that are relevant to the proposed project and variant are discussed below.

[4] Chapter 1333, Statutes of 1968.
[5] Public Trust Policy, adopted by CSLC on August 29, 2001.

Plan Bay Area and Regional Housing Needs Plan

The *Plan Bay Area,* published by the Metropolitan Transportation Commission and ABAG, is a long-range integrated transportation and land use/housing strategy through 2040 for the Bay Area. The *Plan Bay Area* functions as the sustainable communities strategy mandated by Senate Bill 375. In July 2013, ABAG projected regional housing needs in its *Regional Housing Needs Plan for the San Francisco Bay Area*: *2014–2022* (Regional Housing Needs Plan). According to this plan (ABAG, 2013), San Francisco's projected housing need from 2014 to 2022 is 28,869 residential units, consisting of:

- 6,234 units within the very-low-income level (0–50 percent of area median income);
- 4,639 units within the low-income level (51–80 percent of area median income);
- 5,460 units within the moderate-income level (81–120 percent of area median income); and
- 12,536 units within the above-moderate-income level (more than 120 percent of area median income).

The jurisdictional allocation for San Francisco translates into an average annual need for approximately 4,124 net new residential units.

San Francisco Bay Plan and San Francisco Waterfront Special Area Plan

Certain portions of the project site along the waterfront are within the jurisdiction of the *San Francisco Bay Plan* (Bay Plan) and SF Port. The Bay Plan was adopted by BCDC in 1969 in accordance with the McAteer-Petris Act (California Government Code Sections 66600–66682). The plan guides the protection and use of the Bay and its shoreline. Under the McAteer-Petris Act, BCDC has the authority to issue or deny permits for the placement of fill, extraction of materials, or substantial changes in use of land, water, or structures within its jurisdiction, and to enforce policies aimed at protecting the Bay and its shoreline.

BCDC's permit authority over the Bay itself, which is for areas below the mean high-tide line, relates primarily to Bay fill. Permits can be approved by the commission only for certain water-oriented uses or to improve shoreline appearance or public access to the Bay, and when there is no alternative upland location for the proposed use. For BCDC to approve a permit, the project must be consistent with the McAteer-Petris Act and the Bay Plan (including any special area plan).

BCDC's jurisdiction over the Bay shoreline is limited to a 100-foot-wide shoreline band extending inland from the mean high-tide line and areas that are subject to tidal action from the south end of the Bay to the Golden Gate (Point Bonita–Point Lobos) and Sacramento River line. BCDC also has jurisdiction over other areas of the Bay not within the 100-foot shoreline band, including salt ponds, managed wetlands, and certain waterways. Figure 3.11-3 in Section 3.11, "Recreation," shows the Bay edge and the BCDC 100-foot shoreline band line at the project site.

To minimize future pressures for Bay fill, the Bay Plan maps designate shoreline "priority use areas" that should be reserved for regionally important, water-oriented uses needing or historically located on shoreline sites, such as ports, water-related industry, water-related recreation, airports, and wildlife refuges. The Bay Plan maps also contain policies that generally specify uses and other criteria for the use and development of each designated site.

The *San Francisco Waterfront Special Area Plan* (San Francisco Waterfront SAP) applies the requirements of the McAteer-Petris Act and the provisions of the Bay Plan to the San Francisco waterfront in greater detail and should be read in conjunction with both the McAteer-Petris Act and the Bay Plan. The San Francisco Waterfront SAP is based on certain assumptions that the Waterfront Advisory Committee made in the early 1970s, which were updated by BCDC and the Port Commission in 2012 when the plan was amended.

Bay Plan Map 5 (Central Bay) designates the shoreline of the project site as a "Waterfront Park/Beach" Priority Use Area. Map 7 of the San Francisco Waterfront SAP identifies the shoreline of the project site as Park Priority Use. Bay Plan policies pertaining to recreation are listed in Section 3.11, "Recreation." These uses prioritize recreational and public access uses, including docks, public launching facilities, pedestrian and bicycle trails, historic interpretative displays, and water-oriented commercial recreational establishments, such as restaurants, equipment concessions, and specialty shops.

The following specific policies of the San Francisco Waterfront SAP are applicable to the proposed project and variant (BCDC, 2012):

- The India Basin area should be developed as a major waterfront park in accordance with the Recreation and Open Space Plan of the City of San Francisco. Some fill may be needed.
- Limited development, preferably Bay-oriented commercial recreation, should be permitted on the shoreline, provided it is incidental to public access and water-related recreation and does not obstruct public access.
- Continuous public access would be provided along the west site of future Pier 98,[6] along India Basin, and a public access connection should be provided between the two.

In addition, the San Francisco Waterfront SAP includes a number of general policies that are applicable to all areas covered by the plan. Among these are policies for the San Francisco waterfront related to required public access and view corridors. General Policy 6 of the San Francisco Waterfront SAP states that maximum feasible public access should be provided in conjunction with any development in the plan area. General Policy 7 states that important Bay views from level inland streets should be preserved and improved.

Section 66605 of the McAteer-Petris Act identifies the criteria that a project must meet before it can be authorized to place fill in the Bay to complete the project. These criteria state that fill should be authorized only if the fill would improve the shoreline's appearance or improve public access to the shoreline, and if harmful effects of fill placement are minimized.

Bay Trail Plan

The *Bay Trail Plan* laid the groundwork for establishing the Bay Trail, a regional hiking and bicycling trail around the perimeter of San Francisco and San Pablo bays. The *Bay Trail Plan* was prepared by ABAG pursuant to Senate Bill 100, which mandated that the Bay Trail provide connections to existing park and recreation facilities, create links to existing and proposed transportation facilities, and be planned to avoid adverse effects on environmentally sensitive areas.

[6] Construction of Pier 98 was abandoned. The area is now Heron's Head Park.

The *Bay Trail Plan Design Guidelines and Toolkit* provides goals and direction for planning and design of the trail. The proposed Bay Trail alignment is a 500-mile recreational ring around the Bay. Where feasible, the trail is intended to be close to the shoreline. The trail system is intended to function as not only a recreational corridor but also a connecting link to inland recreation sites, residential neighborhoods, and employment centers, and to provide restricted access to environmentally sensitive areas. Policies in the Bay Trail Plan fall into five categories: trail alignment, trail design, environmental protection, transportation access, and implementation.

Local

San Francisco General Plan

The *San Francisco General Plan* (General Plan) provides the City's vision for the future of San Francisco. The General Plan is divided into 10 elements that apply citywide: Air Quality, Arts, Commerce and Industry, Community Facilities, Community Safety, Environmental Protection, Housing, Recreation and Open Space, Transportation, and Urban Design. Development in the City is subject to the General Plan, which provides objectives and policies guiding land use decisions, and contains some policies that relate to physical environmental issues, some of which may conflict with each other.

General Plan elements that are particularly applicable to the planning considerations of the proposed project and variant are the Urban Design, Housing, and Recreation and Open Space elements.

Urban Design Element

The Urban Design Element, updated in 2010, is concerned "both with development and with preservation. It is a concerted effort to recognize the positive attributes of the city, to enhance and conserve those attributes, and to improve the living environment where it is less than satisfactory" (San Francisco, 2010a). The Urban Design Element also seeks to protect public views of open space and water bodies, and to protect and enhance the aesthetic character of San Francisco. Objective 3 of the Urban Design Element seeks to ensure that major new development complements existing land use patterns, natural resources, and neighborhood character. Objective 4 emphasizes the need to protect existing and create new connections to recreational areas.

Housing Element

The key objective of the Housing Element, updated in 2014, is to promote the development of new housing (both market-rate and affordable housing) in areas in San Francisco close to the City's job centers and well served by transit, while retaining existing housing in a way that strengthens the economy, reduces environmental impacts, and creates a stronger sense of place and community. A particular focus of the Housing Element is on creating and retaining affordable housing that reflects intense demand for such housing, a growing economy that puts increasing pressure on the existing housing stock, and a constrained supply of land that necessitates infill development and increased density (San Francisco, 2014a).

Recreation and Open Space Element

The Recreation and Open Space Element, updated in 2014, is intended to improve the quality of life in San Francisco communities by providing places for "recreation, activity and engagement, for peace and enjoyment, and for freedom and relief from the built world" (San Francisco, 2014b). Among its objectives is

increasing recreation and open space to meet the long-term needs of the City and Bay region. Objective 2, Policy 2.5 of the Recreation and Open Space Element encourages the development of region-serving open spaces in opportunity areas, including the southeastern waterfront. Objective 4 promotes protection and enhancement of the biodiversity, habitat value, and ecological integrity of open spaces.

Environmental Protection Element

The Environmental Protection Element, updated in 2004, contains goals and policies intended to achieve a balance between urban development and natural resources. This General Plan element seeks to protect plant and animal life and to prevent pollution to restore the natural qualities of land, air, and water. Energy conservation in the built environment is also a primary objective of the Environmental Protection Element (San Francisco, 2004).

Accountable Planning Initiative

In November 1986, the voters of San Francisco approved Proposition M, the Accountable Planning Initiative, which added Section 101.1 to the San Francisco Planning Code (Planning Code), establishing eight priority policies. These policies, set forth in Section 101.1(b), provide as follows:

1. that existing neighborhood serving retail uses be preserved and enhanced and future opportunities for resident employment in, and ownership of, such businesses be enhanced;
2. that existing housing and neighborhood character be conserved and protected to preserve the cultural and economic diversity of our neighborhoods;
3. that the City's supply of affordable housing be preserved and enhanced;
4. that commuter traffic not impede Muni transit service or overburden our streets or neighborhood parking;
5. that a diverse economic base be maintained by protecting the City's industrial and service sectors from displacement due to commercial office development, and that future opportunities for resident employment and ownership in these sectors be enhanced;
6. that the City achieve the greatest possible preparedness to protect against injury and loss of life in an earthquake;
7. that landmarks and historic buildings be preserved; and
8. that our parks and open space and their access to sunlight and vistas be protected from development.

Bayview Hunters Point Area Plan

The *Bayview Hunters Point Area Plan* (San Francisco, 2010b), last amended by the Planning Commission in 2010, is generally bounded by Cesar Chavez Street on the north, Cargo Way on the east, the Bay to the southeast, and U.S. Highway 101 on the west. The Bayview Hunters Point area excludes the Hunters Point Shipyard, which is covered in a separate area plan. Candlestick and Executive Park are subareas of Bayview Hunters Point that are covered in their own subarea plans.

Bayview Hunters Point is a predominantly industrial and residential district. Historically, the area has been the location of the City's heaviest industries and its greatest concentration of public housing, supporting the area's high population of low-income residents. Today, the area is at a critical juncture as urban growth is proceeding

southeast: public and private developments, along with the construction of the Third Street Light Rail, are increasing the significance of Bayview Hunters Point in the future of the City's development.

The following objectives of the *Bayview Hunters Point Area Plan* are applicable to the proposed project and variant:

- **Objective LUS.1:** Stimulate business, employment, and housing growth within the existing general land use pattern by resolving conflicts between adjacent industrial and residential areas.
- **Objective TRA.4:** Develop and maintain a system for the easy movement of people and goods, taking into account anticipated needs of both local and through traffic.
- **Objective HOU.5:** Preserve and enhance existing residential neighborhoods.
- **Objective HOU.6:** Encourage the construction of new affordable and market rate housing at locations and density levels that enhance the overall residential quality of Bayview Hunters Point.
- **Objective COM.7:** Encourage healthy retail reuse in the existing commercial core of Third Street and complementary growth in adjacent sections.
- **Objective IND.8:** Strengthen the role of Bayview's industrial sector in the economy of the district, the city, and the region.
- **Objective URB.10:** Enhance the distinctive and positive features of Bayview Hunters Point.
- **Objective URB.11:** Improve definition of the overall urban pattern of Bayview Hunters Point.
- **Objective ROS.12:** Provide and maintain adequately located, well designed, fully equipped recreation facilities and encourage their use.
- **Objective ROS.13:** Provide continuous public open space along the shoreline of Bayview Hunters Point unless public access clearly conflicts with maritime uses or other non-open space uses requiring a waterfront location.
- **Objective PSF.16:** Provide adequate, efficient and properly located police, fire and health services.

Bayview Hunters Point Community Planning Efforts

There is a long history of community planning efforts for the project area between City departments and community groups, including the San Francisco Planning Department (Planning Department), the former San Francisco Redevelopment Agency, the Bayview Hunters Point Project Area Committee, and the India Basin Neighborhood Association. The major planning efforts that address the project site are listed below.

Bayview Hunters Point Community Revitalization Concept Plan

The *Bayview Hunters Point Community Revitalization Concept Plan* (Revitalization Concept Plan), created and adopted by the Bayview Hunters Point Project Area Committee in 2002, was a vision document for planning, economic development, and cultural programming for the Bayview Hunters Point neighborhood. The Revitalization Concept Plan addressed future planning and development at the project site and immediately surrounding area, referred to in the Revitalization Concept Plan as the Hunters Point Shoreline.

The Revitalization Concept Plan envisioned a waterfront mixed-use center off of Innes Avenue, with public open spaces along the shoreline. Specifically, the community expressed interest in waterfront recreation along the Hunters Point Shoreline, with public access to the waterfront and new mixed-use, mixed-income residential developments with neighborhood-serving ground-floor businesses north of Innes Avenue. The mixed-use district was envisioned as a small-scale district with two- to three-story buildings. The circulation network would connect the project site to the surrounding neighborhood, allowing bicycle and pedestrian access to the businesses and recreational amenities (BHP PAC, 2002).

India Basin Shoreline Sub-Area Plan

A draft of the *India Basin Shoreline Sub-Area Plan* (Sub-Area Plan) was prepared by the Planning Department in 2009, but the plan was never adopted. The Sub-Area Plan was intended to serve as a part of the *Bayview Hunters Point Area Plan*, an area plan of the citywide General Plan.

The Sub-Area Plan contains objectives and policies to guide planning at the India Basin Shoreline, implemented through new development controls for the site, including new zoning, new heights, and new design guidelines. The Planning Department's intent was to amend the *Bayview Hunters Point Redevelopment Plan* to include the India Basin Shoreline in the redevelopment plan, which contained a framework for funding priority public improvements contained in the Sub-Area Plan.

The Sub-Area Plan intended to develop the India Basin Shoreline as a mixed-use neighborhood, with employment, neighborhood-serving, and residential uses. The Sub-Area Plan emphasizes shoreline access, both physical and visual, with cultural, recreational, and natural resource amenities emphasizing the site's maritime history. The Sub-Area Plan proposes circulation improvements to improve linkages and connections throughout the neighborhood and to the shoreline, by transit, vehicle, bicycle, and pedestrians (San Francisco, 2009).

India Basin Shoreline: The Community Vision

India Basin Shoreline: The Community Vision (Community Vision) was prepared by the India Basin Neighborhood Association in 2010 in response to the Sub-Area Plan. The Community Vision emphasizes the need for employment opportunities, commercial services, and publicly accessible waterfront open space to support existing residents and new housing in the India Basin and larger Hunters Point neighborhoods. The Community Vision expresses concern about the potential loss of public shoreline access caused by privatization of the shoreline by residential development. In addition, the Community Vision envisions increased tourist and entertainment use at the India Basin Shoreline, facilitated by a variety of transportation improvements for all modes (IBNA, 2010).

San Francisco Planning Code

The Planning Code incorporates by reference the City's Zoning Map and governs permitted uses, densities, and the configuration of buildings in San Francisco. Permits to construct new buildings (or to alter or demolish existing ones) may not be issued unless either the project complies with the Planning Code, an exception or variance is granted pursuant to the code's provisions, or legislative amendments to the Planning Code are included and adopted as part of the project.

Use Districts

The project site is zoned Light Industrial (M-1), Heavy Industrial (M-2), Small-Scale Neighborhood Commercial (NC-2), and Public (P) (Figure 3.1-1). The Planning Code sections identified parenthetically below describe these use districts as follows:

- *M-1 (Section 210.4):* M-1 is a designation intended for smaller industries that are dependent on truck transportation. Most industries are permitted in the M-1 district, but those with particularly noxious characteristics are excluded.
- *M-2 (Section 210.4):* M-2 permits heavy industry with fewer requirements as to screening and enclosure.
- *NC-2 (Section 711.1):* NC-2 is a land use designation for areas ranging in size from two blocks to many blocks, commonly located along collector and arterial streets that have transit routes. Small-Scale Neighborhood Commercial districts are defined as linear shopping streets that provide convenience goods and services to the surrounding neighborhoods, as well as limited comparison shopping goods for a wider market.
- *P (Section 211):* The P Zoning District applies to land that is owned by a governmental agency and is in some form of public use, which can include parks and open space.

As described in Section 3.1.1, "Environmental Setting," the India Basin Shoreline Park property is zoned M-1 and P; the 900 Innes property is zoned M-1, NC-2, and P; the India Basin Open Space property is zoned M-1, M-2, and P; and the 700 Innes property is zoned M-1 and NC-2. Portions of the project-related RPD and ROW properties are currently zoned M-1, NC-2, M-2, and P, and are within the 40-X and OS height and bulk districts. Those properties located within the future public park network would be rezoned to P; some portions of existing unaccepted ROW would be incorporated into the future mixed-use urban village and would require rezoning into a special use district (SUD) with specific height, bulk, and use designations appropriate for the proposed development, through amendments to the *San Francisco General Plan* (General Plan), Planning Code text, and the Zoning Map.

The 700 Innes property is currently zoned M-1 and NC-2 and is within the 40-X Height and Bulk District. The 700 Innes property would require rezoning into an SUD with specific height, bulk, and use designations appropriate for the proposed development, through amendments to the General Plan, Planning Code text, and the Zoning Map.

Height and Bulk Districts

All four project site properties are within the 40-X Height and Bulk District. The 40-X Height and Bulk District would subject the proposed project or variant to a 40-foot height limit, with no bulk restriction. Portions of the India Basin Shoreline Park property are within the OS Height and Bulk District, which is intended to indicate its principal or exclusive purpose as open space, with future development strictly limited.

Source: SOM, 2017

Figure 3.1-1 **Existing Zoning at the Project Site**

3.1.3 Impacts and Mitigation Measures

Significance Thresholds

The thresholds for determining the significance of impacts in this analysis are consistent with the environmental checklist in Appendix G of the State CEQA Guidelines, which has been modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the proposed project or the variant would result in a significant impact related to Land Use and Land Use Planning. Implementation of the proposed project or the variant would have a significant effect on Land Use and Land Use Planning if the project would:

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

Approach to Analysis

The analysis in this section focuses on whether implementing the proposed project or variant would physically divide an established community. It also identifies whether the proposed project or variant would conflict with land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect.

Conflicts and inconsistencies with a policy, in and of themselves, do not constitute significant environmental impacts, unless such conflicts or inconsistencies result in direct physical environmental impacts. The physical impacts of the proposed project and variant are discussed throughout Chapter 3.0 of this EIR and in the Initial Study (included in Appendix A). Conflicts with land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect are discussed under Impact LU-2.

Project Features

Both the proposed project and the variant would involve demolishing some of the existing buildings on the project site and constructing a mixed-use development that would include residential, commercial, institutional/educational, research and development (R&D), parking, and open space uses. Table 3.1-2 provides a simplified summary of the development components for the proposed project and variant.

Table 3.1-2: Summary of Proposed Project and Variant Components

Project Feature	Proposed Project	Variant
Number of Dwelling Units	1,240	500
Commercial Space	279,145 gsf	1,003,815 gsf
Institutional/Educational Space	53,499 gsf	53,499 gsf
Number of Parking Spaces	1,800	1,932
Publicly Accessible Recreation/Open Space	1,067,220 sq. ft. (24.5 acres)	1,067,220 sq. ft. (24.5 acres)

Notes: gsf = gross square feet; sq. ft. = square feet
Source: AECOM, 2016

Public Trust Doctrine

As described in Section 3.1.2, "Regulatory Framework," portions of the project site are impressed with the Public Trust and other portions could be subject to a claim that the Public Trust applies. The public benefits afforded by the Public Trust include the public's right to commerce, navigation, and fisheries, and have become more broadly associated with recreational access and preservation of natural resources along the shoreline.

To the extent a Public Trust claim could be asserted on any land proposed for residential and commercial uses for the proposed project and variant, which land would be privately owned and would not directly support public access to the shoreline, these uses would be inconsistent with the Public Trust. BUILD anticipates negotiating a trust settlement or exchange agreement with CSLC, SF Port, and the City that would resolve any potential Public Trust claims.

Specifically, the trust settlement or exchange agreement would likely relocate, reorganize, and/or consolidate designated portions of the project site that are subject to a Public Trust claim. Public Trust claims would be removed from the developable portions of the project area that would be used for residential and commercial use, and instead a public trust designation would be impressed on lands not currently Public Trust lands that are adjacent to the waterfront. These lands would be permanently dedicated to public access, open space, and other Public Trust uses.

The trust settlement or exchange agreement would be approved between BUILD, CSLC, City and SF Port. In addition, SF Port and RPD would enter into a long-term memorandum of agreement for RPD to manage the open space area subject to the public trust. Establishing a trust settlement or exchange agreement would resolve the inconsistency with the Public Trust.

San Francisco General Plan

The proposed public open space uses at the India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties would be allowed under the current M-1, M-2, and NC-2 zoning, but the proposed project and variant propose to rezone these parcels to P through amendments to the General Plan, Planning Code text, and Zoning Map.

The 700 Innes property is currently zoned M-1 and NC-2 and is within the 40-X Height and Bulk District. Some components of either the proposed project or the variant would exceed the maximum 40-foot height limit. The proposed uses at this property would require rezoning the M-1 and NC-2 parcels and changing the 40-X height and bulk limits. These changes to the development controls (including increases in height limits) would require amending the General Plan, Planning Code text, and Zoning Map and adopting an India Basin Special Use District (SUD) and design standards and guidelines (DSG) for the development, entitled through the SUD process and a development agreement.

The intention of forming an SUD for the project area would be to establish land use controls that are tailored to be appropriate for the proposed mixed-use development under the proposed project or variant. The current Planning Code provisions reflect the historic industrial uses in the area. By contrast, the SUD would set new standards for height, bulk, setback, circulation, and other applicable design controls that are consistent with the residential, commercial, and recreational uses that are proposed at the project site. Establishing the SUD and DSG would help

ensure that project components are planned and designed considering the surrounding land uses, while providing improvements that enhance the neighborhood.

Amendments to the General Plan, the Planning Code, and the Zoning Map and adoption of the India Basin SUD and DSG would require approval from the Board of Supervisors upon recommendation of the Planning Commission. The Planning Department, Zoning Administrator, Planning Commission, Board of Supervisors, and other City decision-makers will evaluate the conformance of the proposed project and variant with the General Plan's objectives and policies, and will consider potential conflicts as part of the decision-making process. If approved, the proposed project or variant would ultimately be consistent with the applicable zoning regulations.

San Francisco Bay Plan and San Francisco Waterfront Special Area Plan

Implementing the proposed project or variant would require amending the Bay Plan Map 5 and the San Francisco Waterfront Special Area Plan Map 7, because the proposed project and variant include commercial and residential uses on a portion of the site where the Bay Plan shows the Waterfront Park/Beach Priority Use Area designation and the Waterfront Special Area Plan shows the Park Priority Use designation.

Both the proposed project and the variant would involve demolishing existing in-water structures (old piers and piles); constructing public access and recreational improvements, including a beach, trails, human-powered boat launch facilities, and a beer garden/café; and installing wetland and tidal marsh enhancements to improve ecological function along the shoreline area of the project site, including all of the project area within the BCDC 100-foot shoreline band. BCDC will review the environmental analysis prepared for the project to determine whether the proposed uses are consistent with the multiuse framework that the Bay Plan has established for the San Francisco shoreline. The project requires review by BCDC's Design Review Board (BCDC, 2016). Construction of these components, along with a larger development plan for the shoreline within the project site, would be subject to BCDC permitting requirements.

As described in Section 3.15, "Hydrology and Water Quality," development of wetlands, shoreline habitats, and public access for either the proposed project or the variant would require a permit from BCDC to allow construction within the 100-foot shoreline band. The permit may include conditions for public access, specific construction methods to assure safety or protect water quality, preconstruction plan review requirements, and mitigation requirements to offset adverse environmental impacts of the project (BCDC, 2016).

Impact Evaluation

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

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

The division of an established community typically involves constructing a barrier to neighborhood access (such as a new freeway) or removing a means of access (such as a bridge or roadway). The proposed project or variant would not physically divide the established community that currently exists on the project site. Both the proposed project and the variant would involve demolishing six existing buildings, adjusting existing public ROWs, and constructing new roadways within the project site. The proposed improvements would allow for

better access to and through the project site from the adjacent existing uses. Most of the existing buildings are vacant or would be relocated, thus accommodating existing residents; therefore, there would be no displacement of existing residents.

The proposed project or variant would also enhance existing access and provide new access to the existing India Basin Open Space and the future Northside Park. It would construct a network of new pedestrian pathways and Class I and II bicycle lanes to form a continuous Blue Greenway/Bay Trail; and provide multiple points of access between India Basin Shoreline Park and the 900 Innes and 700 Innes properties. Some of the existing streets, sidewalks, pedestrian pathways, and recreational facilities on and adjacent to the project site would be closed for period of time during project construction, but these closures would be temporary.

The proposed project or variant would create a new mixed-use community featuring residential, commercial, institutional/educational, R&D, parking, and open space uses on a mostly vacant project site. By providing new access to the area, the proposed project or variant would connect this new mixed-use community to existing and future residential communities to the west and east and to existing and future open spaces along the Bay. The impact of the proposed project or variant related to physical division of an established community would be *less than significant.* No mitigation measures are necessary.

Impact LU-2: The proposed project or variant would not result in conflicts with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. *(Less than Significant)*

Implementation of the proposed project or variant could result in inconsistencies with the General Plan, the Bay Plan, and the San Francisco Waterfront SAP, as discussed below.

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

San Francisco General Plan

General Plan elements adopted to prevent or mitigate environmental impacts that could occur at all four project site properties under the proposed project or variant include the Urban Design Element, which addresses preservation of scenic vistas and historic preservation; the Housing Element, which seeks to balance population and housing growth in the City; the Environmental Protection Element, which prioritizes preservation of natural habitats, wildlife, air, and water quality; and the Recreation and Open Space Element, which ensures protection of open spaces and creation of recreational amenities for public use.

The consistency of the proposed project or variant with General Plan policies that focus on specific environmental topics are addressed in separate relevant topical sections of the EIR. Section 3.2, "Aesthetics," addresses Policy URB.CPN.1.1, which seeks to protect major views in the City, especially those of open space or water, and Policies URB.MND.3.5 and URB.MND.3.6, which promote relation of height and bulk of major new development to the existing City pattern and natural topography. Section 3.4, "Cultural Resources," addresses Policy URB.CON.2.4, which intends to preserve historic landmarks or areas.

As described above, the land use controls proposed for the project site are inconsistent with the existing land use designations and controls for the site in the General Plan and Planning Code. However, the proposed project and variant include proposed changes to the development controls for the project site that would amend the General Plan, Planning Code text, and Zoning Map. The proposed project and variant would include adoption of an India Basin SUD, supported by design standards and guidelines for the development, entitled through the SUD process. The project sponsors and the City would also adopt a development agreement. The resulting changes to the use, height, and bulk districts for the site would be reviewed for overall consistency with the General Plan by the Planning Department, Zoning Administrator, Planning Commission, Board of Supervisors, and other City decision-makers during the decision-making process. Through this process, the proposed project or variant would eliminate inconsistencies between land use provisions in the General Plan.

San Francisco Bay Plan and San Francisco Waterfront Special Area Plan

Portions of the shoreline within the project site are under BCDC jurisdiction. The Bay Plan establishes policies intended to protect and guide use of the Bay and its shoreline, seeking to minimize additional fill activities in the Bay. The San Francisco Waterfront SAP designates specific uses for sites along the waterfront of San Francisco within BCDC's jurisdiction. These plans prioritize water-oriented recreation and public access uses along the shoreline and promote preservation of scenic viewsheds. Implementing the proposed project or variant would require amending the Bay Plan, because both project scenarios propose residential or commercial uses in a portion of the area addressed by the Bay Plan Map 5 and the San Francisco Waterfront SAP Map 7 that differ from the open space uses anticipated in the Waterfront Park/Beach Priority Use Area and Park Priority Use designations.

Amendment of the Bay Plan and San Francisco Waterfront SAP to revise the configuration of the area designated as Waterfront Park/Beach Priority Use and Park Priority Use, respectively, would bring the project into consistency with the Bay Plan and San Francisco Waterfront SAP. While the configuration of the Waterfront Park/Beach Priority Use and Park Priority Use designated areas differ from the proposed project and variant proposed use locations, the proposed project and variant are intended to be consistent with the overall policies in the Bay Plan and the San Francisco Waterfront SAP.

- The proposed project and variant propose to enhance the existing open space and recreational uses in the project area and create new usable open space with improved access to the shoreline along the entire project site. Together, the project properties would provide a 20.81-acre network of new and/or improved parkland and open space, creating new and improved waterfront parkland and open space.
- The proposed project and variant include water-oriented uses, including a beach on the India Basin Open Space property, two human-powered boat launches, one on the India Basin Shoreline Park property and one on the India Basin Open Space property, and a beer garden/cafe. These water-oriented uses would complement upland trail, playground, gathering, and fitness recreational amenities provided by the proposed project and variant.
- Old dilapidated piers would be removed and new pedestrian piers would be provided off of the India Basin Shoreline Park and 900 Innes properties.
- Historic resources related to the maritime industry (in particular, the Shipwright's Cottage) would be restored to U.S. Department of the Interior standards and used as an educational resource in the waterfront park.

- Either the proposed project or the variant would construct a network of pathways and trails to improve shoreline access, both internally within the project site and from off-site areas through the project site to the Bay. The new shoreline network would extend the Blue Greenway/Bay Trail and would provide pedestrian and bicycle connections to and along the shoreline.
- Direct vehicle access to the shoreline would be provided at India Basin Shoreline Park. At the other project site properties, vehicle users would be expected to park and use one of the pedestrian or bicycle pathways to access the shoreline.
- The proposed project or variant would provide a continuation of the Blue Greenway/Bay Trail and a Class I bicycle pathway through the project site, thus improving access to nearby shoreline parks, including Heron's Head Park and the future proposed Northside Park.
- Wetlands and tidal marshes would be created and improved.
- The project and variant would remove some fill and install some new fill for the purpose of improving the shoreline's appearance, public access to the shoreline, and ecological resources along the shoreline.
- The project and variant would be designed to provide view corridors and public access through the development to the open space and shoreline from inland streets.

The proposed project or variant would require a permit from BCDC to allow construction within the 100-foot shoreline band. As part of the permitting process, BCDC would review the project to ensure consistency with BCDC's plans and policies, including those in the Bay Plan and San Francisco Waterfront SAP related to protecting the Bay and shoreline and promoting recreational and public access. As discussed, the proposed project or variant includes provisions designed to be consistent with these policies.

Once BCDC finds that the project would be consistent with the McAteer-Petris Act and the policies of the Bay Plan and the San Francisco Waterfront SAP, the project sponsors would ask BCDC to approve an amendment to the Bay Plan Map 5 and the San Francisco Waterfront SAP Map 7 and issue a permit for work within the 100-foot shoreline band for the proposed project or variant (BCDC, 2016). With the approval of such amendment and permit, the proposed project or variant would consistent with the Bay Plan and the San Francisco Waterfront SAP.

Overall Impact Conclusion

Conflicts with existing plans and policies do not, in and of themselves, indicate a significant environmental effect related to the topic of land use and land use planning within the meaning of CEQA, unless the project substantially conflicts with a land use plan or policy that was adopted for the purpose of avoiding or mitigating an environmental effect, such that a substantial adverse physical change in the environment related to land use would result.

To the extent the proposed project or variant conflict with current zoning and the General Plan, the project sponsors propose to seek amendments to these plans to bring these plans and the project into conformity. As a result, the proposed project and variant would not result in conflicts with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project as reflected in the Planning Code or General Plan. As to a conflict with the configuration of the Waterfront Park/Beach Priority Use Area and Park Priority Use

designations in the Bay Plan and San Francisco Waterfront SAP, respectively, the project sponsors propose to seek an amendment to these plans. The project and variant are designed to be generally consistent with policies in the Bay Plan and San Francisco Waterfront SAP. The proposed project and variant are designed to minimize Bay fill and promote open space uses and public access along the waterfront. BCDC will determine consistency of the proposed project and variant with the McAteer-Petris Act and the policies of the Bay Plan and the San Francisco Waterfront SAP when considering whether to approve permits for the proposed project and variant. For these reasons, impacts of the proposed project or variant related to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect would be *less than significant.* No mitigation measures are necessary.

3.1.4 Cumulative Impacts

Impact C-LU-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would not result in significant cumulative impacts related to land use and land use planning. *(Less than Significant)*

This analysis considers whether cumulative projects, including the proposed project or the variant, would result in impacts related to land use controls or policy in the project vicinity. Cumulative projects consist of mixed-use developments, recreational projects, residential projects (including replacement and addition of new public housing units), and improvements to local transportation infrastructure.

Cumulative projects would not result in physical divisions of existing communities. The cumulative projects would enhance the existing circulation network by improving or adding new transit, pedestrian, and bicycle corridors. They also would improve existing and provide new access between existing and future neighborhoods, existing and future open spaces, and the shoreline.

The Board of Supervisors adopted a redevelopment plan for the Hunters Point Shipyard, a former naval base, in 1997 and amended it in 2010 to integrate both Candlestick Point and the Shipyard into a master-planned community. Phases 1 and 2 of the development plan will construct new infrastructure to support approximately 12,100 new housing units and reconstruction of the Alice Griffith public housing development (with approximately 32 percent of the total housing being affordable housing), approximately 3 million square feet of R&D uses, and more than 300 acres of parks and open space. As part of Phase II, a new 12-acre public park, Northside Park, will be constructed adjacent and across Earl Street from the 700 Innes property along the Bay waterfront. Northside Park is planned to include an open-air marketplace, sports and playground uses, and natural areas for passive use and access to the Bay.

HOPE SF is currently completing reconstruction of Hunters View, which will replace all 267 existing public housing units and add additional affordable and market-rate homes to the community. Amenities will include open space, community facilities, and retail opportunities (HOPE SF, 2016).

The planning context for the Bayview Hunters Point neighborhood foresees a more intense development of land uses than currently exists in the neighborhood. However, the City's southeast quadrant already supports a variety of uses, anchored by residential and institutional uses. Cumulative projects would renovate and add to the stock of affordable housing, including public housing, and would add new market-rate residential units.

The intent of the proposed project or variant, together with cumulative projects, is to assist the City in meeting the objectives of its own land use planning documents and those contained in regional planning documents, such as the Regional Housing Needs Plan and *Plan Bay Area*. Increasing both short-term (construction) and long-term employment opportunities in the Bayview Hunters Point neighborhood is a primary objective of the City's planning documents for the area. The proposed project or variant, together with cumulative projects, would help meet these goals by providing construction jobs and long-term jobs in new commercial space. Revitalization of former industrial parcels would complement, not conflict with, the existing residential, commercial, and institutional uses that Bayview Hunters Point already supports.

Together, the Candlestick Point–Hunters Point Shipyard Phase II project and the proposed project or variant would improve the park and open space system in the southeastern portion of the City to support the recreational needs of the existing and future populations of Bayview Hunters Point. Continuing the Blue Greenway/Bay Trail through the project site and adjacent properties would help meet the long-term vision of ABAG and the Bay Area counties to develop a multiuse trail along the Bay. Other projects in the Bayview Hunters Point neighborhood, including Executive Park and Visitacion Valley/Schlage Lock (Redevelopment Zones 1 and 2), would create mixed-use, residential communities similar in density to the community that would be created by the proposed project or variant. For these reasons, the cumulative land use impact would be *less than significant.* No mitigation measures are necessary.

3.1.5 References

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3.2 AESTHETICS

This section describes the existing environmental and regulatory setting related to aesthetics in the context of scenic vistas, scenic resources, visual character and quality of a site and its surroundings, and light and glare. It addresses the potential impacts of the proposed project and variant related to these issues. Changes to the project site are demonstrated through computer-generated simulations that show the proposed height, bulk, and massing of the buildings associated with the proposed project and variant. Changes to the visual environment are presented from public vantage points.[1] The visual landscape and aesthetic environment are generally analyzed according to their constituent elements: visibility and context, form, bulk, pattern, texture, color, movement, and composite quality. Relevant urban design policies and guidelines are used to determine impacts of the proposed project and variant on the overall visual character of the project, light and glare impacts, and impacts on scenic resources and scenic vistas.

Public comments were received regarding aesthetics during the public scoping period in response to the Notice of Preparation (NOP). These issues are addressed in this section to the extent that the comments are related to the aesthetic issues enumerated above. These comments are addressed in this section.

3.2.1 Environmental Setting

Scenic Vistas

Scenic vistas may be generally described as panoramic views of a large geographic area for which the field of view can be wide and extend into the distance, and associated with vantage points that provide an orientation not commonly available. Examples of scenic vistas include urban skylines, valleys, mountain ranges, or large bodies of water. Scenic vistas in the project area include the downtown San Francisco skyline, Hunters Point Ridge, Rincon Tower, Treasure and Yerba Buena islands, the San Francisco–Oakland Bay Bridge (Bay Bridge), Heron's Head Park, and the Shipwright's Cottage on the 900 Innes property.

San Francisco

Major scenic vistas that are visible from publicly accessible portions of San Francisco include views toward the Pacific Ocean and associated shoreline, the downtown San Francisco skyline, and San Francisco Bay (Bay) and the associated shoreline. Views of these scenic vistas are available mainly at higher elevations throughout the City or along Bay shoreline areas.

India Basin Area

Scenic vistas, including of the downtown San Francisco skyline and the Bay, are available from some public sidewalks and park space within and adjacent to the India Basin area.

Project Site

Scenic vistas, including of the downtown San Francisco skyline and the Bay and associated shoreline abutting the project site, are available from some public sidewalks and recreational trails from the India Basin Shoreline Park,

[1] Public vantage points are defined as views from public locations such as public rights-of-way, scenic vistas, and public open spaces.

India Basin Open Space, and 700 Innes properties and adjacent land areas. Such scenic vistas are not available from the 900 Innes property.

Scenic Resources

Scenic resources typically involve prominent, unique, and identifiable natural features in the environment (e.g., trees, rock outcroppings, islands, ridgelines, and aesthetically appealing open spaces) and cultural features or resources (e.g., regional or architecturally distinctive buildings or structures that serve as focal points of interest).

San Francisco

Major identifiable scenic resources visible toward and from San Francisco in general include landmarks such as the Golden Gate Bridge, the Marin Headlands, Golden Gate National Recreation Area, Ocean Beach, the Transamerica Pyramid building, Treasure and Yerba Buena islands, and the Bay Bridge.

India Basin Area

Scenic resources that dominate views from publicly accessible locations, such as sidewalks and parks, in the India Basin area include the San Francisco downtown skyline, Hunters Point Ridge,[2] One Rincon Hill, Treasure and Yerba Buena islands, the Bay Bridge, and Heron's Head Park. Hunters Point Ridge is the hillside located directly to the west, above India Basin. One Rincon Hill consists of two connected towers located adjacent to the Bay Bridge approach ramp that are among the tallest buildings in San Francisco.

Project Site

India Basin Shoreline Park Property

The India Basin Shoreline Park property has mildly sloping topography. The property is currently landscaped with grasses, trees, geometric pathways, and flat hardscaped on-site recreational areas, which include playground areas, a basketball court, and an open lawn area. The open space of the India Basin Shoreline Park property does not contain any unique features that would be classified as scenic resources. There are also no cultural scenic resources on this property.

900 Innes Property

The existing Shipwright's Cottage is a historic structure located on the 900 Innes property that, though in poor condition, provides a sense of the property's historic use for shipbuilding and boat repair. The Shipwright's Cottage is the only structure on the property that is situated on Innes Avenue. The cottage is at a higher elevation than the other structures located on the 900 Innes property and is visible and identifiable with its high-pitched roof. The other associated structures on the property, including piers, were used to support the shipbuilding and boat repair use and are in dilapidated condition. These associated structures are positioned at lower elevations behind Innes Avenue as the property slopes downward toward the Bay. Therefore, these structures do not have a high degree of visibility from nearby public areas.

[2] Hunters Point Ridge is an approximately 1-mile ridge that connects Hunters Point Hill (elevation 125 feet) with Stony Hill (elevation 282 feet).

Only the Shipwright's Cottage is identified as a scenic resource of the 900 Innes property's built environment. It is identified as such because of its status as a property eligible for the California Register of Historical Resources and a San Francisco Article 10 Landmark (see Section 3.4, "Cultural Resources").

There are no natural scenic resources on the 900 Innes property. Even the boat launch facility at the eastern edge of the property was built over the natural shoreline edge of the Bay.

India Basin Open Space and 700 Innes Properties

There are no unique natural or cultural scenic resources on the India Basin Open Space or 700 Innes properties.

Visual Character

"Visual character" in the CEQA context is an impartial description of the defining physical features, landscape patterns, and distinctive physical qualities within a landscape. Visual character is informed by the composition of land, vegetation, water, and structures and their relationship (or dominance) to one another, and by prominent elements of form, line, color, and texture that combine to define the composition of views. Visual character–defining resources and features within a landscape may derive from notable landforms, vegetation, land uses, building design and façade treatments, transportation facilities, overhead utility structures and lighting, historic structures or districts, or panoramic open space.

San Francisco

San Francisco is a densely built urban area that is distinctive because of its varying topography, adjacency to large bodies of water (the Pacific Ocean and the Bay) on three of its sides, and proximity to large natural areas across its two bridges. Thus, common City references include "the City on the Hill" or "the City by the Bay." Panoramic views of San Francisco typically include the City's downtown skyline framed by its two famous bridges, the Golden Gate Bridge connecting to the Marin Headlands and the Bay Bridge connecting through Yerba Buena Island to the East Bay.

India Basin Area

The *Bayview Hunters Point Area Plan*, an area plan of the *San Francisco General Plan* (General Plan), describes the India Basin/Hunters Point Hill area in the following way (San Francisco, 2010a):

> The steep incline of the northern side of Hunters Point Hill provides a dramatic visual image of the separation between the heavy/maritime industrial uses of India Basin and the residential neighborhoods of Hunters Point.
>
> Innes Avenue along the northern base of the hill has a low building scale and interesting mixture of single-family residential, commercial, and light industrial activities in an intimate pedestrian setting. New retail and eating and drinking uses would help foster commingling among these various uses.
>
> Roadways combing the intricate texture of the hill reveal a dense residential style population, where blocks of older multi-family housing projects are linked to blocks of newer suburban-style housing, with sudden dramatic views of the bay at various points.

> The open space at the top of Hunters Point Hill Park offer sweeping views of the industrial side of the bay—Hunters Point Shipyard, the shipyards of Oakland and Alameda—views linked to the industrial-oriented character one experiences in parts of Bayview at the pedestrian level.

The India Basin area is located in the Bayview Hunters Point neighborhood and has historically been the location of the City's heaviest industrial building and structures. However, as was evident during a site visit by AECOM staff on January 4, 2016, this area of the City has recently experienced a period of redevelopment, and the land areas surrounding the project site reflect the current state of transition.

Surrounding the project site are Pacific Gas and Electric Company's (PG&E's) former power plant to the north; residential buildings across Innes Avenue and up Hunters Point Ridge to the west; the Bay to the east and north; and the site of the future new Northside Park for the approved Candlestick Point–Hunters Point Shipyard Phase II project to the east. Northside Park would be a 12.8-acre public park adjacent and across Earl Street from the 700 Innes property along the Bay waterfront and is planned to include an open-air marketplace, sports and playground uses, and natural areas for passive use and access to the Bay. The varied mix of former industrial areas and old and redeveloped residential areas, combined with blank spaces of vacant land that lack definition (i.e., areas that have not yet been developed), leaves the project area and surroundings with a sense of transition. Areas of disrepair and older largely industrial development are interspersed with new development.

In an attempt to further refine broad policies in the *Bayview Hunters Point Area Plan*, the San Francisco Planning Department (Planning Department), working with the San Francisco Redevelopment Agency, prepared a draft subarea plan to the *Bayview Hunters Point Area Plan* known as *India Basin Shoreline Sub-Area Plan: A Subarea Plan of the Bayview Hunters Point Area Plan* (Sub-Area Plan) (San Francisco, 2009). The draft Sub-Area Plan continued the work of the community revitalization concept plan prepared by the Bayview Hunters Point Project Area Committee and published by the San Francisco Redevelopment Agency in 2002.

The City has not finalized and adopted a subarea plan for the India Basin Shoreline area. Nevertheless, this section describes provisions of the draft Sub-Area Plan—and concepts from the concept plan—to provide further information about a community vision for the area. The draft Sub-Area Plan describes the India Basin Shoreline area in this way (San Francisco, 2009):

> The India Basin Shoreline Plan area sits at the base of Hunters Point Hill. There is a significant grade change from Hunters Point Hill down to the boundary of the Plan area on Innes Avenue, in some cases greater than 150 feet. This dramatic topography serves to separate India Basin Shoreline from the residential areas on Hunters Point Hill, and from the commercial activities along the Third Street corridor.

The visual character of the project site is described below.

Project Site

The project site is located adjacent to the Bay, fronting the India Basin shoreline, and is generally located on flat ground with a topography that slopes toward the Bay at the northeast corner of the site. Chapter 2.0, "Project Description," describes and Figure 2-2 depicts four properties within the project site: India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes. The visual character of these four properties is described below.

India Basin Shoreline Park Property

The India Basin Shoreline Park property is an existing 5.6-acre RPD park located between Hunters Point Boulevard and PG&E's vacant parcels to the north and the 900 Innes property to the south (Figure 2-2). India Basin Shoreline Park currently has two play structures, a basketball court, landscaping, a portion of the Blue Greenway/San Francisco Bay Trail (Bay Trail), artwork by young local artists and students, barbeque grills, seating areas, a water fountain, and educational signage. Vehicular access within the park is provided via Hunters Point Boulevard. Hawes Street has designated parking areas and ends at a cul-de-sac and drop-off area. The park provides informal access along the Bay shoreline, which includes wetlands and upland plantings. Many of the amenities at India Basin Shoreline Park are in outdated condition, require maintenance, and are used only minimally.

India Basin Shoreline Park offers panoramic views of the Bay to the north and east, and closely enclosed views of the residential development on Hunters Point Ridge. Views from the park are dominated by the City's downtown skyline and the western span of the Bay Bridge, both of which are situated north of the park. The current redevelopment and construction activities on neighboring properties such as the former Hunters Point Power Plant and other industrial uses distract viewer attention. This sense of movement leaves the area looking unfinished and in transition.

The park itself includes gently rolling natural topography that is surrounded by the Bay on three sides. The natural topography is landscaped and includes grasses and trees that contrast with the geometric and flat nature of the playing courts within. The curvilinear nature of the park's shoreline contrasts with the dominantly geometric and hard angular shapes of neighboring industrial-use structures and the distant downtown San Francisco skyline.

900 Innes Property

The 900 Innes property is located between the India Basin Shoreline Park and India Basin Open Space properties (Figure 2-2). This property consists of seven parcels totaling 2.4 acres, 0.6 acre of which is submerged along the shoreline of the Bay. The 900 Innes property is a former maritime industrial site that now contains five buildings and structures totaling approximately 7,760 gross square feet (gsf). The property is a mix of paved and unpaved areas. It consists of dilapidated former water-based uses, quay-wall structures, and unprotected natural shoreline that is riddled with debris such as broken concrete, bricks, and rock. Unpaved areas consist of unmaintained grasses and weeds, while the frontage along Innes Avenue features a large tree.

The 900 Innes property has some views out toward the Bay but is visually dominated by a one-story (19 feet, 6 inches), 900-square-foot (sq. ft.) wood-framed house on the northwest corner of Innes Avenue. This house, known as the Shipwright's Cottage, has been designated as San Francisco Landmark No. 250. The Shipwright's Cottage was erected by boatwrights in 1875 and was the first dwelling in the India Basin vicinity. The structure is the last known Victorian worker's cottage and one of the oldest buildings on the San Francisco waterfront. It is in poor condition and uninhabitable.

Figure 2-3 shows the following other structures on the 900 Innes property (construction dates in parenthesis):

- a 1,600-sq.-ft., 20- to 25-foot-tall, steel-framed canopy building (between 1979 and 1989);
- a 1,700-sq.-ft., approximately 15-foot-tall, wood-framed structure (1943);

- a 1,460-sq.-ft. shed measuring approximately 10 feet tall (1930);
- a 1,350-sq.-ft., 10- to 15-foot-tall, wood-framed shed building (1890s);
- a 750-sq.-ft., approximately 10-foot-tall, wood-framed office building adjoining the shed (between 1900 and 1935); and
- a wharf measuring approximately 120 feet long (in stages through the 1930s and 1940s).

All structures are 64–138 years old and are in poor, dilapidated condition. All lack utilities and three of the four have partially or almost completely collapsed. Finally, two dilapidated piers and approximately 20 creosote-treated piles are located in the Bay, offshore from this property.

Overall, the 900 Innes property lacks a cohesive development pattern. The existing Shipwright's Cottage provides a sense of the property's historic use, but the surrounding development and dilapidated nature of the structures contribute to an existing character that is strongly industrial and random in nature.

India Basin Open Space Property

The India Basin Open Space property is an existing 6.2-acre RPD open space that borders the Bay (Figure 2-2). A portion of the Blue Greenway/Bay Trail is located along the shoreline of this property. The India Basin Open Space property contains benches, upland habitat, tidal salt marsh, mudflats, sand dunes, and native vegetation. The Blue Greenway/Bay Trail path is vegetated with a line of trees on either side, which adds a vertical element to a shoreline that is otherwise void of buildings. The Blue Greenway/Bay Trail path is at a higher elevation than the shoreline and the area generally slopes toward the Bay. Where unobstructed, existing views toward the Bay are panoramic. As with the India Basin Shoreline Park property, views out to the Bay, toward the City skyline and the western span of the Bay Bridge attract viewer attention. Lines of rock along the high-tide line reinforce the curvilinear nature of the path. The slopes from the trail to the water's edge are protected by riprap or concrete debris. This adds lines of grey that reinforce the shoreline and upland trail. The muted browns and greens associated with undeveloped topography harmonize with the cool blue/green color of the Bay. Views toward the west and south from the India Basin Open Space property are enclosed by the residential development on Hunters Hill and the strongly angular form of the Shipyard residential development.

700 Innes Property

The 700 Innes property surrounds Arelious Walker Drive, a public right-of-way ending in a cul-de-sac, and is generally bounded by Innes Avenue to the south, Earl Street to the east, Griffith Street to the west, and the Bay to the north. This property consists of 30 parcels totaling 17.12 acres (Figure 2-2). The property was historically part of the Bay and consists of upland fill. Much of the property is undeveloped and unmaintained open space. These areas are covered by ruderal vegetation, debris, dirt, and gravel mounds. The area is mostly flat but generally slopes toward the Bay. The property is bounded closest to the Bay by RPD's India Basin Open Space property to the north and east. RPD's Northside Park will be located on the parcel directly south. To the southwest, the property is bounded by Innes Avenue or buildings along Innes Avenue. The Innes Avenue buildings are generally low-rise (one to four stories) and combine to create a mixture of single-family residential, commercial, and light industrial activities in an intimate pedestrian setting, as described in the *Bayview Hunters Point Area Plan*.

The 700 Innes property is generally undeveloped, except for six buildings and structures. One dilapidated, wood-framed storage structure sits on the concrete wharf that fronts a wood dock in the western portion of the property. A second structure, 702 Earl Street (also known as the Heerdt Building and Repair), built in 1935, is on the southwestern corner of the property. The building at 702 Earl Street is a timber-framed industrial building with two stories over a basement, a compound shed, and a shallow-pitched gable roof. The property also contains three temporary structures (two construction trailers and one shed), a construction vehicle parking area, and debris. Based on the relatively flat topography, the unkempt vegetation, and the current state of disrepair of most structures on the property, the overall form of the site is indistinct. The developed areas along Innes Avenue and Earl Street contrast with the undeveloped nature of the remaining portion of the site.

As with the other properties, views from the 700 Innes property are dominated by views out to the Bay, including toward the Bay Bridge, as well as toward the strong geometric lines and height of the structures associated with the downtown San Francisco skyline. Additionally, the East Bay hills distantly enclose views toward the east, while the Hunters Point Ridge closely encloses views toward the west. Focal points from within the project site are toward the north to downtown San Francisco and the open water and East Bay hills to the east. The natural form of these topographical features contrasts with the angular nature of the single-family homes and housing complexes that are situated on them. Because of the lack of cohesive form and structural development, most views within the property are nondirectional and broken in form.

Views of, Through, Toward, and From the Project Site

Views of the project site were documented from eight representative locations known as "key viewpoints" (KVPs). These identified KVPs are publicly accessible observation points dispersed within a 1-mile radius of the project site (Table 3.2-1 and Figure 3.2-1). KVPs are selected to represent (1) typical views from common types of viewing areas, such as public sidewalks near residential areas with exposure to the project; or (2) specific high-sensitivity areas such as parks, scenic viewpoints, scenic resources, and historic resources whose context could be affected by development of the project. The eight KVPs were selected to capture a representative sample of existing views of and from the project site in terms of both sensitive viewing locations, such as public recreational uses, and publicly accessible views within the project area.

Table 3.2-1: Existing Project Site View Locations

View No.	View Description
1	Westward View of Existing Project Site from the Intersection of Innes Avenue and Donahue Street (Figure 3.2-2)
2	Northeastward View of Existing Project Site from Jerrold Avenue (Figure 3.2-3)
3	Eastward View of Existing Project Site from Northridge Road (Figure 3.2-4)
4	Southward View of Existing Project Site from Heron's Head Park (Figure 3.2-5)
5	Southward View of Existing Project Site from the Intersection of Hunters Point Boulevard, Hudson Avenue, and Hawes Street (Figure 3.2-6)
6	Eastward View of Existing Project Site from Innes Avenue just south of Griffith Street (Figure 3.2-7)
7	Eastward View of Existing Project Site from the Intersection of Hudson Avenue and Whitney Young Circle (Figure 3.2-8)
8	Northwestward View of Existing Project Site from the Intersection of Donahue Street and Galvez Avenue (Figure 3.2-9)
9	KVP 9—Northward View of Existing Project Site from the Intersection of Innes Avenue and Earl Street (Figure 3.2-10)

Note: View locations or photograph viewpoints are also sometimes referred to as key viewpoints.
Source: Compiled by AECOM in 2016

Sources: Square One Productions, 2016; adapted by AECOM in 2017

Figure 3.2-1 **Locations of Key Viewpoints**

KVPs were selected based on review of available land use data, communication with the Planning Department and RPD, and field verification/reconnaissance of existing visual resources in the project area by AECOM on September 5, 2016. KVPs were selected by the Planning Department based on their value in assessing views of existing natural and cultural landscapes from publicly accessible locations, and the changes or effects the project may have on the landscape. Map 1, "Plan to Strengthen City Pattern through Visually Prominent Landscaping," in the Urban Design Element of the General Plan lists Hilltop Park as an important vista point to be protected.

Key Viewpoint 1

KVP 1 (Figure 3.2-2) faces west toward the project site from the northern corner of the intersection of Innes Avenue and Donahue Street. In the short range, this viewpoint immediately overlooks currently vacant land (the location of the approved future Northside Park) and offers typical views that a pedestrian or motorist would encounter while traveling west along Innes Avenue.

Existing mid-range northwesterly views toward the project site are largely unobstructed. This enables long-range views of the downtown San Francisco skyline, the Bay Bridge, and Yerba Buena Island. Because the downtown San Francisco skyline, the Bay Bridge, and Yerba Buena Island are considered scenic resources in this analysis, this would be considered a high-quality scenic view. Large cranes associated with the Port of San Francisco (SF Port)—not considered a scenic resource for this analysis—protrude into areas in the Bay, just behind Heron's Head Park, when viewing from a long range toward the northeast. The otherwise open nature of this view is occasionally eclipsed by vegetation, overhead power lines, trees, and street lights. No major structural development is present in the foreground. The site of the future Northside Park and the project site are both dominated by nondirectional form and irregular lines. Bare earth mixed with patches of weedy vegetation creates a variation of textures in short-range views. This variation contrasts with the uniformly level and smooth surface of the Bay.

Source: Square One Productions, 2016

Figure 3.2-2: KVP 1—Westward View of Existing Project Site from the Intersection of Innes Avenue and Donahue Street

Key Viewpoint 2

KVP 2 (Figure 3.2-3) faces north toward the project site from the northern sidewalk of Jerrold Avenue immediately west of Earl Street adjacent to a public greenspace, which is visible in the short range. From this elevated position on the north side of Hunters Point Ridge, the existing view is panoramic and distantly enclosed by the East Bay hills. The large cranes associated with the SF Port are visible in the long-range view, and attract viewer attention as a result. In the foreground, the existing character is dominated by the strongly rectilinear and angular form of residential structures below. The 700 Innes property dominates mid-range views, where the undeveloped nondirectional form of this property interrupts the geometric square to rectangular form of the built environment. The shoreline along the India Basin Shoreline Park property lends a strong curvilinear aspect to this view and signals the transition from upland to Bay. The curvilinear nature of this shoreline is reinforced by the consistent and simple thin curving line associated with Heron's Head Park, which is a narrow upland area that protrudes into the Bay.

Source: Square One Productions, 2016

Figure 3.2-3 **KVP 2—Northeastward View of Existing Project Site from Jerrold Avenue**

Key Viewpoint 3

KVP 3 (Figure 3.2-4) faces northeast toward the project site from the northern sidewalk along Northridge Road, just east of Ingalls Street. Unobstructed mid-range views of the project site and Bay are possible from this elevated vantage point, while long-range views provide a hazy glimpse of the East Bay hills. The existing short-range view is dominated by long, rectangular residential development in the foreground, which quickly transitions to unobstructed views of the curvilinear shoreline associated with India Shoreline Park. The project site forms a large, open and undeveloped relatively flat expanse where the rough to coarsely grained texture contrasts with the smooth nature of the Bay. The existing view is dominated by horizontally trending lines reinforced by the parallel rooflines and north-to-south trending nature of the shoreline and the protrusion of the Heron's Head Park land area into the Bay.

Source: Square One Productions, 2016

Figure 3.2-4: KVP 3—Eastward View of Existing Project Site from Northridge Road

Key Viewpoint 4

KVP 4 (Figure 3.2-5) faces south toward the project site from Heron's Head Park, a scenic resource as identified above. This KVP is situated along a recreational trail that accesses the tip of the park. Short-range views are of tidal mudflats and open water, while the north side of Hunters Point Ridge dominates long-range views. Strong horizontal lines are created by the ridge of Hunters Point Ridge and the India Basin shoreline. These horizontal lines contrast with the circular and curving nature of the tidal mudflats. Existing residential development on the hillside of Hunters Point Ridge is again strongly geometric and consists of simple angular lines stacked upon one another. Trees and other vegetation serve to break up this pattern, but the vegetation is sparse and inconsistent. The undeveloped nature of the project site combined with the similarities in elevation between the project site and KVP 4 make it difficult to determine the boundaries of the project site.

Source: Square One Productions, 2016

Figure 3.2-5: KVP 4—Southward View of Existing Project Site from Heron's Head Park

Key Viewpoint 5

KVP 5 (Figure 3.2-6) faces east toward the project site from the western sidewalk at the intersection of Innes Avenue, Hunters Point Boulevard, and Hawes Street. Existing short-range views from this location depict an area that is used as an unofficial parking lot. Overhead utility wires combine with street surface edges to create a weak sense of horizontal trending lines. Sparse vegetation in the background presents the only strongly vertical components in the image that have mass. Although the viewpoint faces the Bay, intervening topography and vegetation obstruct views of the water. Textural components of features in this image are dominated by the granular nature of the street pavement, and by the clumped, scattered, and random nature of vegetation.

Source: Square One Productions, 2016

Figure 3.2-6: KVP 5—Eastward View of Existing Project Site from the Intersection of Hunters Point Boulevard, Hudson Avenue, and Hawes Street

Key Viewpoint 6

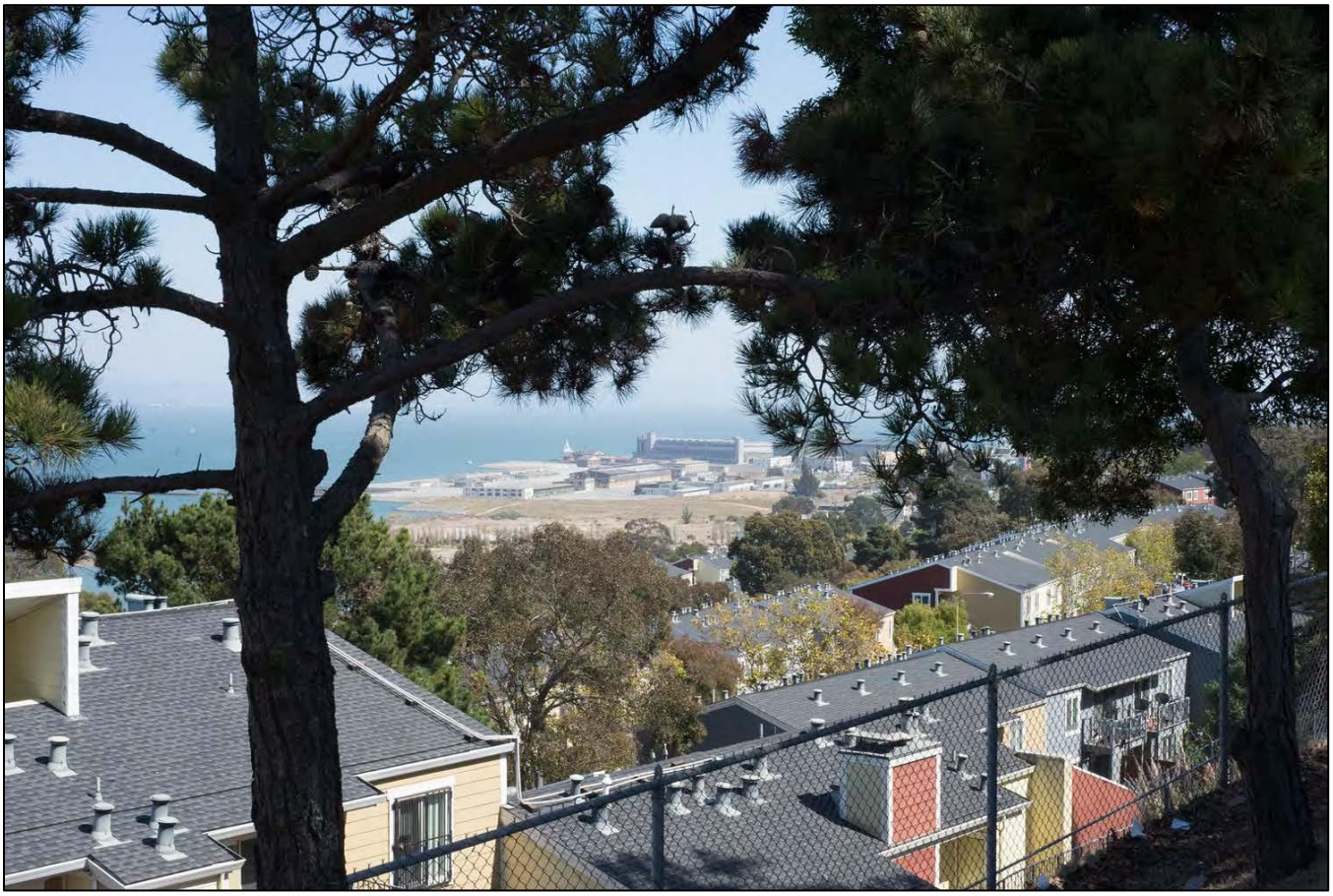
KVP 6 (Figure 3.2-7) faces east toward the project site from the southern sidewalk of Innes Avenue, just west of Griffith Street. This view shows the existing commercial and residential development that lines Innes Avenue. The existing geometric form is typical of a commercially oriented street. Existing building heights range from 12 feet to roughly 50 feet. The existing development encloses the street, drawing the viewer's eye down toward the eastern edge of the project site. Buildings are symmetrical and block-like, but most are not well maintained and the paint and façade treatments are largely washed out, trending toward warm shades of light tan, brown, orange, and green. Surfaces are mostly smooth. Overhead utilities dominate and obstruct clear views toward the sky and upper elevations of structures.

Source: Square One Productions, 2016

Figure 3.2-7: KVP 6—Eastward View of Existing Project Site from Innes Avenue just south of Griffith Street

Key Viewpoint 7

Map 1, "Plan to Strengthen City Pattern through Visually Prominent Landscaping," in the Urban Design Element of the General Plan identifies Hilltop Park as an important vista point to be protected. However, when viewpoints for this analysis were chosen, the project site could not be viewed from Hilltop Park because of intervening trees and construction work. Therefore, a viewpoint just east of Hilltop Park was chosen instead. KVP 7 (Figure 3.2-8) faces east toward the project site from the eastern sidewalk at the intersection of Hudson Avenue and Whitney Young Circle. Long-range views of the project site and Bay are possible from this elevated vantage point. The existing short-range view is dominated by long rectangular residential development in the foreground that gradually transitions to unobstructed mid-range views of the curvilinear shoreline associated with India Shoreline Park. The project site appears in the middle ground as a small, relatively flat expanse where the rough to coarsely grained texture contrasts with the smooth nature of the Bay. Beyond the project site, large industrial buildings at Hunters Point are positioned all the way to the water's edge. The existing view is dominated by two large pine trees, while diagonally trending lines are reinforced by the parallel rooflines, which run north to south.



Source: Square One Productions, 2016

Figure 3.2-8: KVP 7—Southeastward View of Existing Project Site from Intersection of Hudson Avenue and Whitney Young Circle

Key Viewpoint 8

KVP 8 (Figure 3.2-9) faces northwest toward the project site from the southeastern sidewalk along Donahue Street at its intersection with Galvez Avenue. This viewpoint immediately overlooks the future Northside Park and offers typical views that a pedestrian or motorist would encounter while traveling north along Donahue Street. Existing northwesterly views toward the project site are largely unobstructed in the foreground. This enables long-range views of the downtown San Francisco skyline, the Bay Bridge, and Heron's Head Park. Large cranes associated with SF Port protrude from the large industrial complexes and appear as dominant vertical elements. The mid-range view is eclipsed by a wire fence, vegetation, overhead power lines, and a tree. No major structural development is present in short-range views. The site of the approved future Northside Park and the project site are both dominated by nondirectional form and irregular lines. Bare earth mixed with patches of weedy vegetation extends to the edge of the property and the beginning of pavement. This variation contrasts with the uniformly level and smooth surface of the Bay.

Source: Square One Productions, 2016

Figure 3.2-9: KVP 8—Northwestward View of Existing Project Site from Intersection of Donahue Street and Galvez Avenue

Key Viewpoint 9

KVP 9 (Figure 3.2-10) faces north toward the project site from the south side of Innes Avenue at its intersection with Earl Street. This viewpoint offers typical views that a motorist would encounter while traveling west or east along Innes Avenue. Existing northwesterly views toward the project site are dominated by two vehicle lanes in each direction, one- to three-story buildings, overhead power lines, street trees, and parked cars. The buildings along Innes Avenue are varied in height and scale, ranging from approximately 12 to 50 feet tall. Overhead utility wires combined with the inconsistent building heights along Innes Avenue combine to create a weak sense of horizontal trending lines. Although the viewpoint faces Heron's Head Park and the Bay, intervening development obstructs views of the water and the project site.

Source: Square One Productions, 2017

Figure 3.2-10: KVP 9—Northward View of Existing Project Site from the Intersection of Innes Avenue and Earl Street

Light and Glare

In this CEQA context, light is nighttime illumination that stimulates sight and makes things visible, and glare is difficulty seeing in the presence of bright light such as direct or reflected sunlight.

India Basin Area

Existing nighttime light conditions in the India Basin area are typical of urban areas, with street lighting and exterior lighting at residential, public, and commercial structures, entrances, and walkways. Lighting can be seen during the night along street corridors and on buildings in and adjacent to the project site. Most structures surrounding the project site, particularly from Hunters Point Ridge, are residential. Nighttime lighting at surrounding industrial uses is used for safety and security.

Glare in the India Basin area is predominantly limited to the exterior of windows on buildings and cars along Innes Avenue. Sources of glare are considered minor, as windows of both buildings and cars in the India Basin area do not contain reflective glass.

Project Site

Existing levels of light and glare within the project site are described below.

India Basin Shoreline Park Property

The India Basin Shoreline Park property contains no residential or commercial-based structures. Nighttime lighting is limited to safety and security purposes. There are no existing sources of daytime glare.

900 Innes Property

The 900 Innes property contains a few structures. However, these structures do not create daytime glare, as they do not contain many windows or light-colored surfaces. Nighttime lighting on the property is limited to safety and security purposes for the structures. There is some light spillover from the streetlights that line Innes Avenue; however, this spillover is minor and is typical of urban environments.

India Basin Open Space Property

The India Basin Open Space property contains no residential or commercial-based structures. Lighting is limited to safety and security purposes along the trail. There are no existing sources of glare.

700 Innes Property

The 700 Innes property is currently undeveloped except for Arelious Walker Drive, which bisects the property. Streetlights line Arelious Walker Drive. These, along with safety and security lighting along the Blue Greenway/Bay Trail, are the only sources of existing lighting on the property. No other sources of glare exist on the 700 Innes property. Spillover light can be seen from the streetlights that line Innes Avenue; however, this spillover is typical of urban environments.

3.2.2 Regulatory Framework

Federal

There are no federal regulations for visual or scenic resources that would apply to the proposed project or variant.

State

California Environmental Quality Act

CEQA requires that the State take all action necessary to provide the people of the state "with…enjoyment of aesthetic, natural, scenic and historic environmental qualities" (California Public Resources Code, Section 21001[b]).

California Scenic Highway Program

The California Department of Transportation's scenic corridor protection programs include policies intended to preserve the scenic qualities of the highway corridor, including regulation of land use and density of development, detailed land and site planning, control of outdoor advertising (including a ban on billboards), careful attention to and control of earthmoving and landscaping, and careful attention to design and appearance of structures and equipment (California Streets and Highways Code, Section 260 et seq.). According to the California Scenic Highway Mapping System Web site, State Route 1 and Interstate 80 in San Francisco are eligible State Scenic Highways, but neither are officially designated (Caltrans, 2011).

Regional

San Francisco Bay Plan and San Francisco Waterfront Special Area Plan

Certain portions of the project site along the waterfront are within the jurisdiction of the *San Francisco Bay Plan* (Bay Plan) and SF Port. The Bay Plan was adopted by the San Francisco Bay Conservation and Development Commission (BCDC) in 1969 in accordance with the McAteer-Petris Act (California Government Code, Sections 66600–66682). The Bay Plan guides the protection and use of the Bay and its shoreline, and therefore informs future development potential and future visual conditions along the shoreline of the Bay. The plan does not contain any specific goals, policies, or strategies related to visual resources or views within the project site.

San Francisco Bay Conservation and Development Commission Public Access Design Guidelines for the San Francisco Bay

Along the Bay shoreline, BCDC's land use authority relates primarily to public access; however, some of the public-access objectives specifically seek to provide, maintain, and enhance visual access to the Bay and shoreline, and maintain and enhance the visual quality of the Bay, shoreline, and adjacent development. In addition, Chapter IV, "Site-Specific Public Access Improvements," of BCDC's *Shoreline Spaces: Public Access Design Guidelines for the San Francisco Bay* contains specific strategies for development to enhance the visual experience along the shoreline.

Bay Trail Plan

The *Bay Trail Plan* laid the groundwork for establishing the Bay Trail, a regional hiking and bicycling trail around the perimeter of San Francisco and San Pablo bays. The proposed Bay Trail alignment is a 500-mile recreational ring around the Bay. Where feasible, the trail is intended to be close to the shoreline. The trail system is intended to function not only as a recreational corridor but also as a connecting link to inland recreation sites, residential neighborhoods, and employment centers, and to provide restricted access to environmentally sensitive areas. Policies in the Bay Trail Plan fall into five categories: trail alignment, trail design, environmental protection, transportation access, and implementation.

Local

San Francisco General Plan Urban Design Element

The General Plan provides the City's vision for the future of San Francisco. The Urban Design Element (San Francisco, 2010b) is concerned "both with development and with preservation. It is a concerted effort to recognize the positive attributes of the city, to enhance and conserve those attributes, and to improve the living environment where it is less than satisfactory." The Urban Design Element also seeks to protect public views of open space and water bodies, and to protect and enhance the aesthetic character of San Francisco.

The following objectives and policies of the Urban Design Element are particularly relevant to the proposed project and variant:

Objective 1: Emphasis of the characteristic pattern which gives to the city and its neighborhoods an image, a sense of purpose, and a 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 1.6:** Make centers of activity more prominent through design of street features and by other means.

Objective 2: Conservation of resources which provide a sense of nature, continuity with the past, and freedom from overcrowding.

- **Policy 2.6:** Respect the character of older development nearby in the design of new buildings.

Objective 3: Moderation of major new development to complement the city pattern, the resources to be conserved, and the neighborhood environment.

- **Policy 3.2:** Avoid extreme contrasts in color, shape and other characteristics which will cause new buildings to stand out in excess of their public importance.
- **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.

The Urban Design Element of the General Plan includes three maps relevant to the proposed project: "Street Areas Important to Urban Design and Views," "Quality of Street Views," and "Plan to Strengthen City Pattern through Visually Prominent Landscaping." Neither Innes Avenue nor Donahue Street is included on the map "Street Areas Important to Urban Design and Views." Northridge Avenue and Jerrold Avenue in the project vicinity are designated on the "Quality of Street Views" map as having average views. A portion of Evans Avenue and Fairfax Avenue in the project vicinity are designated on the "Quality of Street Views" map as having excellent views. The "Plan to Strengthen City Pattern Through Visually Prominent Landscaping" map identifies Hilltop Park as an important vista point to be protected.

The Recreation and Open Space Element is intended to improve the quality of life in San Francisco communities by providing places for "recreation, activity and engagement, for peace and enjoyment, and for freedom and relief from the built world" (San Francisco, 2014).

- Objective 2, Policy 2.5 of the Recreation and Open Space Element encourages the development of region-serving open spaces in opportunity areas, including the southeastern waterfront.
- Objective 4 promotes protection and enhancement of the biodiversity, habitat value, and ecological integrity of open spaces.

The proposed project and variant would comply with the Recreation and Open Space Element by enhancing existing open spaces on the project site and providing additional public recreational areas, including an extension of the Bay Trail.

The Priority Policies of the General Plan are included in the preamble to the General Plan and are the basis upon which inconsistencies in the General Plan are resolved. The Priority Policy relevant to the proposed project and the variant is:

- Priority Policy 8 states that parks and open space and their access to sunlight and vistas are to be protected from development.

Bayview Hunters Point Area Plan

The *Bayview Hunters Point Area Plan* is an adopted component of the General Plan that serves as a guide to the future development of the Bayview Hunters Point community. The area plan includes sections on Land Use, Transportation, Housing, Industry, Urban Design, Recreation and Open Space, Community Facilities and Services, and Public Safety. The plan excludes Hunters Point Shipyard. The objectives and policies of the *Bayview Hunters Point Area Plan* are designed to preserve and enhance existing residential neighborhoods, enhance the distinctive and positive features of Bayview Hunters Point, and improve the definition of the community's overall urban pattern. The following policies of the *Bayview Hunters Point Area Plan* pertaining to visual resources are relevant to the proposed project and variant:

- **Policy 1.6:** Encourage development of a healthy mix of residential, retail, open space, and small trade shops along Innes Avenue to buffer the India Basin industrial area from the Hunters Point residential community.
- **Policy 5.1:** Preserve and enhance the existing character of residential neighborhoods.
- **Policy 10.1**: Better define Bayview's designated open space areas by enabling appropriate, quality development in surrounding areas.
- **Policy 11.1:** Recognize and enhance the distinctive features of Bayview Hunters Point as an interlocking system of diverse neighborhoods.
- **Policy 13.2**: Assure that new development adjacent to the shoreline capitalizes on the unique waterfront location by improving visual and physical access to the water in conformance with urban design policies.
- **Policy 13.2:** Maintain and improve the quality of existing shoreline open space.
- **Policy 13.3:** Complete the San Francisco Bay Trail around the perimeter of the City which links open space areas along the shoreline and provides for maximum waterfront access. (See Figure 12 [of the *Bayview Hunters Point Area Plan*].)
- **Policy 13.4:** Provide new public open spaces along the shoreline—at Islais Creek, Heron's Head, India Basin, Hunters Point Shipyard, and Candlestick Point/South Basin.

San Francisco Planning Code

The San Francisco Planning Code (Planning Code) incorporates by reference the City's zoning maps, and governs permitted uses, densities, and the configuration of buildings in San Francisco.

- **Use Districts**. The project site is zoned Light Industrial (M-1), Heavy Industrial (M-2), Small-Scale Neighborhood Commercial (NC-2), and Public (P).
  - Under Section 210.5 of the Planning Code, M-1 is a designation intended for smaller industries that are dependent on truck transportation.
  - The M-2 district is the least restricted as to use and is located at the eastern edge of the City, separated from residential and commercial areas. The heavier industries are permitted, with fewer requirements as to screening and enclosure than in M-1 districts, but some uses are permitted only as a conditional use or at some distance from residential districts.
  - Under Section 711.1 of the Planning Code, NC-2 is a land use designation for areas ranging in size from two blocks to many blocks, commonly located along collector and arterial streets that have transit routes. Small-Scale Neighborhood Commercial districts are defined as linear shopping streets that provide convenience goods and services to the surrounding neighborhoods, as well as limited comparison shopping goods for a wider market.
  - Under Section 211 of the Planning Code, the P Zoning District applies to land that is owned by a governmental agency and is in some form of public use, which can include parks and open space.

The proposed uses on the RPD properties (India Basin Shoreline Park, 900 Innes, and India Basin Open Space) would require the RPD properties to be rezoned from M-1 and NC-2 to P through amendments to the General Plan, Planning Code, and Zoning Map. The proposed uses on the BUILD property would require changes to the development controls (including increases in permitted height) through amendments to the General Plan, Planning

Code, and Zoning Map, including an India Basin Special Use District (SUD) and design standards and guidelines (DSG) for the development that will be entitled through the SUD process and a development agreement.

- **Height and Bulk Districts**. The project site is located in 40-X and Open Space (OS) height and bulk districts. The 40-X Height and Bulk District would subject the proposed project or variant to a 40-foot height limit, with no bulk restriction. The OS Height and Bulk District is intended to indicate its principal or exclusive purpose as open space, with future development strictly limited. The 700 Innes property is within the 40-X Height and Bulk District. The proposed uses on the other three project site properties would require changing the 40-X Height and Bulk District to OS through amendments to the General Plan, Planning Code text, and Zoning Map. The proposed project and variant include changes to the development controls (including increases in permitted height) through amendments to the General Plan, Planning Code text, and Zoning Map, including an India Basin SUD and DSG for the development entitled through the SUD process and a development agreement.

- **Reflective Glass (Planning Commission Resolution 9212).** Planning Commission Resolution No. 9212 (1981) established guidelines for proposed building projects. The first guideline states that clear, untinted glass should be used at and near the street level. The second guideline states that mirrored, highly reflective, or densely tinted glass should not be used except as an architectural or decorative element. By prohibiting mirrored or reflective glass, this resolution serves to limit glare.

Bayview Hunters Point Area Plan

The *Bayview Hunters Point Area Plan* (San Francisco, 2010a) includes the following relevant policies that relate to aesthetics:

- **Objective URB.10:** Enhance the distinctive and positive features of Bayview Hunters Point.
- **Objective URB.11:** Improve definition of the overall urban pattern of Bayview Hunters Point.
- **Objective ROS.12:** Provide and maintain adequately located, well designed, fully equipped recreation facilities and encourage their use.
- **Objective ROS.13:** Provide continuous public open space along the shoreline of Bayview Hunters Point unless public access clearly conflicts with maritime uses or other non-open space uses requiring a waterfront location.

India Basin Shoreline Sub-Area Plan

The draft Sub-Area Plan, published in June 2009, is a part of the *Bayview Hunters Point Area Plan,* an area plan of the General Plan. The draft Sub-Area Plan contains objectives (high-level statements regarding a desired end, condition, or state in the plan area) and policies (more specific statements to guide decision making) specific to the vision and future of the India Basin shoreline. Although the draft Sub-Area Plan had not been adopted at the time the NOP for this draft EIR was published, the draft Sub-Area Plan is used as guidance in regard to specific goals and objectives intended to inform the character of future development in the plan area. A summary of community design objectives and policies that pertain to aesthetic and visual resources is presented below.

The draft Sub-Area Plan encourages urban form that reinforces the project site's unique shoreline location and strengthens its sense of place and character. The plan also states that buildings should be of a high design quality to contribute to the natural beauty and character of the built environment. Furthermore, development should create a thoughtful transition between Hunters View and the India Basin shoreline with appropriate land uses. The plan states the following requirements to reduce a sense of overwhelming bulk along Innes Avenue:

- Setbacks at the third story and above for buildings along Innes Avenue,
- Commercial buildings shall be well-articulated by changes in roof lines and vertical planes to reduce the appearance of bulk,
- Architectural details, ornamentation, articulations, and projections should be used to create visual interest from the street, and should create a harmonious building composition. These elements should be consistent across the building, so the building appears as a unified whole, and not as a collection of disjointed or unrelated parts that add to the impression of bulk,

3.2.3 Impacts and Mitigation Measures

Significance Thresholds

The thresholds for determining the significance of impacts in this analysis are consistent with the environmental checklist in Appendix G of the State CEQA Guidelines, which has been modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the proposed project or the variant would result in a significant impact related to aesthetics. Implementation of the proposed project or the variant would have a significant effect on aesthetics if the proposed project or variant would:

- 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 which contribute to a scenic public setting;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare which would adversely affect day or nighttime views in the area or which would substantially impact other people or properties.

Approach to Analysis

Computer-generated visual simulations of the four project site properties and their corresponding build scenarios were used to evaluate potential impacts on the existing aesthetic character and determine how these changes to character might affect existing aesthetic quality. Views of the project site were simulated from KVP 1 through KVP 9. The simulations serve to illustrate how the project may look from these KVPs, once constructed and operational. The simplified visual simulations only depict the general building envelope and form representing the proposed height and mass of proposed buildings; they do not include building fenestration or architectural breakdown of building planes or materials. Because the visual simulations presented below lack details, they may cause the proposed buildings to appear larger in scale than they would once design details are applied to the surfaces that would provide the building character for each view.

The analysis of visual impacts in this section focuses on the nature and magnitude of changes in the visual character of the project site, impacts of the proposed project and variant on scenic views and resources, and impacts from increased light and glare. If the visual character of the proposed project or variant and the existing environment are similar, then the visual compatibility between the existing and proposed conditions will be high. If the visual character of the proposed project or variant strongly contrasts with the existing visual character or with applicable design policies and guidelines, then visual compatibility will be low and significant impacts may result. Relevant urban design policies and guidelines are used to provide conclusions on the significance of project-level and cumulative-level impacts.

Project Features

Both the proposed project and the variant would involve demolishing some of the existing buildings on the project site and constructing a mixed-use development that would include residential, commercial, institutional/ educational, research and development, parking, and open space uses. Implementing the proposed project or variant would result in the development of the largely vacant 39-acre project site with buildings ranging in height from one to 14 stories.

Impact Evaluation

Impact AE-1: The proposed project or variant would not have a substantial adverse effect on scenic vistas or scenic resources. ***(Less than Significant)***

This discussion focuses on impacts on scenic vistas/views across the project site. Mid-range and short-range views (as illustrated in Figures 3.2-11, 3.2-14, 3.2-15, 3.2-16, and 3.2-19 or KVPs 1, 4, 5, 6, and 9) are related to the visual character of the site, rather than scenic vistas, and are discussed under Impact AE-2, below.

As defined above in Section 3.2.1, "Environmental Setting," scenic views of the downtown San Francisco skyline and views of the Bay from the public right-of-way are considered scenic vistas for this analysis. Also described above, scenic resources include the downtown San Francisco skyline, Hunters Point Ridge, Rincon Tower, Treasure and Yerba Buena islands, the Bay Bridge, Heron's Head Park, and the Shipwright's Cottage on the 900 Innes property.

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Construction activities, as described in Section 2.3.11, "Phasing and Construction," would be similar for the proposed project and variant; therefore, the following discussion of construction impacts as they relate to scenic vistas and resources covers both project scenarios.

Short-term visual impacts of construction activities would result from the use of staging areas for grading, excavation, and storage of vehicles and equipment. In addition, temporary structures could be present on the project site during various stages of demolition or construction, in materials storage areas, or associated with construction debris piles on- and off-site. Exposed trenches, roadway bedding (soil and gravel), and spoils/debris piles for the proposed utilities and infrastructure improvements, as well as for roadway improvements, would also

be visible. These temporary changes would be visible to area residents, employees, and visitors during construction of the project, which would occur in phases over multiple years, but for purposes of this EIR, is assumed to be 5 years in order to take a more conservative approach to potential impacts.

Visual changes caused by construction activities are a common and accepted feature of the urban environment, and mitigation is generally not required. Although these activities would take place primarily on the project site, they would be visible to surrounding land uses. However, temporary conditions (e.g., the use of bulldozers, trenching equipment, generators, trucks) during construction of the proposed project or variant would not obstruct a scenic vista, as construction equipment is not tall enough to interfere with views of the Bay or the downtown San Francisco skyline. Scenic resources such as the Shipwright's Cottage and India Basin Shoreline Park would be temporarily affected, but construction of the proposed project or variant would improve both of these resources. Therefore, the impact of construction activities under either the proposed project or variant on scenic vistas and scenic resources would be *less than significant.* No mitigation measures are necessary.

Operation

As analyzed below, a variety of views would be available during operation under the proposed project or variant:

- Views of the downtown San Francisco skyline (KVPs 1 and 8)—see Figures 3.2-11 and 3.2-18.
- Views of Heron's Head Park and Hunters Point Ridge (KVP 4)—see Figure 3.2-14.
- Views of the project site from Innes Avenue (KVPs 1, 5, and 6)—see Figures 3.2-11, 3.2-15, and 3.2-19.
- Views of the Bay from Cleorand Lane, Northridge Road, and Hudson Avenue, residential development areas on Hunters Point Ridge (KVPs 2, 3, and 7)—these areas are higher in elevation, and thus offer more panoramic and unobstructed views toward the Bay. See Figures 3.2-12, 3.2-13, and 3.2-17.

Key Viewpoint 1

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

The India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties would not be visible from this viewpoint; therefore, these properties are not discussed further in relation to KVP 1.

700 Innes Property

KVP 1 faces west toward the project site from the northern corner of the intersection of Innes Avenue and Donahue Street, approximately 350 feet from the location of the future Northside Park. As stated in Section 3.2.1, "Environmental Setting," this viewpoint currently affords long-range scenic views of the downtown San Francisco skyline, the Bay Bridge, and Yerba Buena Island, and mid-range views of Heron's Head Park. The proposed project or variant would include buildings ranging from one to 14 stories (20–160 feet tall). As shown in Figure 3.2-11, the dominant feature of the landscape from this viewpoint becomes the buildings on the 700 Innes property associated with the proposed project or variant. A viewer standing at this position, or along the southern boundary of the future Northside Park, would no longer be able to see long-range views of scenic resources such as the downtown San Francisco skyline or the Bay Bridge. Only minimal, distant long-range views of Yerba Buena Island and mid-range views of the SF Port cranes, the Bay, and Heron's Head Park would remain.

Either the proposed project or the variant would obstruct long-range views of scenic resources in the City, which would conflict with Policy 1.1 of the Urban Design Element of the General Plan. Policy 1.1 strives to "recognize and protect major views in the city, with particular attention to those of open space and water." However, the "Plan to Strengthen City Pattern Through Visually Prominent Landscaping" map in the General Plan's Urban Design Element does not identify this viewpoint from Innes Avenue and Donohue Street as an important vista point to be protected. In addition, although views of the downtown skyline would be obstructed, other views of scenic resources such as the SF Port cranes, Heron's Head Park, and Yerba Buena Island would still be available by looking in other directions out toward the dominant view, which is the Bay. Thus, viewers could geographically orient themselves based on long-range views of the other scenic resources available in the vicinity.

Existing

Proposed Project

Variant

Source: Square One Productions, 2017

Figure 3.2-11: KVP 1—Westward View of Proposed Project and Variant from the Intersection of Innes Avenue and Donahue Street

Key Viewpoint 2

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

The India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties would not be visible from this viewpoint; therefore, these properties are not discussed further in relation to KVP 2.

700 Innes Property

KVP 2 faces north toward the project site from the northern sidewalk of Jerrold Avenue immediately west of Earl Street adjacent to a public greenspace, which is visible in in the short range. From this elevated position on the north side of Hunters Point Ridge, and after introduction of the proposed project or variant, long-range scenic views of the Bay Bridge and Yerba Buena Island and the SF Port cranes would be dominant and unobstructed by project elements. Conversely, mid-range scenic views of the Bay would be partially obstructed under either project scenario. Under the proposed project, a viewer would be able to catch a glimpse of the shoreline through the Beach Lane corridor; however, under the variant, because of the larger scale of proposed development, this view of the shoreline would be completely obstructed by four- to five-story buildings, which would be up to 75 feet tall.

Buildings would generally be shorter under the proposed project than under the variant; the difference in massing is particularly noticeable when viewing Heron's Head Park from this vantage point. The majority of Heron's Head Park would remain visible after the introduction of buildings under the proposed project, but only the tip, which protrudes into the Bay, would be visible under the variant.

As stated above in Section 3.2.2, "Regulatory Framework," Policy 1.1 of the Urban Design Element of the General Plan strives to "recognize and protect major views in the city, with particular attention to those of open space and water." The introduction of proposed project elements would allow for views of the shoreline through the Beach Lane corridor.

Under the variant, mid-range views of the shoreline would be blocked by intervening buildings. Although the project site would be visible from this location against the Bay as a background, the variant would not substantially obstruct views of the Bay or the East Bay hills. The variant would not substantially alter or degrade the scenic quality of the view, as the view already includes the urban setting of San Francisco as the foreground to the Bay.

Existing

Proposed Project

Variant

Source: Square One Productions, 2017

Figure 3.2-12: KVP 2—Northeastward View of Proposed Project and Variant from Jerrold Avenue

Key Viewpoint 3

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

All of the project-related RPD properties (India Basin Shoreline Park, 900 Innes, and India Basin Open Space) would be enhanced for park and open space use. Combined, these properties would create a 14.2-acre network of new and/or improved parkland and open space. A pier and dock with a human-powered boat launch ramp would extend out into the Bay and two piers would be rebuilt offshore of the 900 Innes property. These project elements would serve to improve scenic views toward the Bay from KVP 3 and would not obstruct views of the Shipwright's Cottage or Heron's Head Park.

700 Innes Property

KVP 3 faces northeast toward the project site from the northern sidewalk along Northridge Road, just east of Ingalls Street. As shown in the visual simulations below, the elements of the proposed project or variant would be clearly visible from this viewpoint. Buildings proposed for the 700 Innes property would protrude into the Bay, obstructing a small portion of the shoreline; however, the majority of the Bay shoreline and the tip of Heron's Head Park would be unobstructed. Because the Bay would remain the focal point of this view—and would remain this way after implementation of the proposed project or variant—this view would not be adversely affected.

Existing

Proposed Project

Variant

Source: Square One Productions, 2017

Figure 3.2-13: KVP 3—Eastward View of Proposed Project and Variant from Northridge Road

Key Viewpoint 4

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

All of the project-related RPD properties (India Basin Shoreline Park, 900 Innes, and India Basin Open Space) would be enhanced for park and open space use. Likewise, mid-range views of these properties, and in particular views of the shoreline, would be improved. Implementation of the proposed project or variant would not negatively affect short-range and long-range views from KVP 4.

700 Innes Property

KVP 4 faces south toward the project site from Heron's Head Park. This KVP is situated along a recreational trail that accesses the tip of the park. Short-range views are of tidal mudflats and open water, while the north side of Hunters Point Ridge dominates long-range views. As stated above in Section 3.2.1, "Environmental Setting," Hunters Point Ridge and the Bay are scenic resources that are visible from this viewpoint. As shown in the visual simulations, buildings on the 700 Innes property under either the proposed project or the variant would not obstruct views of these resources. The two potential 14-story towers would protrude above Hunters Point Ridge, but this would not adversely affect views of the ridge.

Existing

Proposed Project

Variant

Source: Square One Productions, 2017

Figure 3.2-14: KVP 4—Southward View of Proposed Project and Variant from Heron's Head Park

Key Viewpoint 5

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

KVP 5 faces east toward the project site from the western sidewalk at the intersection of Hunters Point Boulevard, Hudson Avenue, and Hawes Street. As stated in Section 3.2.1, "Environmental Setting," short-range views are dominated by cars parked in a parking lot. With implementation of the proposed project or variant, this parking lot would become the entrance to the India Basin Shoreline Park and 900 Innes properties, with a 20- to 30-foot trellis welcoming visitors to the site. As shown in these visual simulations, under either project scenario, removal of overhead power lines and grading of intervening topography would improve scenic views of the Bay. The impact of these improvements on this view would generally be beneficial.

700 Innes Property

One- to 14-story buildings, ranging from 15 to 160 feet tall, would be constructed on this property and would be visible from KVP 5. The buildings would not obstruct scenic views of either the Bay, Hunters Point Ridge, or Heron's Head Park, as these scenic resources are not visible from this viewpoint. In addition, the property would be graded to improve sight lines through the 700 Innes property from the north side of Innes Avenue. No scenic views from this viewpoint would be affected by either project scenario.

Existing

Proposed Project

Variant

Source: Square One Productions, 2017

Figure 3.2-15: KVP 5—Southward View of Proposed Project and Variant from the Intersection of Hunters Point Boulevard, Hudson Avenue, and Hawes Street

Key Viewpoint 6

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

KVP 6 faces east toward the project site from the southern sidewalk along Innes Avenue, just south of Griffith Street. As shown in the visual simulations, the fence and overhead utilities would be removed, exposing a person traveling along Innes Avenue to short-range views of the restored Shipwright's Cottage and welcome center, the enhanced India Basin Open Space property, and long-range scenic views of the Bay and the East Bay hills.

700 Innes Property

One- to 14-story buildings ranging from 15 to 160 feet tall would be constructed on the 700 Innes property and would be visible in mid-range views on the right side of KVP 6. Overhead utilities would be removed, which would serve to improve views. In addition, these buildings would not affect scenic views from this viewpoint, a condition that would continue after implementation of the proposed project or variant.

Existing

Proposed Project

Variant

Source: Square One Productions, 2017

Figure 3.2-16: KVP 6—Eastward View of Proposed Project and Variant from Innes Avenue just south of Griffith Street

Key Viewpoint 7

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

KVP 7 faces east toward the project site from the eastern sidewalk at the intersection of Hudson Avenue and Whitney Young Circle. The India Basin Shoreline Park and 900 Innes properties—including the Shipwright's Cottage—would not be visible from this KVP; therefore, these properties are not discussed further as they relate to this view. The India Basin Open Space property can be seen in the mid-range view. However, with implementation of either the proposed project or the variant, this site would be enhanced and the effect on mid- to long-range scenic views of the Bay would generally be positive.

700 Innes Property

Long-range views of the project site and Bay are possible from this elevated vantage point; however, Heron's Head Park is not visible. Buildings associated with the proposed project or variant visible in these visual simulations do not interfere with views of the Bay or the shoreline. Thus, these buildings would not affect scenic views. Current long-range views of industrial buildings would be obstructed by intervening proposed buildings and short-range views would continue to be dominated by two pine trees. Adding the proposed project or variant would not adversely affect scenic views of the Bay or the shoreline.

Existing

Proposed Project

Variant

Source: Square One Productions, 2017

Figure 3.2-17: KVP 7—Eastward View of Proposed Project and Variant from the Intersection of Hudson Avenue and Whitney Young Circle

Key Viewpoint 8

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

KVP 8 faces northwest toward the project site from the southeastern sidewalk at the intersection of Donahue Street and Galvez Avenue, adjacent to the location of the future Northside Park. The India Basin Shoreline Park and 900 Innes properties (including the Shipwright's Cottage) would not be visible from this KVP; therefore, these properties are not discussed further as they relate to this viewpoint.

The India Basin Open Space property is visible in this view, but this property would not include buildings taller than 25 feet. The beer garden/café, located adjacent to the proposed beach, would be visible in mid-range views from this location and would partially obstruct views of the Bay shoreline and Heron's Head Park. However, because the Bay shoreline would be enhanced as part of this project component, and most of Heron's Head Park would remain visible, the overall effect on scenic views of the Bay and Heron's Head Park would generally remain the same. In addition, views of the downtown San Francisco skyline would not be obstructed.

700 Innes Property

This viewpoint immediately overlooks the future Northside Park and offers typical views that a pedestrian or motorist would encounter while traveling north along Donahue Street. After implementation of the proposed project or variant, northwesterly long-range views of the downtown San Francisco skyline would be partially obstructed. However, long-range views of the Bay Bridge, Heron's Head Park, Treasure Island, and Yerba Buena Island would still be available. The tree visible in short-range views would remain, and the presence of the approved future Northside Park would ensure that short-range views of the Bay shoreline would remain. Furthermore, long-range scenic views would generally be preserved.

Existing

Proposed Project

Variant

Source: Square One Productions, 2017

Figure 3.2-18: KVP 8—Northwestward View of Proposed Project and Variant from the Intersection of Donahue Street and Galvez Avenue

Key Viewpoint 9

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

KVP 9 faces north toward the project site from the southern parking lane on Innes Avenue, at the intersection of Innes Avenue and Earl Street. As shown in the visual simulations, the Bay would not be visible from this viewpoint. Additionally, no scenic resources are visible from this viewpoint. Thus, introducing the project components would not interfere with or obstruct scenic views or scenic resources from this viewpoint.

700 Innes Property

One- to 14-story buildings ranging from 15 to 160 feet tall would be constructed on the 700 Innes property and would be visible in mid-range views on the right side of KVP 9. Overhead utilities would be removed, which would serve to improve views of the sky. However, no existing scenic views or resources are visible in this viewpoint. Therefore, introducing buildings under either the proposed project or the variant would not affect scenic vistas or resources.

Existing

Proposed Project

Variant

Source: Square One Productions, 2017

Figure 3.2-19: KVP 9—Northward View of Proposed Project and Variant from the Intersection of Innes Avenue and Earl Street

Overall Impact Conclusion

The proposed project or the variant would obstruct some long-range views of scenic resources when looking toward the City (KVP 1 and KVP 8), which would conflict with Policy 1.1 of the Urban Design Element of the General Plan. Policy 1.1 strives to "recognize and protect major views in the city, with particular attention to those of open space and water." However, the "Plan to Strengthen City Pattern Through Visually Prominent Landscaping" map in the General Plan's Urban Design Element does not identify KVP 1, the viewpoint from Innes Avenue and Donohue Street, as an important vista point that should be protected.

Although views back to the City, particularly of the downtown San Francisco skyline (KVP 1 and KVP 8), would be obstructed from some vantage points, other views of scenic resources such as the SF Port cranes, Heron's Head Park, and Yerba Buena Island (KVP 1, KVP 2, KVP 3, and KVP 8) out toward the Bay—a dominant viewing direction—would still be available. Thus, viewers could geographically orient themselves based on long-range views of the available scenic resources in the project area.

Furthermore, views of scenic resources would be obstructed at only one of the nine key viewpoints (KVP 1) selected by the Planning Department for the analysis. This acknowledges the fact that there are numerous views that can be taken from other vantage points that allow viewers to get views of scenic resources. Therefore, this impact would be *less than significant.* No mitigation measures are necessary.

Impact AE-2: The proposed project or variant would not degrade the existing visual character or quality of the site and its surroundings. *(Less than Significant)*

The following analysis examines the components of the proposed project and variant and their effects on the visual character of their surroundings, including changes to urban form and the scale of development. The discussion below relies on the KVPs and visual simulations depicted in Figures 3.2-11, 3.2-12, 3.2-13, 3.2-14, 3.2-15, 3.2-16, 3.2-17, 3.2-18, and 3.2-19, as these KVPs capture the elements of the proposed project and variant and their surroundings.

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Construction activities, as described in Section 2.3.11, "Phasing and Construction," would be similar for the proposed project and variant; therefore, the following discussion of construction impacts as they relate to the visual character or quality of the site and its surroundings covers both project scenarios.

Visual impacts would result from the use of staging areas for grading, excavation, and storage of construction equipment. In addition, temporary structures could be located on the project site during various stages of construction, in materials storage areas or associated with construction debris piles on-site. Exposed trenches, roadway bedding (soil and gravel), and spoils/debris piles would be visible during construction of the utility infrastructure improvements, resulting in a noncohesive, closed-off construction site. However, adverse visual impacts of construction activity would be temporary. These temporary changes would be visible to area residents, employees, and visitors during construction of the project, which would occur in phases over multiple years, but

for purposes of this EIR, is assumed to be 5 years in order to take a more conservative approach to potential impacts.

As described above, visual changes resulting from construction activities are a common and accepted feature of the urban environment. Thus, for all project site properties, temporary construction impacts of the proposed project or variant on the existing visual character or quality of the site and its surroundings would be *less than significant*.

Although the impact of the proposed project or variant during construction would be less than significant, the project sponsors could further reduce the impacts of an unsightly construction area by implementing Improvement Measure I-AE-1 at the project site properties during the construction of the project, which would occur in phases over multiple years, but for purposes of this EIR is assumed to be 5 years in order to take a more conservative approach to potential impacts.

> **Improvement Measure I-AE-1: Prepare and Implement Construction Staging, Access, and Parking Plan to Reduce Impacts on Visual Character/Quality During Construction.**
>
> *As an improvement measure to further reduce impacts of project construction activities on the visual character/quality of the site, construction documents should require all construction contractors to provide for the cleanliness of construction equipment stored or driven outside of the limits of the construction work area. Construction equipment, including equipment used for staging, should be parked on the project site. Staging areas should be screened from view at street level with solid wood fencing or a green fence for areas under construction for extended periods of time. Before the issuance of building permits, the project sponsors (through the construction contractor[s]) should submit a construction staging, access, and parking plan to the San Francisco Department of Building Inspection for review and approval. Construction worker vehicles should not be parked at on-street parking spaces.*

The project sponsors may agree to implement as part of the project or City decision makers may impose Improvement Measure I-AE-1 as a condition of project approval.

Operation

The proposed project would consist of approximately 275,330 gsf of commercial/institutional uses and 1,240 dwelling units. The variant would consist of up to approximately 1,000,000 gsf of commercial/institutional uses and 500 dwelling units, fewer dwelling units but a greater amount of commercial and institutional uses than under the proposed project. Despite the differences in potential land uses, the tallest buildings under the proposed project and variant would be similar at a maximum of 14 stories, or 160 feet. Likewise, the street orientation and design would be the same. The 14-story buildings would be in the same location under both the proposed project and the variant. Therefore, the following impacts on the existing visual character and quality of the site and its surroundings would be similar for both project scenarios.

India Basin Shoreline Park Property

The 5.6-acre India Basin Shoreline Park property would be redesigned and enhanced for park and open space use. The improvements would include upgraded playground and recreational facilities; restrooms; additional trees;

improved lawn areas; a promenade; event areas; a water feature; barbeque pits; drinking fountains; a pier and dock with human-powered boat launch ramp, art installations, fishing areas, and lighting; restrooms; and an exercise or cross-training course. The land use and topography of the site would stay generally the same, but the quality of new recreational facilities and open space areas would be improved by the upgraded facilities, resulting in a positive effect on the visual character of the park area. Likewise, these improvements would be consistent with Objective 13 in the *Bayview Hunters Point Area Plan*, which aims to maintain and improve access to the shoreline, complete the Bay Trail, and provide new public open spaces along the shoreline.

900 Innes Property

A total of 900 gsf of park-serving commercial uses (concessions in the Shipwright's Cottage and Overlook Building) would be built on the 900 Innes property (Figure 2-4a) and would range up to 20.5 feet in height.

As described above in Section 3.2.1, "Environmental Setting," the 900 Innes property lacks a cohesive development pattern with a variety of small structures that are generally in poor, dilapidated condition. The existing Shipwright's Cottage provides a sense of the property's historic use, but the surrounding development and dilapidated nature of the other structures contribute to an existing character that is strongly industrial and in disrepair. Implementing the proposed project or variant would change the visual character of the site by creating usable open space that would connect this property to the adjacent properties via the Bay Trail/Blue Greenway, the Class 1 bikeway, and multiple pedestrian-only pathways. Preserving the Shipwright's Cottage and rehabilitating the former Boatyard office building would serve to reconnect the public to the history of the shipbuilding industry in India Basin. The resulting changes would be consistent with the *Bayview Hunters Point Area Plan*, which aims to maintain and improve access to the shoreline, complete the Bay Trail, and accentuate the history of activities in the district.

Operation of the proposed project or variant on this property would improve visual character by renovating and preserving the existing Shipwright's Cottage, rehabilitating the former Boatyard office building, preserving the property's sense of historic use, and improving the open space, while removing other dilapidated structures.

India Basin Open Space Property

Under either the proposed project or the variant, the India Basin Open Space property would be restored as tidal marsh wetlands to help adapt to anticipated sea-level rise and provide habitat migration opportunities. At the northwest corner of the property, RPD would remove an existing pier and associated piles and construct 2,000 gsf of commercial uses (a café, maintenance facility, rentals, and concessions). The Blue Greenway/Bay Trail path on this property would be enhanced and would connect to the India Basin Shoreline Park and 900 Innes properties. The site would undergo restoration with improvements consisting of sand dunes, bird islands, a recreational beach area, a boat launch (directly from the land), a bioengineered breakwater, brackish lagoons, scrub upland planting, tree stands for wind buffering, and new wetlands and ponds. These elements would help create an interconnected network of open space and trails that would improve the area's character, consistent with *Bayview Hunters Point Area Plan* policies related to open space.

700 Innes Property

Buildings on the 700 Innes property would range from one to 14 stories (20–160 feet tall) (Figures 2-4b, 2-5a, and 2-6a) and would support residential, commercial, institutional, and public uses. Visual simulations of the massing and layout of these buildings can be seen in Figures 3.2-11 to 3.2-19.

As described in Section 3.2.1, "Environmental Setting," much of the development south of the project site (e.g., along Cleo Rand Lane and Donahue Street) either has been constructed within the past 30 years or is currently undergoing construction as part of the Candlestick Point–Hunters Point Shipyard project. These contemporary buildings are slightly taller and denser than the buildings to the north along Northridge Road, which were constructed before 1943. Residences along Northridge Road feature unadorned façades and a regular pattern of fenestration, and are more uniform in appearance than the development south of the project site along Cleo Rand Lane and the Candlestick Point–Hunters Point Shipyard project along Donahue Street.

Furthermore, the Innes Avenue corridor consists of undeveloped and steep inclines to the west, low- to mid-scale apartment buildings constructed before 1950, and few commercial uses. Along the western edge of the project site, along Innes Avenue, low-to mid-scale apartment buildings (approximately 40–50 feet tall) are interspersed with temporary fencing demarcating vacant lots and one-story commercial buildings. As a result, the project site and its surroundings generally lack a cohesive visual form, which does not contribute to an easily identifiable neighborhood.

As shown in Figure 3.2-16 and Figure 3.2-19, implementing the proposed project or variant would substantially transform the visual character of the site. Existing Arelious Walker Drive, which currently runs in a north-south direction through the site, would be shortened to connect to a newly configured New Hudson Avenue. Griffith Street would be reoriented south to connect to New Hudson Avenue, and would be called New Griffith Street. Earl Street would be regraded and shifted southeast to meet City standards for vehicular access, descending from Innes Avenue and connecting with New Hudson Avenue and to the India Basin Open Space property. Hudson Avenue between the northern border of the 700 Innes property and Hunters Point Boulevard would be vacated and converted to parkland. Connecting existing Arelious Walker Drive and Griffith Street via New Hudson Avenue would convert these streets from dead-ends to through streets and improve circulation throughout the project site.

Along Innes Avenue, the pattern of scattered building frontages, ranging from one to four stories (12–50 feet tall), would be changed to be more continuous, as seen in Figures 3.2-11, 3.2-16, and 3.2-19. After implementation of the proposed project or variant, the buildings along Innes Avenue would be a maximum of 160 feet tall and existing vacant frontages would be filled in by new buildings or pedestrian pathways. Buildings along Innes would generally be the same height under either the proposed project or the variant; however, one building located along Innes Avenue, between Earl Street and Arelious Walker Drive, would be six stories under the proposed project and four stories under the variant. Another building located on Innes Avenue, between Arelious Walker Drive and Griffith Street, would be four stories under the proposed project, and three stories under the variant.

Because the existing visual setting is diverse and relatively noncohesive, the proposed project or variant would not introduce a new visual element that is inconsistent with an established cohesive visual pattern of development. As discussed above, the existing project site is not characterized by a high degree of visual continuity with the

neighboring properties to the north, east, south, and west. This condition would continue with implementation of the proposed project or variant.

The draft Sub-Area Plan for the India Basin area encourages urban form that reinforces the project site's unique shoreline location and strengthens its sense of place and character, including a thoughtful transition between Hunters View and the India Basin shoreline with appropriate land uses. The plan also states that buildings should be of a high design quality to contribute to the natural beauty and character of the built environment and should be designed to reduce the sense of bulk along Innes Avenue. The proposed project or variant would introduce taller and denser development to the project site increasing building heights and the density of development. Buildings along Innes Avenue would be taller and bulkier since they would be located near transit nodes, but would step down gradually towards the waterfront, accentuating the India Basin topography. Setbacks outlined in the Sub-Area Plan would be implemented to engage the street with pedestrian-oriented uses on building frontages. Setbacks would reduce a pedestrian's sense of bulk caused by taller and larger buildings fronting Innes Avenue and would not be inconsistent with the draft Sub-Area Plan, which calls for high design quality, a strengthened sense of place, reducing a pedestrian's sense of bulk along Innes Avenue, and a thoughtful transition from development on the hillside to appropriate land uses along the shoreline.

As stated above, the proposed changes would not be inconsistent with established objectives and policies outlined in the *Bayview Hunters Point Area Plan* and the Urban Design Element of the General Plan. In addition, the project design would further other policies aim to maintain and improve access to the shoreline, preserve open spaces, complete the Bay Trail, and accentuate the history of activities in the district. As described in Chapter 2.0, "Project Description," the proposed project and variant would be subject to development controls established in the India Basin SUD, the DSG, the development agreement, and design review of each phase by the Planning Director and/or Planning Commission.

The design standards and guidelines are included in Appendix B of this EIR. The DSG would be based on existing planning objectives for the area and would reflect the City's long-term vision for the visual character and quality of the project site. As a regulatory document, the DSG document is intended to enhance visual quality in the project area. The DSG would inform the design and review of specific development projects in the project area. If the proposed DSG are adopted by the decision-makers, they would reflect the City's long-term vision for the visual character and quality of the project area. The proposed project or the variant would not be inconsistent the Sub-Area Plan because the DSG include

Changes in visual character, even substantial and transformative changes such as those that would result from implementation of the India Basin SUD, do not constitute a significant adverse impact on visual character under CEQA unless they would substantially degrade the existing visual character or quality of the site and its surroundings. With implementation of approved design guidelines, the proposed project or variant would carry out existing design policies and objectives and implement the City's long-term vision for the visual character of the project site. For these reasons the project would not cause a significant adverse impact on the visual character and quality of the project site and its surroundings.

Overall Impact Conclusion

At the India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties, the project site's visual character and quality would generally be improved by property improvements including new facilities. The

700 Innes property design standards and guidelines that would be applied to the site would be based on existing planning objectives for the area and would reflect the City's long-term vision for the visual character and quality of the project site. Therefore, the overall impact of the proposed project or variant on the existing visual character or quality of the project site and its surroundings would be *less than significant.* No mitigation measures are necessary.

Impact AE-3: The proposed project or variant would create a new source of substantial light or glare that would adversely affect day or nighttime views in the area or would substantially affect other people or properties. *(Less than Significant with Mitigation)*

Construction

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

Construction activities, as described in Section 2.3.11, "Phasing and Construction," would be similar for the proposed project and variant; therefore, the following discussion of construction impacts as they relate to light or glare covers both project scenarios.

Construction would occur during daylight hours, generally between 7:00 a.m. and 8:00 p.m. or as otherwise allowed by the City (see Section 3.6, "Noise," for a discussion of Article 29, Section 2908 of the San Francisco Police Code). A minimal amount of glare could result as truck windows reflect sunlight, but this glare would be negligible and would not affect daytime views in the area. Security lighting would be provided after hours on all construction sites; however, this lighting would be minimal, would be restricted to the project site, and would not exceed existing night lighting levels in urban areas. Therefore, at all four project site properties, the construction impact of the proposed project or variant related to a new source of substantial light or glare would be *less than significant.* No mitigation measures are necessary.

Operation

India Basin Shoreline Park Property

New Light Sources

The India Basin Shoreline Park property would include upgraded playground and recreational facilities; restrooms; additional trees; improved lawn areas; a promenade; event areas; a water feature; barbeque pits; drinking fountains; a pier and dock with a human-powered boat launch ramp, art installations, fishing areas, and lighting; restrooms; and an exercise or cross-training course. New sources of light would not differ substantially from lighting sources used for the existing park. In addition, light levels on this property would not exceed levels commonly accepted by residents in an urban setting.

Daytime Glare

The buildings proposed as part of this enhanced park could include windows, which would be a new potential source of glare added to the project site during the daytime. However, Planning Commission Resolution 9212 prohibits the use of mirrored or reflective glass in new buildings, so glare effects would not be substantial.

900 Innes Property

A total of 900 gsf of park-serving commercial uses (concessions in the Shipwright's Cottage and Overlook Building) would be built on the 900 Innes property (Figure 2-3a) and would range up to 20.5 feet in height. The light and glare impacts from implementing these project components would be similar to those described for operation of the India Basin Shoreline Park property.

India Basin Open Space Property

The proposed project or variant would construct 2,000 gsf of commercial uses (a café, maintenance facility, rentals, and concessions) at the India Basin Open Space property. The Blue Greenway/Bay Trail path on this property would be enhanced and would connect to the India Basin Shoreline Park and 900 Innes properties. New sources of light would be created by potential nighttime lighting for the network of trails. New sources of glare would be created by the café, maintenance facility, rentals, and concession building. The light and glare impacts would be similar to those described above for the India Basin Shoreline Park and 900 Innes properties.

700 Innes Property

New Light Sources

Buildings on the 700 Innes property would range from one to 14 stories (20–160 feet tall) (Figures 2-4b, 2-5a, and 2-6a) and would support residential, commercial, institutional, and public uses. Figures 3.2-11 through 3.2-19 present visual simulations of the massing and layout of these buildings.

New sources of light would be created by neighborhood retail uses during the evening and by residential uses at night. The new light sources would be typical of urban development elsewhere in San Francisco; however, the operational impact of either the proposed project or the variant at the 700 Innes property related to new light sources could be significant.

Daytime Glare

The buildings proposed for the 700 Innes property could include windows and light-colored surfaces, which would be a new potential source of daytime glare on this property. Planning Commission Resolution 9212 prohibits the use of mirrored or reflective glass in new buildings.

Overall Impact Conclusion

New sources of light would not differ substantially from lighting sources used for the existing India Basin Shoreline Park, 900 Innes, or India Basin Open Space properties. In addition, light levels on these properties would not exceed levels commonly accepted by residents in an urban setting. On the 700 Innes property, there would be new sources of light and glare typically found in other urban neighborhoods in San Francisco, resulting in an impact.

Mitigation Measure M-AE-3 would ensure that light levels from development of up to 14-story structures on this property would not exceed levels commonly accepted by residents in an urban setting.

Mitigation Measure M-AE-3: Develop a Lighting Plan for Approval by the San Francisco Planning Department

The project sponsor of the 700 Innes property shall develop a lighting plan for that property, subject to approval by the Planning Department, to address light spillover during operation of the proposed project or variant. The lighting plan shall include the following measures, which would reduce the impact of new lighting sources at the 700 Innes property:

- *Professionally recommended lighting levels for each activity shall be designed by a professional electrical consulting engineer to meet minimum illumination levels while preventing over-lighting and reducing electricity consumption.*
- *The location, height, cutoff, and angle of all lighting shall be correctly focused on the project site to avoid directing light at neighboring areas.*
- *Shielded fixtures with efficient light bulbs shall be used in uncovered parking areas to prevent any glare and light spillage beyond the property line.*

Implementing Mitigation Measure M-AE-3 would reduce the significant impact of the proposed project or variant to *less than significant with mitigation.*

3.2.4 Cumulative Impacts

Impact-C-AE-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would not substantially contribute to cumulative impacts related to aesthetics. *(Less than Significant with Mitigation)*

The geographic context for the analysis of visual impacts varies depending on the impact area analyzed. For example, the context for an analysis of scenic vistas would encompass a broader geographic area than an analysis of visual character or light and glare. The applicable geographic context for each significance threshold analyzed is described below.

Construction

Visual Character

Because visual impacts during construction are temporary, the geographic context for construction impacts is site-specific. The geographic context for the analysis of cumulative construction impacts on aesthetics is limited to the cumulative projects identified in Table 3-1 that are in the immediate vicinity of the project site and could be seen together, assuming concurrent construction activities. These projects could include Candlestick Point–Hunters Point Shipyard (Phases I and II), Hunters View, and ongoing construction activities at the PG&E Hunters Point Shoreline Area. Construction activities for these projects in the defined area would not obstruct any scenic vistas or scenic resources and would be temporary. The cumulative impact on visual character during construction would be *less than significant.* No mitigation measures are necessary.

Lighting and Glare

Construction of cumulative projects would generally occur during daylight hours, between 7:00 a.m. and 8:00 p.m. or as otherwise allowed by the City. A negligible amount of glare could result as truck windows reflect sunlight, but this would not affect daytime views in the area. In all, the impact of lighting and glare produced by construction of the cumulative projects would be *less than significant.* No mitigation measures are necessary.

Overall Cumulative Construction Impact

The impacts of construction of the cumulative projects listed above related to scenic views and resources, visual character, and light and glare would not result in a significant cumulative impact related to visual resources. Therefore, the construction-related cumulative impact on visual resources would be *less than significant.* No mitigation measures are necessary.

Operation

Effects on Scenic Vistas

The geographic context for the analysis of cumulative operational impacts on scenic vistas is the area covered by the *Draft India Basin Shoreline Plan* as well as the *Hunters Point Shipyard Area Plan* area, because development in those plan areas could affect the same scenic vistas as analyzed for the proposed project and variant. Reasonably foreseeable future development could include the proposed project and variant, Candlestick Point–Hunters Point Shipyard (Phases I and II), Hunters View, ongoing construction activities at the PG&E Hunters Point Shoreline Area, and the *India Basin Transportation Action Plan*. The areas described by these plans contain a mixture of residential, commercial, and industrial land uses. Past and present development in these areas is described above in Section 3.2.1, "Environmental Setting," representing baseline conditions for the evaluation of cumulative impacts on scenic vistas. As described above, scenic vistas that could be affected include the downtown San Francisco skyline and the Bay. One or more of the cumulative projects could obstruct scenic vistas from various public vantage points, depending on the height, massing, and density of future development in the area. As a result, this would be a significant cumulative impact.

The proposed project or variant would affect views of scenic vistas from certain public locations (e.g., views of the downtown San Francisco skyline and the Bay Bridge would be blocked when standing at the corner of Innes Avenue and Donahue Street). Although these views would be obstructed from this vantage point, other views of scenic resources such as the SF Port cranes, Heron's Head Park, and Yerba Buena Island out to the Bay would still be available. Thus, viewers could geographically orient themselves based on these long-range views. Furthermore, views of scenic resources would be obstructed at only one of nine key viewpoints (KVP 1) selected by the Planning Department.

Because the proposed project or variant and the cumulative projects listed above would be subject to design review by the Planning Department to ensure their consistency with the General Plan, the proposed project or variant would not make a cumulatively considerable contribution to the significant cumulative impact. Therefore, the cumulative impact of the proposed project and variant related to scenic vistas would be *less than significant.* No mitigation measures are necessary.

Effects on Scenic Resources

The geographic context for the analysis of cumulative operational impacts on scenic resources is the same as the area defined above for cumulative operational impacts on scenic vistas. Likewise, reasonably foreseeable future development projects considered in this analysis are the same as those listed above.

Policies in the General Plan's Urban Design Element guide development near major topographic features, such as substantial hills and ridgelines, to prevent development from overwhelming the land form and adversely affecting these features. The cumulative projects would comply with these policies, in addition to seeking project-specific approvals from the Planning Director and/or Planning Commission. By conforming to these guidelines, the cumulative projects would not substantially block views from publicly accessible locations of scenic resources such as the downtown San Francisco skyline, Hunters Point Ridge, Treasure and Yerba Buena islands, the Bay Bridge, and the Shipwright's Cottage on the 900 Innes property. Thus, the cumulative projects would be consistent with the City's long-term vision for the project site. The cumulative impact related to scenic resources would be *less than significant.* No mitigation measures are necessary.

Effects on Visual Character and Quality

The geographic context for the analysis of cumulative operational impacts on visual character and quality is the same as the area defined above for cumulative operational impacts on scenic vistas and scenic resources, and would include the same development projects. As noted above, the project site and surrounding area do not have a high degree of visual continuity. By eliminating less compatible land uses such as industrial uses and replacing them with mixed uses, including residential, the area would become more cohesive. In addition, cumulative development projects would conform to the guidelines in the General Plan's Urban Design Element and would seek project-specific approvals from the Planning Director and/or Planning Commission, which would ensure consistency with the City's long-term vision for the project site. Therefore, the cumulative impact of the identified cumulative development projects on visual character and quality would be *less than significant.* No mitigation measures are necessary.

Effects of Light and Glare

The geographic context for the analysis of cumulative operational impacts related to light and glare is the same as the area defined above for cumulative operational impacts on scenic vistas, scenic resources, and visual character and quality, and would include the same development projects. Development of cumulative projects in the areas identified above would result in increased sources of light and glare from building and street lighting, parking lot lighting, vehicle headlights, and increased building surfaces. The cumulative projects could generate additional night lighting and daytime glare, resulting in a significant cumulative impact before mitigation.

Buildout of these projects would occur in accordance with the *Draft India Basin Shoreline Plan*, the *Hunters Point Shipyard Area Plan*, and the guidelines in the General Plan's Urban Design Element. In addition, the project would be compliant with Planning Commission Resolution 9212, which prohibits the use of mirrored or reflective glass in new buildings. Nevertheless, other cumulative projects could generate substantial additional light and glare and the project could make a considerable contribution to this cumulative effect. The project's significant effect on light and glare, caused by development at 700 Innes, would be mitigated by implementation of Mitigation Measure M-AE-3. With adherence to these guidelines and requirements and implementation of

Mitigation Measure M-AE-3, the contribution of the proposed project or variant to the significant cumulative impact would not be cumulatively considerable. Therefore, the cumulative impact of the proposed project or variant related to light and glare would be *less than significant with mitigation.*

3.2.5 References

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———. 2010b. *San Francisco General Plan,* Urban Design Element. Amendments by Board of Supervisors Ordinance 101193 adopted on December 7, 2010. San Francisco, CA.

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3.3 POPULATION AND HOUSING

This section describes the existing environmental and regulatory setting related to population, housing, and employment and addresses the potential impacts of the proposed project and variant.

Comments regarding population, housing, and employment were received during the public scoping period in response to the Notice of Preparation (NOP), covering topics that included gentrification, the type and affordability of housing, and the changing character of the neighborhood. These comments are addressed in Chapter 5.0, "Other CEQA Considerations."

3.3.1 Environmental Setting

Population

Regional

The Association of Bay Area Governments (ABAG) conducts long-term forecasts of population, households, and employment for the nine-county[1] San Francisco Bay Area (Bay Area) to project growth in the region. The Bay Area has experienced population growth over the past several decades, and that growth is expected to continue into the foreseeable future. ABAG's *Projections 2013* estimates that approximately 7,150,700 residents were living in the Bay Area in 2010. ABAG projects that the Bay Area's population will grow by 9 percent each decade between 2010 and 2040, or approximately 716,120 new residents each decade (ABAG, 2013).

The City and County of San Francisco (City) has grown faster since 2010 than between 2000 and 2010. Specifically, the population grew approximately 1 percent per year between 2010 and 2014, compared to approximately 0.4 percent per year between 2000 and 2010. The 2000–2010 slowdown in population growth occurred after the decade between 1990 and 2000, when San Francisco's population growth rate was approximately 0.7 percent (ABAG, 2015).

The Planning Department published growth expectations in the 2014 Housing Element, which forecasts that the City will have a population of 981,800, 413,370 households, and 707,670 jobs in 2030. In addition, the nine-county Bay Area is expected to add 209,430 jobs, 17 percent of which San Francisco plans to provide (San Francisco, 2015).

Study Area

The project site is part of the larger Bayview Hunters Point neighborhood, as identified in the *San Francisco General Plan* (General Plan), and is located within U.S. Census Bureau Tract 231.03. For this EIR section, the study area is defined as U.S. Census Bureau Tract 231.03 (Figure 3.3-1). This section uses estimates from the U.S. Census Bureau's American Community Survey (ACS), which produces estimates of the population, demographics, and housing units on a yearly basis. The ACS 5-year estimates, which utilize 60 months of collected data, are considered more reliable than the 1- and 3-year estimates (with 12 months and 36 months, respectively, of collected data), also produced annually by the U.S. Census Bureau; therefore, the 5-year estimates are used in this EIR section.

[1] The Bay Area is defined as the nine counties that make up the region: Marin, Sonoma, Napa, Solano, Contra Costa, Alameda, Santa Clara, San Mateo, and San Francisco counties.

Sources: Data compiled by AECOM in 2016; U.S. Census Bureau, 2016

Figure 3.3-1 **Census Tract Study Area**

Table 3.3-1 presents ACS 5-year population estimates for the study area (U.S. Census Bureau Tract 231.03) and the City. As shown, the ACS estimated the 2014 populations of the study area and the City to be 2,934 and 829,072, respectively (U.S. Census Bureau, 2016). Note that the project site contains four residential units and has a population of six people. Table 3.3-1 also shows that the study area tends to have more residents per housing unit, 2.8 residents per housing unit, than the City and County of San Francisco as a whole, which has 2.4 residents per housing unit (U.S. Census Bureau, 2016).

Table 3.3-1: Population of the Project Site, Study Area, and City and County of San Francisco in 2014

	Population	Occupied Housing Units	Persons per Occupied Housing Unit
Project Site[1]	6[2]	4[2]	1
Study Area	2,934	1,042	2.8
City and County of San Francisco	829,072	348,832	2.4

[1] The project site consists of the India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes properties.
[2] Sources: Pash, pers. comm., 2016; U.S. Census Bureau, 2016
Source: Data compiled by AECOM in 2016 and 2017

Project Site

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

The India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties do not have a permanent population.

700 Innes Property

The 700 Innes property is generally undeveloped and nearly vacant, with two currently occupied residential buildings, located at 702 Earl Street and 838-840 Innes Avenue. With these two buildings, the project site has a population of six people.

Housing

Regional

Growth in the Bay Area's housing supply slowed down between 2010 and 2014 compared to previous decades, likely in part because of the effects of the Great Recession.[2] Specifically, the Bay Area added an average of 9,600 units per year between 2010 and 2014, compared to an average of 23,200 units per year between 2000 and 2010. During the 1990s, the Bay Area averaged an additional 18,700 units per year (ABAG, 2015).

The supply of single-family housing units in the City came to a virtual standstill between 2010 and 2014, with just 15 single-family dwellings added within the City limits during that time; however, the City added an average of 1,328 units per year in multifamily buildings between 2010 and 2013. Between 2000 and 2009, the City experienced faster growth, adding an average of 2,891 units per year (ABAG, 2015).

[2] The Great Recession was a period of general economic decline that occurred during 2007–2009.

Study Area

The study area has 952 renter-occupied housing units, 90 owner-occupied housing units, and 83 vacant housing units (Table 3.3-2). The study area's housing characteristics differ from those of the City as a whole because the study area has a higher proportion of rental units than the rest of the City (91 percent versus 63 percent) (U.S. Census Bureau, 2016).

Table 3.3-2: Housing Units at the Project Site, in the Study Area, and in the City and County of San Francisco in 2014

	Occupied				
	Renter-Occupied		Owner-Occupied		
	#	%	#	%	Vacant
Project Site[1]	4[2]	100%	1	0	0
Study Area	952	91%	90	9%	83
City and County of San Francisco	221,143	63%	127,689	37%	31,686

[1] The project site consists of the India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes properties.
[2] Sources: Pash, pers. comm., 2016; U.S. Census Bureau, 2016
Source: Data compiled by AECOM in 2016 and 2017

Project Site

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

The India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties do not have any housing units.

700 Innes Property

Two parcels on the project site, both located on the 700 Innes property, contain residential units: 702 Earl Street and 838-840 Innes Avenue (Figure 3.3-1). These two parcels have a total of four housing units (Pash, pers. comm., 2016).

Employment

Regional

The region has experienced a strong recovery since the 2007–2009 Great Recession, with job growth proceeding at a pace greater than that experienced by the State of California or the United States as a whole. By mid-2013, the Bay Area had regained all of the jobs lost during the Great Recession. However, if 2000 is used as the baseline year, the average rate of growth is much less—close to zero since the peak of the dot-com boom era. (ABAG, 2015).

The City's average annual employment has grown substantially since 2010, when total employment was approximately 538,500. ABAG estimates that in 2014, the City had employment averaging approximately

634,692, which is higher than the 2000 average employment (604,200) and represents the highest average employment in the City since 1990[3] (ABAG, 2015).

Study Area

Employment in the Bayview Hunters Point neighborhood has historically been centered on industrial uses. The neighborhood contains more than 1,000 establishments and provides almost 15,000 jobs (San Francisco, 2010). As shown in Table 3.3-3, the study area—the geographic area contained by U.S. Census Bureau Tract 231.03—had a substantially higher unemployment rate than the City and County of San Francisco as a whole (30.4 percent versus 7 percent) (U.S. Census Bureau, 2016).

Table 3.3-3: Total Employment for the Project Site, Study Area, and City and County of San Francisco in 2014

	Total Population 16 Years and Over[1]	In Labor Force	Employed	Unemployment Rate
Project Site[2]	43[3,4]	N/A	N/A	N/A
Study Area	1,736	48.8%	34%	30.4%
San Francisco	729,309	69.3%	64%	7%

Notes:
N/A = not available
1 Persons under the age of 16 are not legally authorized to work in the United States.
2 The project site consists of the India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes properties.
3 Source: Avril, pers. comm., 2016
4 Sources: Pash, pers. comm., 2016; U.S. Census Bureau, 2016
Source: Data compiled by AECOM in 2016 and 2017

Project Site

India Basin Shoreline Park Property

Two part-time RPD employees work at the India Basin Shoreline Park property (Avril, pers. comm., 2017).

900 Innes and India Basin Open Space Property

No employees work at the 900 Innes property and one part-time RPD employee works at the India Basin Open Space property (Avril, pers. comm., 2017).

700 Innes Property

As stated in Table 2-2 in Chapter 2.0, "Project Description," 702 Earl Street contains a residential use and a workshop/studio, and 888 Innes Avenue is currently used for industrial/production purposes. These two parcels at the 700 Innes property, referred to in Figure 2-2 as the "Hamman Site" and the "Zebra," respectively, employ approximately 40 people (Pash, pers. comm., 2016).

[3] ABAG's *State of the Region 2015* report uses 1990 as a baseline year. The report does not include demographic, employment, or housing statistics older than 1990.

3.3.2 Regulatory Framework

Federal

No federal plans, policies, regulations, or laws related to population, housing, and employment are applicable to the proposed project or variant.

State

No State plans, policies, regulations, or laws related to population, housing, and employment are applicable to the proposed project or variant.

Local

Regional Housing Needs Assessment

Acting in coordination with the California Department of Housing and Community Development, ABAG determines the Bay Area's regional housing need based on regional trends, projected job growth, and existing needs. San Francisco's fair share of the regional housing need for January 2015 through June 2022 was calculated as 28,870 units, or about 3,850 units per year. The Regional Housing Needs Assessment determination includes production targets addressing the housing needs of a range of household income categories. A total of about 16,333 units, or 57 percent of the Regional Housing Needs Assessment target, must be affordable to households making up to 120 percent of the area's median income. The U.S. Department of Housing and Urban Development determines the annual area median income for the San Francisco Primary Metropolitan Statistical Area, which includes the counties of San Francisco, Marin, and San Mateo. In 2014, the area's median income for a single-person household was almost $68,000 and $97,100 for a household of four people.

San Francisco Citywide Inclusionary Housing Program

Section 415 of the San Francisco Planning Code, the Inclusionary Affordable Housing Program, requires residential developments with 10 or more units to pay an affordable-housing fee. Project sponsors may apply for an alternative to the fee in the form of providing a certain percentage of their units on-site or off-site as affordable to low- to moderate-income households.

San Francisco General Plan

The General Plan, adopted by the San Francisco Planning Commission and the Board of Supervisors, provides general policies and objectives to guide land use decisions. The General Plan is the embodiment of the City's collective vision for the future of San Francisco, and comprises 10 elements, each dealing with a particular topic, that apply citywide. The General Plan contains the following elements: Air Quality, Arts, Commerce and Industry, Community Facilities, Community Safety, Environmental Protection, Housing, Recreation and Open Space, Transportation, and Urban Design.

The Housing Element provides objectives and policies that promote and direct the development of housing in appropriate locations in a manner that enhances existing neighborhood character, locates infill housing on appropriate sites in established residential neighborhoods, and increases the supply of housing. The 2014 Housing

Element focuses on goals, objectives, and policies to foster the development of housing in San Francisco that meets a range of needs related to affordability, housing type, and location. The proposed project and the variant would be consistent with the applicable objectives and policies of the Housing Element because they would promote permanent affordable housing, improve the conditions of existing public housing, and consider the proximity of quality-of-life elements such as open space, child care, and neighborhood services.

The San Francisco Housing Element details objectives and policies that address this growing housing demand. The focus is on strategies that can be accomplished within the City's limited land supply and that meet the housing goals developed during community outreach, which include:

- prioritizing permanently affordable housing;
- recognizing and preserving neighborhood character;
- integrating housing, jobs, transportation and infrastructure; and
- continuing to be a regional model of sustainability.

Bayview Hunters Point Area Plan

The San Francisco Planning Department (Planning Department) prepared the 2006 edition of the *Bayview Hunters Point Area Plan* to approve redevelopment actions that added approximately 1,500 acres to the existing Hunters Point plan and created the new Bayview Hunters Point project area. The redevelopment plan, amended in 2006, seeks to alleviate blight throughout the Bayview Hunters Point project area and includes programs for affordable housing, economic development, and community enhancement. This 2010 edition of the *Bayview Hunters Point Area Plan* reflects the approval of the Candlestick Point–Hunters Point Phase II Shipyard Development Plan project as set forth in Proposition G. Plan amendments reflect the change in nature of the Candlestick Point activity node, including the desire to create a vibrant high-density, mixed-use neighborhood to fully realize its shoreline location and help revitalize the Bayview. The principal objectives in the *Bayview Hunters Point Area Plan* related to population, housing, and employment are summarized below.

Commerce: Improve the vitality of shopping areas and attract commercial investment for the greater convenience of the people who live and work in Bayview.

Housing: Preserve existing housing and homeownership patterns, and promote major growth in new housing at price levels, types of construction, and locations that offer maximum choice to a majority of existing Bayview residents.

Industry: Maintain and fully utilize existing industrial areas to better meet the City's and Bayview's economic needs, and achieve a closer linkage between the employment and investment opportunities created in the industrial areas and the employment and entrepreneurial needs in the Bayview Hunters Point community.

3.3.3 Impacts and Mitigation Measures

Significance Thresholds

The thresholds for determining the significance of impacts in this analysis are consistent with the environmental checklist in Appendix G of the State CEQA Guidelines, which has been modified by the San Francisco Planning

Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the proposed project or the variant would result in a significant impact related to population and housing. Implementation of the proposed project or the variant would have a significant effect on population and housing if the proposed project or variant would:

- 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; or
- displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

Approach to Analysis

State 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 this growth is unplanned and results in significant physical impacts on the environment. Thus, the growth and changes in employment and population and the potential demand for housing that would occur with implementation of the proposed project or variant would not be adverse physical impacts in and of themselves.

The physical changes needed to accommodate project-related growth may have physical impacts on the environment, however. Project-related growth and the increase in population would result primarily in increased demand on transportation infrastructure, utilities, public services, and recreational facilities, as well as increases in ambient noise levels, emissions of criteria air pollutants and toxic air contaminants, and greenhouse gas emissions. These physical impacts are evaluated in Section 3.5, “Transportation and Circulation”; Section 3.6, “Noise”; Section 3.7, “Air Quality”; Section 3.8, “Greenhouse Gas Emissions”; Section 3.11, “Recreation”; Section 3.12, “Utilities and Service Systems”; and Section 3.13, “Public Services.”

The aforementioned significance thresholds were applied to determine impact significance using a quantitative approach. The following evaluation discusses whether the proposed project or variant would result in direct impacts on population and housing such as construction of new housing or businesses, or displacement of substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere. The following evaluation also discusses whether the proposed project or variant would result in indirect impacts on population and housing such as extending public roads or implementing infrastructure improvements that would allow for increases in population and housing.

Comments regarding population, housing, and employment were received during the public scoping period in response to the NOP, covering socioeconomic topics that included gentrification, the affordability of housing, and the changing character of the neighborhood. As noted above, CEQA does not require a discussion of socioeconomic effects except where they would result in physical changes, and states that social or economic effects shall not be treated as significant effects (see State CEQA Guidelines Sections 15064[f] and 15131).

The following evaluation of impacts is based on a review of published population and housing information, including from the U.S. Census Bureau, California Department of Finance, ABAG, and the General Plan and *Bayview Hunters Point Area Plan*.

Project Features

Both the proposed project and the variant would involve demolishing some of the existing buildings on the project site and constructing a mixed-use development that would include residential, commercial, institutional/ educational, research and development, parking, and open space uses. Implementing either the proposed project or the variant would increase the residential and employment populations of the project site. Table 3.3-4 compares the population and housing projections for the proposed project and the variant.

Table 3.3-4: Population, Housing, and Employment Projections for the Proposed Project and Variant in 2022[1]

	Population	Housing	Employment
Proposed Project	3,401	1,240	929
Variant	1,371	500	3,535

Notes:
[1] The buildout year for the proposed project and variant is anticipated to be 2022.
Source: Bean, pers. comm., 2016.

Impact Evaluation

Impact PH-1: The proposed project or variant would not induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through the extension of roads or other infrastructure). *(Less than Significant)*

This analysis considers whether the proposed project or variant would contribute to substantial daytime and/or residential population growth. "Substantial" growth is defined as increases in population that are unplanned, without consideration of or planning for infrastructure, services, and housing needed to support proposed residents, employees, and visitors. Direct and indirect growth would occur at the project site and in the surrounding Bayview Hunters Point neighborhood under either the proposed project or variant.

India Basin Shoreline Park and 900 Innes Properties

Recreational, commercial, and institutional facilities proposed for the India Basin Shoreline Park and 900 Innes properties would not include housing; therefore, operations on the 900 Innes property would not create direct population growth through the construction of housing. Similarly, project operation would not create indirect population growth because operation of the project facilities would require only five full-time employees, which would not constitute substantial indirect population growth. Housing included on the 900 Innes property under the proposed project or the variant would counterbalance the demand for housing created by these five employees.

These recreational, commercial, and institutional facilities would likely attract more people to the study area. Daily use of these facilities would not generate population growth; rather, daily users would likely be primarily

existing San Francisco residents. Because the users would be temporary visitors to the project site, site development would not induce population growth directly.

Infrastructure and services would be expanded to serve the proposed project or variant, without excessive capacity that might encourage additional growth beyond that already planned for in the *Bayview Hunters Point Area Plan*. Therefore, under either the proposed project or the variant, the potential for indirect population growth caused by operation of the India Basin Shoreline Park and 900 Innes properties would be low.

India Basin Open Space Property

Habitat restoration and recreational improvements proposed for the India Basin Open Space property would not include housing or commercial facilities; therefore, operations at this property under either the proposed project or the variant would have no potential to induce population growth directly or indirectly.

700 Innes Property

At full project buildout, which is expected to occur by 2022, the proposed project would add 1,240 housing units, approximately 3,401 residents, and 929 permanent employees to the 700 Innes property (Bean, pers. comm., 2016). By contrast, the variant would add 500 housing units, 1,371 residents, and 3,535 permanent employees to this property (Bean, pers. comm., 2016). Adding 3,401 residents under the proposed project would increase the study area's population by 116 percent, or approximately 0.3 percent of the City's 2030 population, while adding 1,371 residents under the variant would increase the study area's population by 47 percent, or approximately 0.1 percent of San Francisco's 2030 population.[4] Adding 929 or 3,535 permanent employees under the proposed project or variant, respectively, would increase employment in the study area by 23 percent or 44 percent, or approximately 0.1 or 0.4 percent of the total number of jobs in San Francisco in 2030.[5]

As mentioned above in Section 3.3.2, "Regulatory Framework," the Regional Housing Needs Assessment, which projects the Bay Area's housing needs based on regional trends, determined that San Francisco's fair share of regional housing needs between 2015 and 2022 is 28,870 new residential units. The addition of 1,240 housing units under the proposed project would represent 4.3 percent of San Francisco's housing needs by 2022. Likewise, the addition of 500 housing units under the variant would represent 1.7 percent of San Francisco's housing needs by 2022. Although the proposed project or variant would cause the study area's population to increase, growth in this area has long been the subject of many planning activities, including the *Bayview Hunters Point Area Plan*. In summary, the direct population and housing growth provided as part of the project aligns with the City's redevelopment effort to create a vibrant high-density, mixed-use neighborhood along the Bayview shoreline (San Francisco, 2010).

Proposed Project

The proposed project would have the capacity to supply housing for all 929 new employees. Because the amount of housing provided by the proposed project would exceed the housing demanded by new employees, the direct employment growth at the 700 Innes property under the proposed project could be accommodated by housing provided under the proposed project.

[4] The 2014 Housing Element projects San Francisco's population to be 981,800 in 2030.
[5] The 2014 Housing Element projects the total number of jobs to be 707,670 in 2030.

As infrastructure, public services, roads, and other services and community amenities expand under either the proposed project, the potential would exist for development at the 700 Innes property to generate indirect population growth. Indirect growth related to infrastructure is often defined as development that occurs as infrastructure is expanded to previously unserved areas. Areas surrounding the project site are primarily built out, except for the future Northside Park adjacent to the site to the east. Thus, the study area would not be vulnerable to inducing indirect growth. Infrastructure and services would be expanded to serve the project, without significant excess capacity that might encourage additional growth beyond that already planned under the *Bayview Hunters Point Area Plan*.

Variant

The variant would not have the capacity to supply housing for all 3,535 new employees. The increase in employment under the variant could cause new employees who do not currently live in the Bay Area to seek housing. However, it is likely that some of the new employees currently live or share a housing unit in the Bay Area. The new employees who do not currently live in the Bay Area could potentially live in the 500 housing units provided by the variant or find housing elsewhere in the neighborhood, the City, or the Bay Area.

The variant's employment growth would be considered substantial if it were to result in housing demand exceeding the anticipated combined amount of housing developed on-site, Citywide, and in the region. Although the housing demanded by employees under the variant would exceed the housing supplied on-site, proposed nearby development, including at Mission Bay, Treasure Island, and Hunters Point Naval Shipyard, is anticipated to result in an additional 22,873 housing units (San Francisco, 2015). Therefore, this growth and change at the project site under the variant could be accommodated by both proposed on-site housing and proposed housing in the vicinity. Furthermore, growth in employment in the area is planned for in the *Bayview Hunters Point Area Plan,* and thus, is consistent with the City's planned future for this area of the City.

As infrastructure, public services, roads, and other services and community amenities expand under the variant, the potential would exist for development at the 700 Innes property to generate indirect population growth. Indirect growth related to infrastructure is often defined as development that occurs as infrastructure is expanded to previously unserved areas. Areas surrounding the project site are primarily built out, except for the future Northside Park adjacent to the site to the east. Thus, the study area would not be vulnerable to inducing indirect growth. Infrastructure and services would be expanded to serve the project, without significant excess capacity that might encourage additional growth beyond that already planned under the *Bayview Hunters Point Area Plan*.

Overall Impact Conclusion

Overall, the impacts of development at all four properties at the project site related to direct and indirect population growth are planned for in the *Bayview Hunters Point Area Plan,* and thus, would be consistent with the City's planned future for this area of the City. Therefore, this impact would be *less than significant.* No mitigation measures are necessary.

Impact PH-2: The proposed project or variant would not displace substantial numbers of people or existing housing units, necessitating the construction of replacement housing. ***(Less than Significant)***

Impacts associated with displacement of existing housing units and people would be the same under project construction and operation; therefore, this analysis combines construction-related and operational impacts.

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

Construction and operation on the India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties would not displace any persons or existing housing units under either the proposed project or the variant.

700 Innes Property

The two residential parcels on the 700 Innes property, located at 702 Earl Street and 838-840 Innes Avenue, are currently occupied. These two parcels have a combined population of six people. The residential property at 838-840 Innes Avenue would be demolished, but the structure at 702 Earl Street, which currently houses four people, would be relocated on the 700 Innes property. Thus, two people would be displaced by project construction. Overall, the proposed project would develop 1,240 residential units, while the variant would develop 500 units. Neither the proposed project nor the variant would displace an amount of existing housing units or persons that would necessitate construction of new units beyond the units proposed as part of the development.

Overall Impact Conclusion

Overall, development at all four properties at the project site would not result in the displacement of people or existing housing units, and this impact would be *less than significant*. No mitigation measures are necessary.

3.3.4 Cumulative Impacts

Impact-C-PH: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would not substantially contribute to cumulative impacts related to population and housing. *(Less than Significant)*

The geographic context for the analysis of cumulative impacts on population and housing is the City and County of San Francisco as a whole. Past and present development trends in the City are described in Section 3.3.1, "Environmental Setting," representing the baseline conditions for the evaluation of cumulative impacts. Forecasts of reasonably foreseeable future development are based on projections of future growth and take into account projects going through the entitlement process. The geographic context for an analysis of cumulative impacts on employment includes the entire Bay Area (as represented by the nine-county ABAG planning area) because a substantial percentage of San Francisco's population commutes to jobs outside of San Francisco, and substantial numbers of residents of other Bay Area cities commute to jobs in San Francisco. Existing employment conditions, representing past and present development in this geographic area, are presented in the description of regional employment in Section 3.3.1, "Environmental Setting."

The Planning Department published growth expectations in the 2014 Housing Element, as stated above, which forecasts that the City will have a population of 981,800, 413,370 households, and 707,670 jobs in 2030. In addition, the nine-county Bay Area is expected to add 209,430 jobs, 17 percent of which San Francisco plans to provide (San Francisco, 2015).

Development of cumulative projects in the City, as identified in Table 3-1 in Section 3.0.3, "Format of the Environmental Analysis," would result in an increase in population, housing, and employment. Specifically, the projects listed in Table 3-1 that would increase population, housing and employment under the cumulative scenario are the Candlestick Point and Hunters Point Shipyard (Phases I and II), Hunters View, Executive Park, Brisbane Baylands, and Visitacion Valley/Schlage Lock (Redevelopment Zones 1 and 2) projects. In combination with the proposed project or variant, the cumulative projects would result in 16,313 new housing units or 15,573 new housing units, which in turn would result in 39,151 new persons or 37,375 new persons in the City. However, these cumulative projects would generate cumulative population, housing, and employment conditions that are within the 2030 projections formulated by the Planning Department and would help the City meet its share of the Regional Housing Needs Assessment. For example, the supply of housing under the cumulative projects scenario would be between 54 and 57 percent of the Regional Housing Needs Assessment target for the City by 2022. Furthermore, population growth under the cumulative scenario would represent 12 percent of the projected population growth of the City by 2030. Therefore, the cumulative population, housing, and employment impact would be *less than significant.* No mitigation measures are necessary.

3.3.5 References

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3.4 CULTURAL RESOURCES

Cultural resources are broadly defined as buildings, sites, structures, landscapes, or objects that may have historical,[1] architectural, archeological, cultural, or scientific importance. This section describes cultural resources in the study area, and identifies and assesses potential impacts on "historical resources," as defined by State CEQA Guidelines Section 15064.5, that could occur with implementation of the proposed project or variant. Mitigation or improvement measures to avoid or reduce adverse impacts on historical resources are identified, as appropriate. Comments related to cultural resources were received during the public scoping period for the Notice of Preparation, regarding restoration of the Shipwright's Cottage; clarification regarding which structures would be demolished; the assessment of cumulative impacts; and compliance with Assembly Bill (AB) 52, Senate Bill 18, and the requirements of the Native American Heritage Commission (NAHC). These comments are addressed in this section.

3.4.1 Environmental Setting

Methods for Identifying Existing Conditions

Prefield research, Native American outreach, and field inventory efforts (both archeological and historic architectural inventories) were completed to identify existing cultural resources in the study areas and immediate vicinity. The study areas for cultural resources subdisciplines of archeology and historic architecture differ slightly. The study area as defined for historic architectural resources extends outside of the project site to address potential indirect impacts of project implementation, and, unless otherwise noted, the study area for archeological resources is synonymous with the project's construction footprint[2] (Figure 3.4-1).

Prefield research consisted of a literature review and records search of ethnographic and historical literature and maps; federal, State, and local inventories of historical properties; archeological base maps and site records; and survey reports on file at the Northwest Information Center at Sonoma State University. The Northwest Information Center is a regional clearinghouse of the California Historic Resources Information System, an arm of California's Office of Historic Preservation. The purpose of the records search was to ascertain whether any cultural resources had been previously identified in or adjacent to the study areas and to identify previous cultural resources investigations.

In addition to the records search, archival research was conducted in various repositories and online resources, including the San Francisco Planning Department (Planning Department); the San Francisco Public Library, the Maritime Research Center of the San Francisco Maritime National Historical Park; the shipwreck database maintained by the California State Lands Commission; Sanborn Fire Insurance maps; historical aerial photographs; U.S. Census records; U.S. Coast Survey maps; U.S. Geological Survey topographic maps; and other historical maps and illustrations.

[1] "Historic" and "historical" are often used interchangeably and both are used in this document. In general, something "historic" is something famous or momentous in history, while something "historical" is something of or relating to the past. When referring to properties under CEQA and the California Register of Historical Resources (CRHR), the terms "historical" or "historical resources" are typically used, while the National Historic Preservation Act (NHPA) and National Register of Historic Places (NRHP) use "historic" or "historic properties." The City also generally uses "historic."

[2] Project construction footprint includes on-land areas of the project site and the in-water areas associated with the India Basin Shoreline Park property of the project site.

A request for a review of the Sacred Lands File was submitted to the NAHC on July 19, 2016, to gather information on the presence of important resources to the local Native American community. In addition, the NAHC provided a list of contacts. All 11 groups and individuals on the NAHC's list were contacted by certified mail on August 4, 2016, with follow-up calls completed on September 16, 2016.

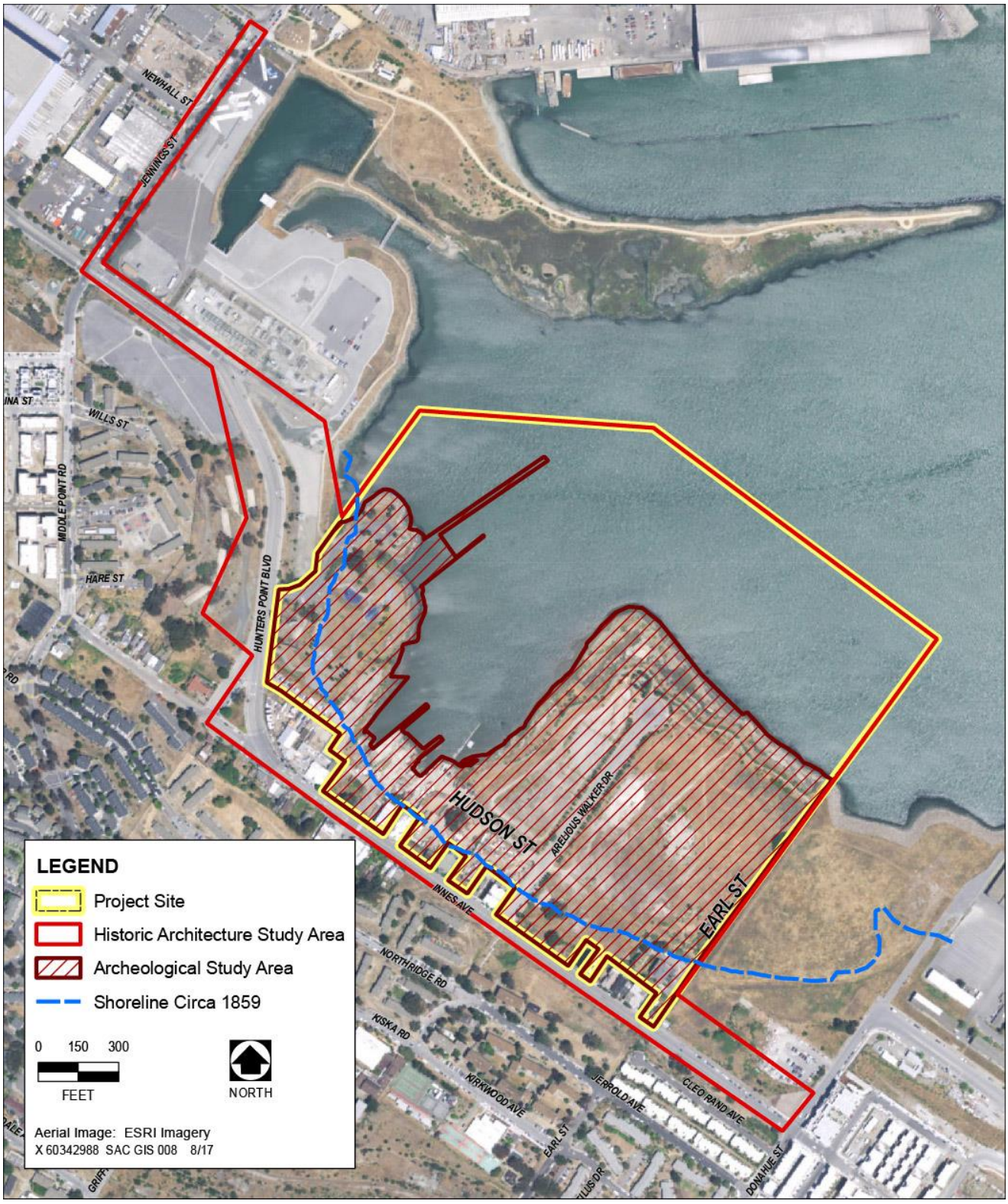
Initial field efforts included the completion of both archeological and historic architectural field inventory surveys of the study areas. For the archeological inventory, a survey of the respective study area was completed by AECOM archeologists on July 21 and 22, 2016. During completion of this pedestrian reconnaissance, the remains of at least one, and likely two, ship hulks were identified. At the request of the Planning Department, in December 2016 and continuing into January 2017, an Extended Phase 1 (XP1) study (i.e., limited subsurface investigation) was undertaken within the confines of India Basin Shoreline Park and immediately adjacent waters to address the hulks identified during the pedestrian survey. In consultation with the Planning Department, the XP1 study implemented by AECOM took the form of:

- coordination with Northgate Environmental Management during completion of its environmental boring program in India Basin Shoreline Park to determine the presence of the hulks below the current ground surface,
- subsurface work that involved placing soil probes within the tidal inlet and in shallow offshore waters atop and around the potential hulks identified in India Basin Shoreline Park, and
- the completion of additional archival research to more definitively identify the hulks.

For the effort to identify existing conditions regarding historic architectural resources, Page & Turnbull staff members conducted site visits in April and May 2015 where they recorded notes about the site's features and took digital photographs. Page & Turnbull conducted a subsequent site visit in July 2017 to supplement the historic resource evaluation (HRE) and record the current site conditions of streetscapes and intersections that would be improved as part of the *India Basin Transportation Action Plan* element of the project.

Details of the efforts employed to inventory the India Basin Mixed-Use Project study area for cultural resources and discussions of the identified cultural resources are presented in the individual technical reports and memorandum prepared for the project (San Francisco, 2017a, 2017b, and 2017c; see Appendix C, "Cultural Resources Supporting Information"). The identified resources are discussed briefly below.

A previous historic architectural survey of the study area was conducted in 2008 by Kelley & VerPlank, which identified the India Basin Boatyards as a potential historic district. The historic district incorporates the remaining boatyards along the shoreline of India Cove, including parts of eight separate parcels that comprise the historic Anderson & Cristofani and Allemand Brothers yards centered on the intersection of Hudson Avenue and Griffith Street (BHS, 2008).



Sources: USCS, 1859 map; San Francisco, 2017a and 2017b; compiled by AECOM in 2017

Figure 3.4-1: Cultural Resources Study Areas

Overall Cultural Setting

Prehistoric Background

Human settlement of the San Francisco Bay (Bay) region probably began sometime during the early Holocene, circa (ca.) 10,000 years ago. The oldest evidence of human occupation in the Bay region was documented in northern Santa Clara County, where radiocarbon assaying has yielded dates of ca. 8,000 years Before Common Era (B.C.E.). Evidence of later occupations is more common. Radiocarbon dates from several sites in the regions of San Francisco and Monterey bays range between ca. 5000 and 2000 B.C.E.

Data from these archeological sites indicate that extensive but sparse populations of hunter-gatherers occupied these areas before 2000 B.C.E. Archeological sites from this period are situated in interior hills and valleys, and on bay and ocean shores. These sites are characterized by earth and/or sand midden deposits. Faunal materials indicate that shellfish were an important but not dominant source of food during this time. Hunting and vegetal food processing were more important, as indicated by the presence of millingstones and large projectile points. Before reclamation efforts, the southern portion of the study area was located along the shoreline of the Bay. San Francisco's shoreline area has been found to contain prehistoric archeological resources such as shell middens and burial sites. Such sites have been identified both to the east at the Hunters Point Shipyard and to the west in the vicinity of Islais Creek. The southern portion of the study area would have offered conditions similar to the conditions in those areas, including freshwater sources and easy access to the Bay. Thus, it would have been similarly suitable for prehistoric habitation.

Although the remainder of the study area was inundated beneath Bay waters during the historic period, evidence exists that virtually all of the northern portion of the study area was exposed land until at least 6,000 years Before Present (B.P.). By 2,000 B.P., it appears that nearly half of this portion of the study area still remained above the encroaching waters. These data suggest that the land surfaces in the reclaimed portion of the study area, which are now buried beneath modern fill and Bay Mud, were available for prehistoric habitation and use. Recently, prehistoric archeological sites have been identified west of the study area on sand deposits buried beneath Bay Mud and introduced fill, conditions also found in the soil column of the study area. Given these factors, it is possible that similar prehistoric resources lie buried beneath the surface of the study area.

A number of prehistoric archeological investigations have been conducted in San Francisco, the majority of which are clustered between Yerba Buena Cove and Mission Bay. Excavated sites in this area include CA-SFR-28, CA-SFR-112, CA-SFR-113, CA-SFR-114, CA-SFR-135, CA-SFR-136/H, CA-SFR-147, CA-SFR-148, CA-SFR-154/H, CA-SFR-155, and CA-SFR-171. At least six prehistoric sites on the city's northern side have also been excavated, including CA-SFR-6/26, CA-SFR-21, CA-SFR-29, CA-SFR-30, CA-SFR-31, and CA-SFR-129 (ASC, 2015; Byrd et al., 2009). Prehistoric archeological site CA-SFR-171, located approximately a mile west-northwest of the study area, consists of a thin shell midden (less than 30 centimeters thick), situated on alluvial deposits buried underneath nearly 3 meters of imported fill (Byrd and Kaijankoski, 2011).

North-northwest of the study areas in the South of Market and Mission Bay areas is a collection of about a half-dozen midden sites that are perhaps the most well documented in San Francisco. CA-SFR-136/H, consisting of a buried shell midden with a historic-era component, is located near the intersection of Eighth and Howard streets. The site was buried approximately 1.8 to 2.75 meters below surface. Excavations at the site identified chert cores, one obsidian core, obsidian flakes, shell, and faunal bone (ASC, 2015). Other midden sites found south of Market

include CA-SFR-114, consisting of a range of artifacts, faunal remains, structural features, as well as human remains; CA-SFR-112, consisting of a broad array of artifacts, including beads, whistles, awls, and faunal remains; and CA-SFR-113, a large shell midden (Stewart, 2009:5). Two additional sites in the South of Market area, CA-SFR-147 and CA-SFR-155, were historically situated in dunes upslope from Mission Bay and were more sparse than other sites found in the area that had historically been in marshy settings (Stewart, 2009:5).

Several prehistoric archeological sites have been identified east of the study area, farther out on Hunters Point including CA-SFR-11, CA-SFR-12, CA-SFR-13, CA-SFR-14, and CA-SFR-15. Unfortunately, these sites have not been relocated since first identified by Nelson (1909). There is also another cluster of similar Nelson sites within the Candlestick Point vicinity, south of Hunters Point.

Ethnographic Background

The study area is situated on lands occupied during the ethnographic period by speakers of *Ramaytush*, or San Francisco *Costanoan*. *Ramaytush* is one of eight *Costanoan* languages spoken in California. *Costanoan* is derived from the Spanish term *Costanos* for "coast people"; however, it does not represent a cohesive ethnic group. Instead, *Costanoan* is a linguistic division, grouping eight languages together because of their phonological similarities. Together with the *Miwokan* languages, *Costanoan* comprises the *Utian* family of languages. In turn, the *Utian* family is part of the larger Penutian linguistic stock. Today, the name *Ohlone* is more commonly used for the *Costanoan* peoples.

The territory inhabited by *Ohlone* extended from the Carquinez Strait southward to the Sur River, and from the Pacific Coast eastward to the Diablo Range. This area was substantially affected by the Spanish presence in California. Between 1769 and 1776, seven Spanish expeditions entered *Ohlone* lands, and by the close of the 18th century, seven missions had been established. At the time of these early contacts, approximately 10,000 *Ohlone* existed, inhabiting roughly 50 politically autonomous tribelets. The *Ohlone* who inhabited present-day San Francisco at the time of the Spanish entrance into the region were the *Yelamu*. The *Yelamu* comprised three groups who occupied five villages in present-day San Francisco.

Those *Ohlone* who freely moved to mission lands, and those who were captured by the Spanish during punitive expeditions, were often forced to assimilate with individuals of other ethnic or linguistic affiliations, resulting in the disruption of indigenous lifeways. In addition to losing their aboriginal culture, the *Ohlone* population was decimated by introduced diseases to which they had no natural immunity. By 1832, the *Ohlone* population of the San Francisco Bay Area (Bay Area) had declined to fewer than 2,000 individuals. Most of the surviving population relocated to the missions; however, some *Ohlone* sought and received refuge among neighboring aboriginal groups.

Regional Historic Background

Hispanic Period

As a result of the Cabrillo expedition of 1542–1543, the southbound passage of the Manila Galleon along the coast after 1565, and subsequent voyages of exploration by Cermeño (sometimes spelled Cermenho) in 1597 and Vizcaíno in 1602, California's coastline was familiar to navigators by the end of the 16th century. Jose de Ortega may have observed the entrance to San Francisco Bay in 1769; however, the first undisputed identification of the

Bay's entrance by nonnative peoples occurred on November 28, 1770, by the expedition of Pedro Fages. Entry into the Bay from the sea first occurred in August 1775, when Juan Manuel de Ayala began his 2-month-long nautical survey of the Bay aboard the *San Carlos*.

The interior remained unknown until the 18th century, however European exploration of the San Francisco Bay began in 1769 and continued until 1810. During this period, a number of Spanish expeditions entered the territory occupied by the *Ohlone* peoples. Forays led by Portolá, Ortega, Fages, Fages and Crespi, de Anza (two expeditions), Rivera, and Moraga were carried out between 1769 and 1776. Favorable reports led to the founding of seven missions in the region between 1770 and 1797.

In the spring of 1776, the site of San Francisco was chosen by Juan Bautista de Anza for the establishment of a mission and military post. Later that same year, Mission San Francisco de Asís (Mission Dolores) and El Presidio Real de San Francisco were officially dedicated, and José Joaquín Moraga (de Anza's lieutenant) took formal possession in the name of King Carlos III.

Jurisdiction over Alta California was established by Mexico in April 1822. During the Mexican Period (1822–1848), control over this remote area by the central and local Mexican authorities was never strong. Rather, the Mexican Period was one of a slow disintegration of control by the Mexican government. The mission lands were secularized in 1833, expropriated, and given out as private ranches in the form of land grants during the next decade. The Rincón de las Salinas y Potrero Viejo land grant, which encompassed the modern-day Bayview and Hunters Point areas, was granted by the Mexican government in 1840 to José Cornelio Bernal, the son of a member of the Anza expedition.

Secularization of the missions by the Mexican authorities produced additional cataclysmic change in the indigenous cultures. The majority of the Native Americans gradually left the missions to work as manual laborers on the ranches that were established in the surrounding areas. Among some *Ohlone,* there was a partial return to aboriginal religious customs and some return to aboriginal subsistence practices.

American Period

Captain William A. Richardson, Englishman and founder of Yerba Buena (San Francisco's original name), first traveled to San Francisco in 1822, shortly after Mexico gained its independence from Spain. Richardson was given permission from outgoing Spanish Governor Pablo Vicente de Solá to settle permanently on the peninsula and in 1825, Richardson married Maria Antonia Martinez, daughter of commandant of the Presidio Ygnacio Martinez. Over the ensuing decade, Richardson developed trade and communication on San Francisco Bay and in 1835 was appointed San Francisco's first harbormaster by Governor José Figueroa. In this year, he and his family settled near present-day Chinatown. This early settlement soon attracted other English-speaking immigrants, including Jacob Leese, an American trader who arrived in 1836.

A major factor leading to the disintegration of Mexican control of Alta California was pressure from the U.S. following these early settlements and visits by private citizens. These and other sojourners brought news of California back to the U.S., helping trigger the immigration of U.S. citizens into California. The Mexican government became increasingly agitated by this continued influx of U.S. citizens. The semi-official 1844 and 1845 expeditions into California by Frémont further distressed the Mexican government.

The continued friction between Mexico and the U.S. ultimately led to the Mexican-American War of 1846. On July 9, 1846, a crew from the sloop-of-war USS *Portsmouth* came ashore and raised the first American flag over San Francisco. However, because Mexico had ceased stationing regular troops in San Francisco after secularization, the flag raising was a symbolic gesture rather than the result of heroic exuberance. California became part of the U.S. as a consequence of the U.S. victory over Mexico in the war. The territory was formally ceded in the treaty of Guadalupe Hidalgo in 1848, and was admitted as a U.S. state in 1850.

After the discovery of gold at Sutter's Mill on January 24, 1848, San Francisco transformed rather quickly from an isolated hamlet into a bustling center of commerce. The population of San Francisco grew from 375 people in 1847 to 2,000 by February 1849; by the end of 1849, there may have been as many as 20,000 people living in the City.

San Francisco became a major city and port almost overnight and grew at a phenomenal rate, replacing Monterey as the coast's principal port. Maritime traffic arrived through three major shipping channels approaching San Francisco. These lanes converge outside the Golden Gate to form the single channel entering the Bay. Through this channel came lumber schooners from the Mendocino coast, along with sealers, whalers, fishermen, traders, and passenger ferries. Large docks were built so that cargo could be discharged directly onto the wharves instead of being ferried by rowboats to shore. From those docks, the cargo was distributed and sometimes reloaded onto smaller vessels to transport to various settlements.

During the early American period, the commercial and residential center of San Francisco was near the waterfront along the Embarcadero, although the general vicinity of the study area was in the hinterlands at this time and sparsely populated. The Bernal family began selling portions of their land in the modern day Bayview–Hunters Point area for real estate development starting as early as 1849. Two land speculators, John Townsend and Cornielle de Boom, convinced Bernal to subdivide lots in Hunters Point to create a new city: South San Francisco. The Hunter brothers, Robert and Philip, became agents of Townsend and de Boom's failed development project in the 1850s, and although they were not successful, they settled and remained in the area.

The South San Francisco Homestead and Railroad Association, an association that allowed individuals to join together to buy land for development, was the largest owner of land in Hunters Point in the 1860s. Seeking to encourage industrial development on its holdings, the South San Francisco Railroad and Homestead Association donated 30 acres of land (including about 20 acres of submerged land) at the easternmost tip of Hunters Point to a German-born engineer named A. W. von Schmidt in 1865 with the condition that he build a dry dock. Although he possessed the expertise, von Schmidt did not have the capital, so in 1866 he formed a partnership with San Francisco banker William C. Ralston. Begun in 1866 and completed the next year, the $250,000 dry dock, the largest in the West, was 400 feet long and 100 feet wide, diminishing to 60 feet wide at the bottom. Other structures erected on the site included a caisson, bulkheads, workshops, and machinery.

Although the association acquired 2,000 lots, constructed a road to the tip of Hunters Point, and built a wharf at the end of Thomas Avenue, their efforts did not lead to extensive development. The Long Bridge, which was completed in 1865 and connected Hunters Point with Fourth Street in the South of Market area, led to some residential and commercial development in the project vicinity; but again, this improvement did not markedly change the character of the area. The Long Bridge did, however, allow "nuisance industries" such as slaughterhouses, tanneries, tallow works, and butchers to move out of the more populous Mission Bay and onto the more remote northern side of Hunters Point.

In 1868, a year after the founding of the California Dry Dock Company, the State Board of Tide Land Commissioners—the State-appointed trustee of submerged lands—named the large inlet separating Potrero Point and Hunters Point "India Basin" and reserved it for "docks, piers, slips, and basins, and other purposes of commerce." India Basin was defined as extending from the mouth of Islais Creek to the eastern end of Hunters Point. The designation of India Basin also coincided with the completion of Long Bridge, which theoretically placed the Hunters Point peninsula within easy access of downtown San Francisco.

Gradually, groups of residents were drawn to Hunters Point by a number of economic opportunities available there. The 1870s saw Chinese immigrants establish shrimping camps throughout the Bay, with several located near India Basin. At approximately the same time, India Basin began to experience an influx of European immigrant shipwrights, who were drawn to the Bay's deep-water access and by the lack of competitors. This small community of shipwrights, while still physically isolated from San Francisco's core to the north, was essential to some of the most important commercial networks in the Bay and its tributaries because of the community's expertise in constructing wood scow schooners. The boatyards of India Basin were crucial participants in this economic web, building and maintaining the majority of scow schooners that plied the shallow waters and estuaries of the Bay from the 1860s through the first two decades of the 20th century.

India Basin Area History

Early Character of the India Basin Area

The boatyards of India Basin began to appear around the same time as the shrimp camps and they became the mainstay of the area's economic and social landscape until the eve of World War II. Established by experienced English, Dutch, German, and Scandinavian boat builders in one of the few parts of the Bay shoreline with deep water access that had not already been claimed by major industries, India Basin's boatyards concentrated on the production of bay scow schooners. The expertise of many of these European shipwrights was essential in the development of the design of the San Francisco bay scow.

Scow schooners were characterized by their shallow drafts, which allowed them to navigate the Bay Area's shipping routes to reach Sacramento–San Joaquin Delta (Delta) and river towns such as Petaluma. Because of the shallow waters in the estuaries and sloughs of the Bay, Delta, and Central Valley, ships of greater draft could not reach the isolated farms and workshops of Northern California. Shallow-draft scows could go virtually anywhere and were therefore extremely useful in bringing products such as wheat, hay, fruits, and vegetables from the hinterlands to San Francisco. Goods not consumed in San Francisco were then loaded on larger ocean-going vessels that would take Bay Area products around the world.

In search of inexpensive waterfront land with deep water access for shipways and docks, the scow builders set their sights on India Basin, then still part of the South San Francisco tract. Upon relocating to the northern shore of the remote Hunters Point peninsula, the immigrant shipwrights were finally able to begin building scows and other vessels in one location for more than half a century without disturbance. Noting the concentration of family-run boatyards in the area, an article in the November 1869 edition of the *San Francisco Real Estate Circular* stated that "South San Francisco will undoubtedly be one of the most valuable locations for shipbuilding and manufacturing purposes in the county." The boatyards that operated at India Basin were small-scale and tended to operate with informal verbal contracts. Their boatyards were frequently home-based industries, with their houses

located on or near the boatyard properties. Despite their small scale, the manufacturing and repair of handmade sailing vessels was vital to San Francisco's distinctive maritime-based economy.

The community of laborers responsible for building the scow schooners, clustered near India Basin, established family shipyards that contained both dwellings and production/repair facilities. Examples include the Shipwright's Cottage at 900 Innes Avenue, built ca. 1875; marine way tracks built to move ships onto land for repair; and other support buildings associated with the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape, discussed in further detail below. Shipbuilding and repair expertise was passed down the generations. By the 1890s, a series of dwellings, many associated with boatbuilding, lined modern-day Innes Avenue, mostly west of Arelious Walker Drive.

At the turn of the 20th century, Hunters Point was still a rural district with little development beyond the California Dry Dock Company facility, Butchertown, and a handful of boatyards and associated dwellings at India Basin. From 1901 until the 1906 Earthquake and Fire, the India Basin survey area does not appear to have undergone many physical changes. Far removed the path of residential development, Hunters Point did not attract many new residents.

Even after the construction of the Southern Pacific's Bayshore Cutoff in 1904, living at Hunters Point remained unthinkable for middle-class commuters, mostly because of the horrendous odors generated by Butchertown, which sat astride the main approach to the neighborhood. As a result, India Basin and the rest of Hunters Point remained a distinctive and largely self-contained community, functioning as a de facto company town for local industries. According to 1900 and 1910 Census records, the vast majority of local residents worked in one of three local industries: the boatyards of India Basin, the dry docks of the California Dry Dock Company, or the tanneries and slaughterhouses of Butchertown.

India Basin Scow Schooner Boatyard

As detailed in the HRE report, the India Basin site was lined by small independently operated boatyards by the final quarter of the 19th century (San Francisco, 2017b). Johnson Dircks set up his yard immediately behind his residence (the Shipwright's Cottage) beginning in the 1870s. Dircks's boatyard took advantage of his property's direct access to India Basin. In 1893, Dircks sold the residence to Carl Jorgenson and his boatyard and marine ways to Henry P. Anderson, known as Harry or "Pop." Like his neighbor shipwrights in India Basin, Anderson built scow schooners used for hauling hay and other goods among Bay Area settlements. Anderson's yard also constructed deep-hulled sailboats.

Anderson initially partnered with Daniel Larsen and operated the boatyard under the name Anderson & Larsen, although the 1900 Sanborn map identifies the yard only as the H. Anderson Ship Yard. The major features within the yard's boundaries at the turn of the 20th century were a storage shed and a series of marine ways lining the shore, a Tool Shed, and a Water Tank building. Fred Siemer's boatyard filled the adjacent parcel to the northwest, containing a workshop and marine ways. By 1914, Anderson's yard had expanded both to the northwest (subsuming Siemer's) and to the southeast. The earlier facilities were now joined by a band saw building, lumber shed, boat storage buildings, and planing mill. As previously, marine way tracks lined the shore, extending out into the shallow waters of India Basin.

Anderson and August Siemer partnered in the yard in the 1920s; demand for India Basin's boatyards was flagging somewhat during this period, and several of the smaller facilities were absorbed by the area's larger yards. In the mid-1920s, Anderson transferred the business to his son Walter. Walter Anderson and Alfred Cristofani, a yard employee who had started as an apprentice in 1907, took over as partners, providing the name that the business would carry for the next several decades. Advertisements that ran in the *San Francisco Chronicle* in the late 1920s and 1930s offered Anderson and Cristofani's services in both custom building and boat repair.

By 1935, the yard had begun to modernize, as did the surrounding neighborhood. From this point on, the use of scow schooners and other transport vessels dwindled rapidly throughout the Bay Area, and the yard's business shifted away from boatbuilding and toward boat repair. Anderson and Cristofani continued to update their facilities, constructing the east outfitting dock ca. 1938–1946 to replace an earlier dock in the same location. The blacksmith and machine shop was built atop the dock within the next several years. Also during this period, the ramp surface of the east marine ways was raised, so that the ramp and marine ways remained above the water while extending farther into the basin.

However, in the 1910s and 1920s, new modes of transportation began to threaten the Bay's scow shipping industry. By 1930 only around 60 residents remained in India Basin. Only one boatyard, the Anderson & Cristofani Boatyard, still operated, having consolidated a few of the smaller surrounding yards. The opening of the Bay Bridge in 1936, and the Golden Gate Bridge the following year, had a vast impact on the shipping trade in the Bay Area. The watercraft that plied the Bay and its rivers were quickly made obsolete, as trucks were able to reach San Francisco from the East Bay in a matter of minutes. The era of India Basin's most significant contribution to the region's economy had ended; however, building development still occurred.

The last new boatyard in India Basin was constructed in 1935–1963 by boat builder William J. Heerdt and his business partner Peter Staddcutter. The three-story, heavy timbered, platform-frame shop was built at 702 Earl Street for boat repair and boat building, and the boatyard became a hangout for local shipwrights and was soon nicknamed the "Westward Ho Yacht Club." Heerdt used the building until his death in the late 1970s.

In 1939, 4 years after the construction of 702 Earl Street, the U.S. Navy purchased the dry docks at Hunters Point. After America's entry into World War II, the Hunters Point Naval Shipyards were expanded to meet wartime demand, bringing increased development to the area, including commercial and residential to meet the demands of the growing labor force, including several restaurants, at locations such as 838-840 Innes Avenue.

India Basin's tidelands were incrementally filled in the decades after World War II. By 1969, nearly the entire basin had been reclaimed, with only a small inlet left open to access the boatyards. However, some efforts have been undertaken to create green space and improve the natural environment of India Basin. The area along the bayshore immediately northwest of the remaining shipyards, previously empty infilled land, became India Basin Shoreline Park in the 1990s, operated by RPD. Another municipal green space created out of reclaimed fill, the India Basin Open Space, now follows the shoreline along the east edge of the remaining India Basin inlet and then east toward the Candlestick Point–Hunters Point Shipyard site, which is currently undergoing a massive housing redevelopment campaign.

Hunters Point Ship Graveyard

During the 1920s and continuing into the 1930s, the vicinity of India Basin Shoreline Park was used as a ship scavenging area where "obsolete vessels were towed to the east end of the basin, stripped of parts, and left to deteriorate in the mud" (San Francisco, 2017b). Historic photographs suggest that these vessels were not simply abandoned but were actively salvaged as a "boneyard," which is common vernacular for a breaking yard where obsolete or damaged machinery, equipment, vehicles, and/or vessels are broken up and useable portions repurposed (i.e., salvaged).

These sources of raw materials for the local boat builders were considered an eyesore to the public at large, who bemoaned the presence of these decaying vessels at India Basin Shoreline Park, known as the "Hunters Point Ship Graveyard," in newspaper articles of the era. As described in the archeological technical report (San Francisco, 2017a), by the late 1930s, the Hunters Point Graveyard consisted of the following vessels:

- The *Bay City*, a ferry built at the Fulton Iron Works in San Francisco's North Beach in 1878. She carried commuters between San Francisco and Alameda and later between Vallejo and South Vallejo. In 1930, J. C. Ogden purchased and beached the *Bay City* at Hunters Point. By 1938, "her paneless windows and caved-in deck let fog into the once-plush cabins where three-piece orchestras had once played."
- The *Caroline*, a four-masted schooner built in 1902 on Puget Sound. After 20 years hauling lumber and grain, she was stripped of her machinery and anchored off Hunters Point. In 1932, after a storm beached her, an enterprising sailor, Oscar Baver, "rigged the officers' and crews' space as a six-room house with electric lights, telephone, and running water for himself, and his wife and daughter."
- The *Arrow*, a 147-foot-long ferry that was built in Seattle in 1903. By 1938, nothing remained of her but her bows and two starboard portholes that emerged at low tide.
- The scow *Emma*, which transported hay from Sacramento to San Francisco until her days ended at Hunters Point. Once she was there, a Mr. A. T. Chick mounted her pilot house on stilts and took up residence there. He and the Baver family were apparently neighbors who enjoyed a private lifestyle in the ship graveyard.
- The *Modoc*, a mail boat built in San Francisco in 1880. In 1917, she was sent to the Southern Pacific Shipyards in the Oakland estuary. In 1928, she was taken to Hunters Point and stripped. By 1938, only the timbers of the hull and lower deck remained.

Cultural Resources Baseline Conditions of the Study Areas

Provided above is a prehistoric and historic context of the study area. The following discussion regarding existing cultural resources in the study area is based on the following technical studies:

- *Archeological Survey Report, India Basin Mixed-Use Project*, prepared for the City and County of San Francisco by AECOM (San Francisco, 2017a);
- *India Basin Project Historic Resource Evaluation Report Parts 1 and 2, San Francisco, CA*, prepared by Page & Turnbull (San Francisco, 2017b); and
- *India Basin Transportation Action Plan CEQA Analysis Draft Memorandum* (San Francisco, 2017c).

See Appendix C, "Cultural Resources Supporting Information," for the full reports and memorandum.

Archeological Resources

Overview

Known and potential archeological resources in the project's study area are discussed below. The 2017 archeological survey report (ASR) (San Francisco, 2017a) prepared for the project documented the completion of an archeological field survey of the entire onshore portion of the study area. The ASR included an assessment of the archeological sensitivity of the in-water portions of the study area[3] (Figure 3.4-1) delineated for the respective study area (39.03 acres) and resulted in the identification of a single archeological resource, the Hunters Point Ship Graveyard. As a component of the India Basin Scow Schooner Vernacular Cultural Landscape, this archeological resource is also a contributing element of this CRHR-eligible historical resource.

Owing to modern development, including extensive episodes of filling that have the potential to obscure (bury) archeological resources from view, the ASR also evaluated the archeological sensitivity of the entire study area as delineated for archeological resources. The sensitivity assessment for the entire study area is presented at the end of the discussion in this subsection.

India Basin Shoreline Park Property

During completion of the archeological survey in July 2016, what appeared to represent the remains of at least one, and possibly two, abandoned ships were observed in India Basin Shoreline Park and adjacent tidal waters. The most apparent sunken vessel was identified offshore of India Basin Shoreline Park (Figure 3.4-2). The wreck appeared to be the remains of an iron and wood vessel extending out from under the fill used to create what is now India Basin Shoreline Park. In addition to this vessel, wood and metal fragments possibly associated with a second ship were identified in a small tidal pond/inlet on the eastern side of India Basin Shoreline Park (Figure 3.4-3). These partially submerged vessels are visible on a number of aerial photographs dating to between 1938 and 1956 (Figures 3.4-4 and 3.4-5). As shown in Figure 3.4-5, a vessel is already partially entombed by the filling that would ultimately become India Basin Shoreline Park.

Archival research revealed that the two vessels identified during the pedestrian survey are the ferry *Bay City* and the four-masted schooner *Caroline* (Figure 3.4-6). The *Bay City* and the *Caroline,* along with other vessels including the *Arrow* and *Modoc*, were brought into India Basin, run up into the shallows to enhance accessibility, and scavenged by the local boatbuilding industry before being entombed in fill.

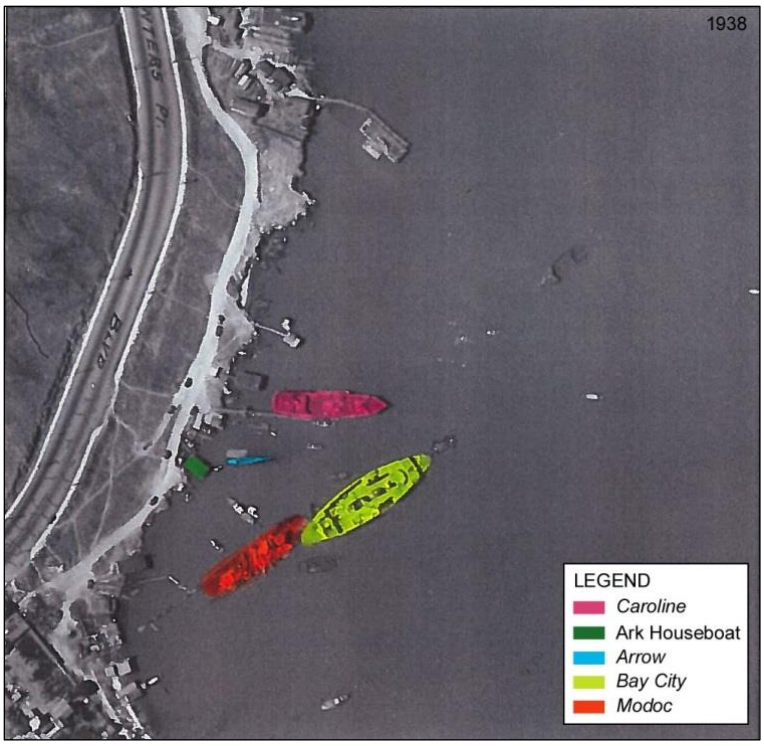
[3] The extreme shallowness of the in water portion of the project area prevented the completion of a geophysical survey to identify archeological resources submerged in the offshore sediments. Instead, potential prehistoric resources were addressed by examining geological data including information on the inundation of the Bay following the last Ice Age. Historic-era archeological resources in the in-water portion of the study area were addressed by utilizing archival research in combination with direct examination of the nearshore portions of the study area during extreme low-tide events.

Source: San Francisco, 2017a

Figure 3.4-2: India Basin Shoreline Park, Remnants of the *Bay City*, View Northeast

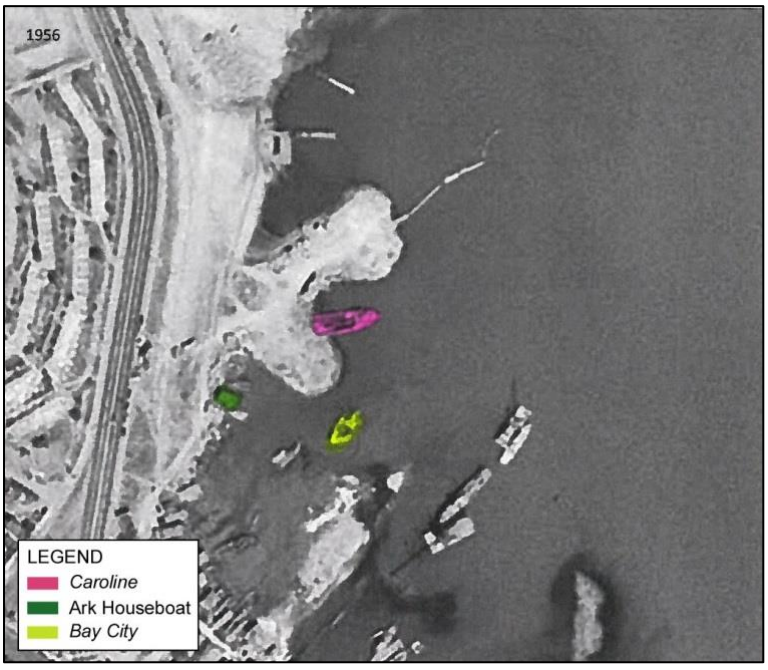
Source: San Francisco, 2017a

Figure 3.4-3: India Basin Shoreline Park, Remnants of *Caroline* Entombed in Fill and Tidal Pond/Inlet, View North



Source: David Rumsey Historical Map Collection

Figure 3.4-4: 1938 Ryker Aerial Photograph with Vessels Composing the Hunters Point Ship Graveyard in Various States of Repair, Vicinity of Today's India Basin Shoreline Park



Source: EDR Aerial Photograph Package

Figure 3.4-5: Hull of the *Caroline* Partially Entombed in Fill circa 1956, Vicinity of Today's Tidal Pond/Inlet within India Basin Shoreline Park. One End of *Bay City* Seen Rising Above Waters Just to the South (below in frame)

Source: O'Brien, 2005

Figure 3.4-6: Schooner *Caroline* and Ferry *Bay City* in Hunters Point Ship Graveyard circa 1934–1935

The vessels that compose the Hunters Point Ship Graveyard were brought into India Basin to be scavenged by the local boat builders and evidence exists that they were already in place in the 1930s. Therefore, the identified remains were recorded as both archeological resources and contributing elements of the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape, which has been found eligible for listing in the CRHR (San Francisco, 2017a and 2017b) (see "Historic Architectural Resources" below).

In addition to the remains of the *Bay City* and *Caroline*, a number of scattered historic-period artifacts were identified across the study area. None, however, appeared to be in situ. These dispersed historic-period artifacts do not represent NRHP- and/or CRHR-eligible resources.

900 Innes, India Basin Open Space, and 700 Innes Properties

No in situ archeological resources were identified during the pedestrian survey at the 900 Innes, India Basin Open Space, and 700 Innes properties. Sparse historic-period artifacts, including majolica and Chinese brown glazed stoneware, were noted in the Bay Mud on the 900 Innes property. Construction materials, sparse historic-period artifacts including ceramics and glass, modern debris, and possible redeposited pier/wharf pilings were identified on the 700 Innes property. None of these resources were intact, although this does not preclude the presence of intact subsurface features on these parcels. Based on background research, the entire study area as pertaining to archeological resources is considered to exhibit elevated levels of archeological sensitivity, for both prehistoric and historic-period archeological resources (Figure 3.4-7).

Archeological Sensitivity of the Entire Study Area

No evidence of prehistoric use of the study area was identified during the current investigation. The lack of visible evidence does not eliminate the potential for prehistoric archeological resources. Throughout the Bay Area, prehistoric archeological deposits completely obscured from view have been uncovered during construction

activities. In addition, deeply buried prehistoric deposits have been identified during geoarcheological investigations, including in San Francisco. Recently, geoarcheological work conducted for the San Francisco Public Utilities Commission has identified an intact archeological deposit buried beneath modern development approximately 1 mile northwest of the study areas. The natural setting of India Basin/Hunters Point with freshwater springs emanating from the ridgeline across Innes Avenue and easy access to the Bay was a draw to the indigenous peoples of the area, as evidenced by the archeological sites found both east and south of the study area. As such, the areas landside of the 1859 shoreline are considered to be of high archeological sensitivity for prehistoric resources while the shallows just beyond are of elevated sensitivity for the same class of resource (Figure 3.4-7).

Stronger evidence exists to suggest that historic-period archeological resources may likewise lie buried within the study area. Archival evidence indicates that the area along Innes Avenue was settled by at least the 1870s with numerous residences and businesses situated along the street, especially west of Arelious Walker Drive. The archeological survey report found a high potential for historical archeological resources to remain in situ in the study area, particularly resources associated with the 19th- and early-20th-century occupancy of India Basin by early Euro-American boat builders and Chinese shrimp fishermen (San Francisco, 2017a). Such resources could include refuse deposits, structural foundations, and privy pits. In addition, historical maritime archeological resources identified in the study area, specifically those related to the local boatbuilding industry during this period, could be contributing features to the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape.

Other features of the local boatbuilding industry in the India Basin Scow Schooner Boatyard could lie buried in the layer of fill that covers much of the onshore portion of the study area. These potentially buried features include additional vessels beyond those discussed above, as well as the remains of marine ways,[4] wooden piers, and catwalks that once extended out from the shoreline into the shallow waters of India Basin (San Francisco, 2017a). When fill was brought in during the reclamation efforts of the 20th century, these features may have become entombed within these imported soils.

It thus appears that the entire study area is of elevated sensitivity for archeological resources, both prehistoric and historic (Figure 3.4-7). Specifically, there is high potential for buried prehistoric archeological deposits in the south-southwestern reaches of the study area, corresponding to the area upland of the 1859 shoreline, and elevated sensitivity for buried prehistoric archeological resources in the areas lying offshore of the 1859 shoreline, owing to the presence of possible buried stable landforms beneath the Bay Mud (albeit to a lesser degree of sensitivity). These same areas of the study area also have a high potential for harboring historic-period archeological resources, particularly those resources associated with the 19th- and early-20th-century occupancy of India Basin by early Euro-American boat builders and Chinese shrimp fisherman. It can be assumed that all proposed ground-disturbing activities associated with project implementation including building construction, utility installation, and streetscape upgrades have the potential to encounter buried archeological resources.

[4] Also referred to as a "marine railway," a marine way consists of a pair of inclined tracks extending into the water so that a ship can be hauled up and out of the water for cleaning or repairs. Marine ways are also used to launch newly constructed vessels.

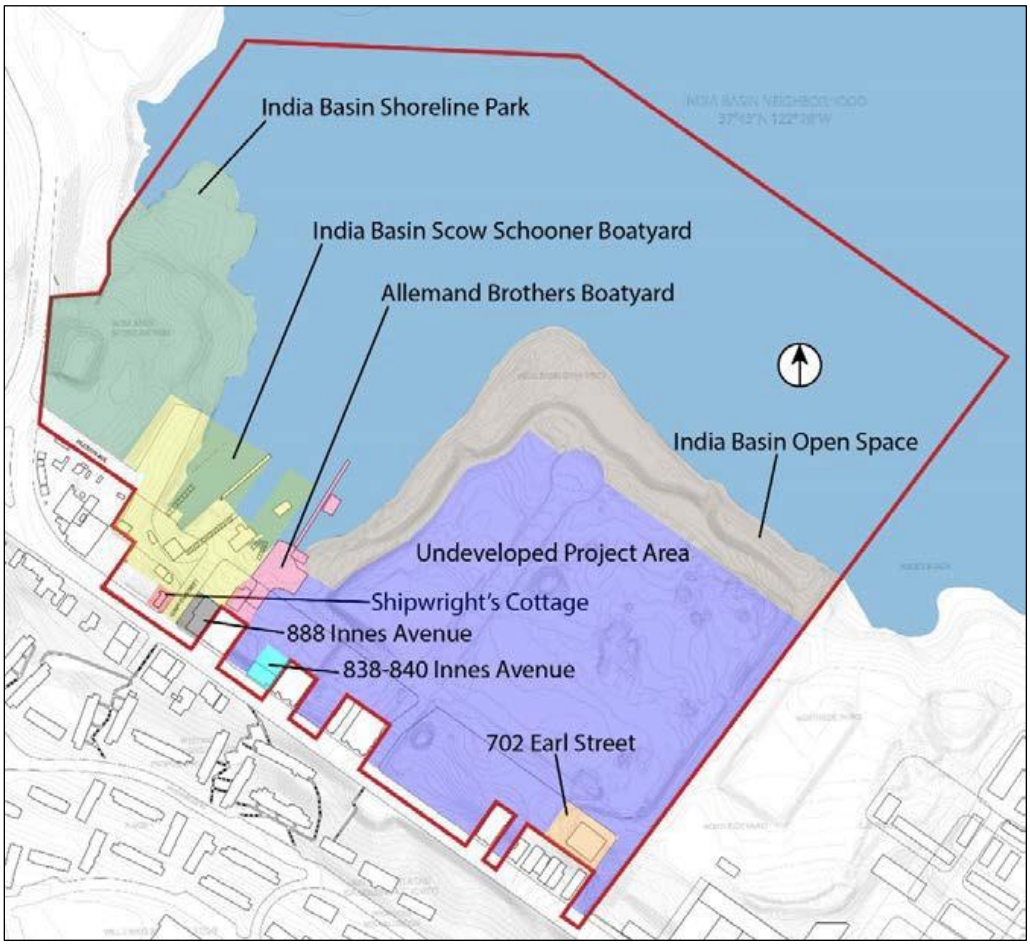
Source: USCS, 1859 map; Source: San Francisco, 2017a; compiled by AECOM in 2017

Figure 3.4-7: Archeological Sensitivity of the Archeological Study Area

Historic Architectural Resources

Overview

Historic architectural/built environment resources in the study area are discussed below. The 2017 HRE report (San Francisco, 2017b) evaluated five properties, or subareas, in the architectural history study area that have been determined to be more than 50 years in age, and thus considered potentially eligible for listing in the CRHR. These subareas are the Shipwright's Cottage at 900 Innes Avenue; the India Basin Scow Schooner Boatyard site at 900 Innes Avenue; 702 Earl Street; 838-840 Innes Avenue; and the Allemand Brothers Boatyard site. Four additional properties under study in the HRE report included the 700 Innes Avenue (undeveloped study area), 888 Innes Avenue, India Basin Shoreline Park, and India Basin Open Space property. See Figure 3.4-8 for the locations of resources under study.



Source: San Francisco, 2017b; compiled by AECOM in 2017

Figure 3.4-8: Subareas and Properties of the Project Site under Study for Historic Architectural Resources

The findings in the HRE report indicated that three CRHR-eligible properties exist in the study area: the Shipwright's Cottage on the 900 Innes property; the India Basin Scow Schooner Boatyard and the scavenged ship hulls of the Hunters Point Ship Graveyard as a vernacular cultural landscape; and the former boatyard building at

702 Earl Street. These properties are therefore considered historical resources for the purpose of review under CEQA. See Table 3.4-1 for a summary of the historical resource status of each property.

Table 3.4-1: Summary of Historic Architectural Properties in the Study Areas as Potential Historical Resources

Project Identifier/ Location	Resource Identifier	Address/Resource Name or Type and Description	Period of Significance	Historical Resource for CEQA (yes/no)	Historical Resource Applicable Criteria
900 Innes property	Shipwright's Cottage	900 Innes Avenue, San Francisco/vacant residence	1875	Yes	CRHR Criterion 1 (Events), Criterion 3 (Architecture); Article 10 San Francisco Landmark #250. Note: Also a contributor to India Basin Scow Schooner Boatyard Vernacular Cultural Landscape
900 Innes property	India Basin Scow Schooner Boatyard	900 Innes Avenue, San Francisco/ vernacular cultural landscape	1875–1936	Yes	CRHR Criterion 1 (Events)
700 Innes property	702 Earl Street	702 Earl Street, San Francisco/former boatyard building	1935–1936	Yes	CRHR Criterion 3 (Architecture)
700 Innes property	838-840 Innes Avenue	838-840 Innes Avenue, San Francisco/mixed-use building	N/A	No	Not eligible as a historical resource
700 Innes property	Allemand Brothers Boatyard	Assessor's Parcel Number 4630/006, 4645/010	N/A	No	Not eligible as a historical resource
700 Innes property	700 Innes Avenue/ undeveloped land area	Assessor's Parcel Number Blocks 4606, 4607, 4620, 4621, 4630, 4631, 4644, 4655/undeveloped land	N/A	No	Not eligible as a historical resource
700 Innes property	888 Innes Avenue	888 Innes Avenue, San Francisco	N/A	No	Not eligible as a historical resource
India Basin Shoreline Park	Hunters Point Ship Graveyard	Assessor's Parcel Number Blocks 4605, 4622, 4629/park/vernacular cultural landscape	1875–1936	Yes	CRHR Criterion 1 (Events). The hulls that comprise the Hunters Point Ship Graveyard including the *Caroline* and *Bay City* are contributors to the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape
India Basin Open Space	India Basin Open Space	Assessor's Parcel Number Blocks 4596, 4597, 4606, 4621, 4630/open space	N/A	No	Not eligible as a historical resource

Notes: CEQA = California Environmental Quality Act; CRHR = California Register of Historical Resources; N/A = not applicable
Source: San Francisco, 2017b

Three CRHR-eligible properties have been identified in the study area: the Shipwright's Cottage (previously designated as San Francisco Landmark #250 under Article 10 of the San Francisco Planning Code [Planning Code]); the India Basin Scow Schooner Boatyard site including the hulls of the Hunters Point Ship Graveyard, as a vernacular cultural landscape; and the former boatyard building at 702 Earl Street. These properties are therefore considered historical resources for the purpose of review under CEQA. The following also discusses the CRHR evaluation criteria, the resources' historic integrity, and character-defining features or contributing/ noncontributing features.

900 Innes Property

Shipwright's Cottage

As discussed in the 2017 HRE report (San Francisco, 2017b), the Shipwright's Cottage, constructed ca. 1875 and currently with the address of 900 Innes Avenue, is one of the oldest known residences remaining in the India Basin area (Figure 3.4-9). The Shipwright's Cottage was constructed as an early component of the isolated working-class settlement of shipbuilders at India Basin, whose community and string of boatyards along the shore characterized the Hunters Point peninsula during the final decades of the 19th century.

Building History: The first property owner was Johnson Dircks, a shipwright born in the Netherlands who was among the first European immigrants to arrive at India Basin. Given his carpentry skills, it seems likely that Dircks constructed the cottage himself, although this has not been confirmed. No original permit or drawings appear to exist for the building, which is not uncommon for vernacular building types. Dircks operated a boatyard on the shore of India Basin immediately behind the house, where he built a number of scow schooners that were used for freight transportation throughout the Bay Area. The Shipwright's Cottage is City Landmark No. 250, and was found individually eligible for the CRHR, as well as a contributing feature to the India Basin Scow Schooner Yard Vernacular Cultural Landscape, discussed in further detail below.

Source: San Francisco, 2017b

Figure 3.4-9: Shipwright's Cottage (built circa 1875) in 2016

Evaluation/Historical Resource Status: The Shipwright's Cottage has been evaluated previously for NRHP eligibility, CRHR eligibility, and San Francisco Article 10 Landmark status. The evaluation of CRHR eligibility has not been officially adopted. The previous evaluations have specified that the building is an individually significant historic resource under NRHP and CRHR Criteria A/1 (Events) and C/3 (Architecture).

California Register of Historical Resources Criterion 1. The 2017 HRE report found that the Shipwright's Cottage is significant as an individual resource under CRHR Criterion 1, as it conveys the residential development of the remote India Basin neighborhood during the last quarter of the 19th century. Constructed ca. 1875 by shipwright Johnson Dircks, the residence was among the first buildings constructed in the small residential and working community alongside India Basin. Therefore, the Shipwright's Cottage is a rare example of a residence conveying the significant development of India Basin before the 20th century. Its period of significance under Criterion 1 is 1875, signifying the building's year of construction.

California Register of Historical Resources Criterion 3. The 2017 HRE report found that the Shipwright's Cottage is individually eligible for the CRHR under Criterion 3, as a distinctive example of vernacular architecture in southeastern San Francisco. The residence was constructed ca. 1875 as part of the very small and remote community of shipwrights clustered alongside India Basin. The building's relatively simple massing and wood-frame construction typify vernacular building activity in the India Basin neighborhood during this early period of its development. Yet the residence still conveys an elevated level of design, specifically through its stylized sawn bargeboard and Italianate window and door hoods at the Innes Avenue façade. The Shipwright's Cottage thus interpreted the architectural styles (particularly the Italianate) being employed in middle- and upper-class neighborhoods in the core areas of San Francisco, yet at a restrained scale appropriate to a working-class residence. The Shipwright's Cottage embodies the distinctive characteristics of an Italianate worker's cottage dating from the mid- to late-19th century in San Francisco, and possesses high artistic values. The period of significance for the Shipwright's Cottage under Criterion 3 is 1875, signifying the building's year of construction.

Integrity: Overall, the Shipwright's Cottage retains sufficient historic integrity to convey its significance as a residence built during the last quarter of the 19th century in the India Basin neighborhood associated with the shipwright community in India Basin, and as a rare remaining example of workman vernacular architecture that includes traits of several Victorian-era architectural styles. While the setting has been diminished, the building retains sufficient integrity of location, design, materials, workmanship, feeling, and association to its period of significance (1875) and is considered a historical resource for the purposes of CEQA.

Character-Defining Features: Based on the building's previously defined period of significance, the following are considered as character-defining features of the Shipwright's Cottage. Note that the final two listed items may date to after 1875 but fall within the period of significance for the India Basin Scow Schooner Boatyard site (1875–1936), which is evaluated in a following section and includes the Shipwright's Cottage as a contributing property.

- General massing including rectangular plan of core volume
- Front-gabled roof form with front entry
- Rustic channel wood siding
- Decorative features at windows and door on primary façade: architraves with scrolled brackets; bracketed window sills; upper transom panels; window and door hoods

- One-over-one wood-sash windows, if extant (closer inspection is required)
- Exposure of basement at building rear
- Masonry chimney stack alongside rear gable
- Wood-paneled doors
- Molded window trim at secondary façades: central window at northwest façade; two windows at southeast façade
- Wood corner boards
- Historic arrangement of interior spaces
- Location at intersection of Innes Avenue and Griffith Street right-of-way (ROW), with primary façade at Innes Avenue
- Sloping lot
- Shed-roofed rear wing (constructed before 1900; possibly original) (assumed character-defining feature)
- Northwest shed–roofed addition (constructed before 1900) (assumed character-defining feature)

India Basin Scow Schooner Boatyard

The India Basin Scow Schooner Boatyard Vernacular Cultural Landscape includes the following features: the Bay, roads and paths, structures such as marine ways and docks, staging and storage areas, and buildings, including the aforementioned Shipwright's Cottage, that were in use between 1875 and 1936 (see Table 3.4-2 and Figure 3.4-10). In addition, it should be noted that any historical maritime archeological resources identified in the study areas,[5] specifically those related to the local boatbuilding industry during this period, are considered contributing features to the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape. As mentioned above, the remains of the *Bay City* and *Caroline* discovered within the limits of India Basin Shoreline Park and the immediate offshore area have been recorded as archeological contributing elements to the cultural landscape (San Francisco, 2017a and 2017b).

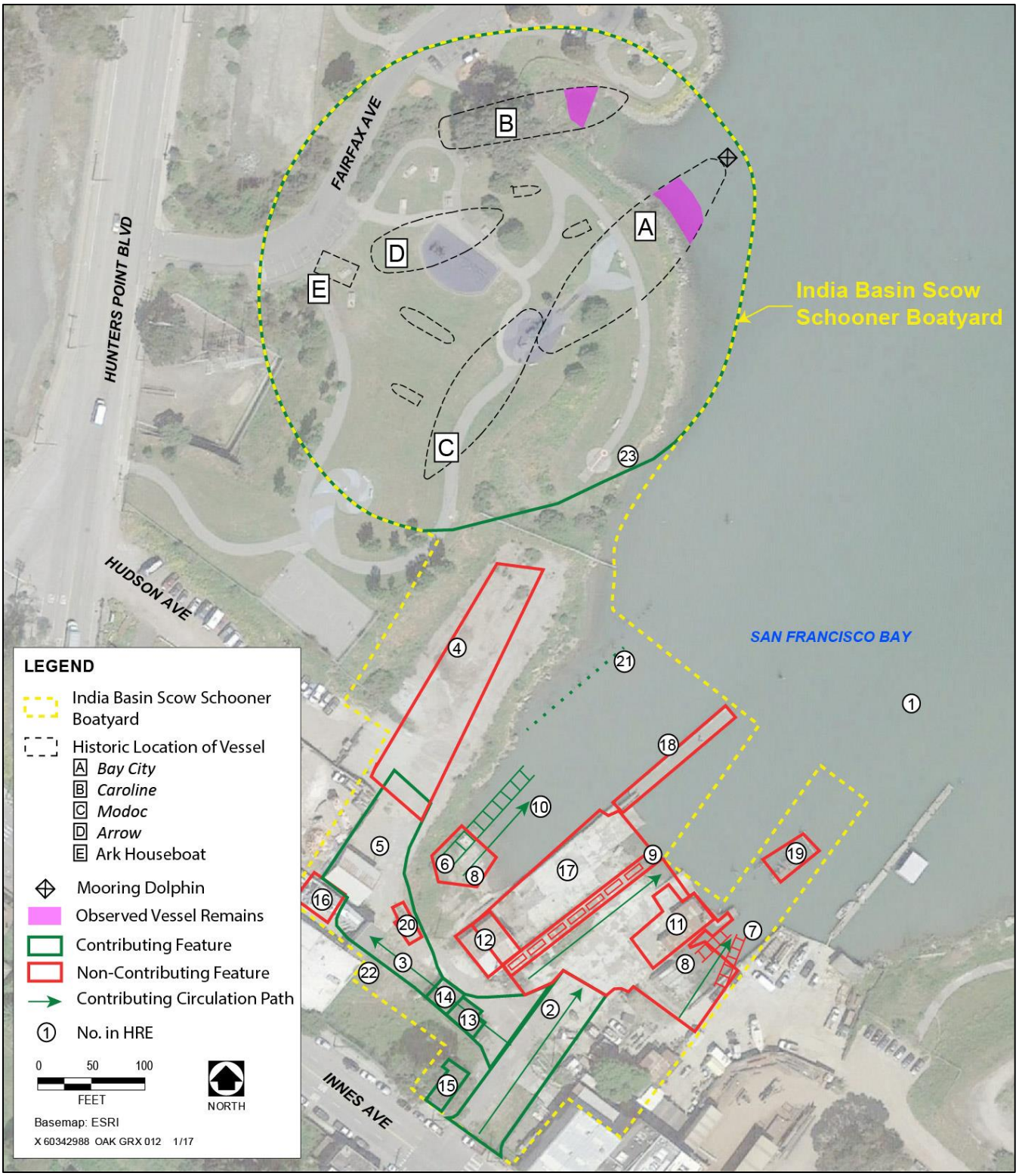
The boatyard's period of significance begins in 1875, the year that Johnson Dircks established a boatyard at the site, and extends to 1936, when the Bay Bridge between San Francisco and Oakland was completed. The bridge represents the expansion of vehicle transportation and the decline of the local shipping industry in the Bay Area, and thus also marks the end of the era in which wood watercraft (the boatyard's specialty) were integral to the Bay Area's transport economy (San Francisco, 2017b).

[5] The remnants of the Hunters Point Ship Graveyard, including the hulls of the *Bay City* and *Caroline*, are not situated within the 900 Innes property, but within the confines of India Basin Shoreline Park immediately to the north (see Figure 3.4-10).

Table 3.4-2: Character-Defining Features of the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape

Number in Figure 3.4-10 and Name of Feature	Year Constructed	Character-defining? Y/N
1. India Basin/San Francisco Bay	N/A	Yes
2. Griffith Street right-of-way	Pre-1935	Yes
3. Path between Griffith Street and west marine ways	Pre-1935	Yes
4. West storage and staging yard	1979–1989	No
5. Historic storage and staging yard	Pre-1935	Yes
6. West marine way tracks	Pre-1935	Yes
7. East marine way tracks	1938–1946	No
8. Poured concrete ramp surfaces at east and west marine ways	ca. 1940s	No
9. Central construction way ramp and marine way foundation	1959–1969 (ramp); 1997–2005(foundation)	No
10. Circulation routes and water access at marine ways	Pre-1900	Yes
11. Blacksmith and machine shop	1938–1946	No
12. Paint shop and compressor house	1938–1946	No
13. Boatyard Office building	1919–1935	Yes
14. Tool Shed and Water Tank building	Before 1900	Yes
15. Shipwright's Cottage	ca. 1875	Yes
16. Storage building	1979–1989	No
17. Concrete wharf	1989–1997	No
18. Modern dock	ca. 1980s	No
19. East outfitting dock	1938–1946	No
20. Steel road undergirding	1938–1946	No
21. Water fence posts	Pre-1935	Yes
22. Sewer standpipe	Unknown (does not appear age-eligible)	No
23. Hunters Point Ship Graveyard (archeological)	ca. 1920s–1930s	Yes
Construction debris throughout site	ca. 2000s	No
Views east toward San Francisco Bay and the East Bay hills	N/A (natural feature)	Yes
Gradual slope from Innes Avenue to India Basin	N/A (natural feature)	Yes

Notes: ca. = circa; N/A = not applicable
Source: San Francisco, 2017b.



Sources: Google Earth 2017, San Francisco, 2017b; compiled by AECOM in 2017

Figure 3.4-10: India Basin Scow Schooner Boatyard Vernacular Cultural Landscape

The property's character is expressed by a range of built and natural features that date to its decades-long use as a boatbuilding and repair yard, including six buildings, four structures, and several small-scale features in addition to topography, views, and bodies of water (see Figure 3.4-10 and Table 3.4-2). These features continue to convey the spatial and functional relationships that defined the yard's operations and can be internal to or external to the property boundaries. As a result, the boatyard site is most appropriately defined as a vernacular cultural landscape, a type of property that has "evolved through use by the people whose activities or occupancy shaped that landscape. Through social or cultural attitudes of an individual, family, or a community, the landscape reflects the physical, biological, and cultural character of those everyday lives" (NPS, 2017a). Accordingly, the various physical attributes and ecological characteristics of the property have the potential to convey its historical qualities including spatial organization and land patterns, topography, vegetation, circulation, water features, site furnishings, buildings, structures, and objects.

Cultural landscapes are composed of a collection of features that are organized in space. Individual features in the landscape should never be viewed in isolation, but in relationship to the landscape as a whole. Each situation may vary, and some features may often be more important than others. For example, circulation may be an important historical element in one landscape, while in another it may have little if any significance. Overall, it is the arrangement and the interrelationship of these character-defining features as they existed during the period of significance that is most critical to consider before treatment. As such, landscape features should always be assessed as they relate to the property as a whole (NPS, 2017a).

Evaluation/Historical Resource Status: California Register of Historical Resources Criterion 1. The India Basin Scow Schooner Boatyard site, a boatbuilding and boat repair yard in operation beginning in the 1870s, is a historically significant site under CRHR Criterion 1, for its associations with San Francisco's wood scow schooner building and repair industry that was centered at India Basin. Scow schooners were integral to the transportation of goods throughout the Bay Area during the late 19th and early 20th centuries, before the era of widespread automobile use and bridge construction. The remote settlement of immigrant shipwrights at India Basin was responsible for building and repairing such vessels and represented an important working community that, while off the beaten path, supported the region's economy through skilled workmanship. Because of gradual development around India Basin and dramatic infilling of the shoreline, much of the landscape conveying the previous era of shipbuilding no longer exists. As the site of the longest consecutively operating boatyards at India Basin, the India Basin Scow Schooner Boatyard is the best remaining physical representation of the area's significant working-class community.

The beginning of the boatyard's period of significance is 1875, the year that Johnson Dircks established a boatyard at the site, which was later acquired by Henry Anderson and expanded as the Anderson & Cristofani Boatyard to 1936, when the Bay Bridge between San Francisco and Oakland was completed, represents the expansion of automobile transportation and shipping routes throughout the Bay Area and marks the end of the era in which wood watercraft (the boatyard's specialty) were integral to the Bay Area's transport economy.

Integrity: Some aspects of the site's integrity, namely materials and workmanship, are somewhat compromised. Most features within the property have been neglected and are in various states of decay and collapse, or are heavily overgrown to the point that original materials, design features, and workmanship cannot be fully conveyed. In spite of these issues, enough features remain at the site to convey the important overall functional relationships that have characterized the boatyard for many decades. The India Basin Scow Schooner Boatyard is

therefore considered to have adequate overall integrity to convey its historical significance and is considered a historical resource for the purposes of CEQA.

Character-Defining Features: The character-defining features of the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape include the India Basin/San Francisco Bay location itself, with a gradual slope from Innes Avenue to India Basin; views east toward the Bay and the East Bay hills; and circulation patterns including the Griffith Street ROW, the path between Griffith Street and the west marine ways, and the circulation routes between the water access at the marine ways. Character-defining buildings and structures include the Boatyard Office building, Tool Shed and Water Tank building, the Shipwright's Cottage, the west marine way tracks, water fence posts, the Hunters Point Ship Graveyard, and the historic storage and staging yard area. See Table 3.4-2 for full list of character-defining and non-character-defining elements within the boundary of the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape.

700 Innes Property

702 Earl Street

William Heerdt constructed the building located at 702 Earl Street in 1935–1936 to support his boatyard (Figure 3.4-11). Although few details have been uncovered to describe the operations of this boatyard, it was established just as India Basin's important boatbuilding and repair era was closing. Reportedly, Heerdt and his partner Staddcutter constructed the timber-framed building of salvaged wood, although the source of these materials is unknown. Regardless, the building was unique in the neighborhood through its large scale and heavy timber construction, which was not otherwise used in the more modest residences and boatyard buildings along the shore of India Basin.

Source: San Francisco, 2017b

Figure 3.4-11: 702 Earl Street Building in 2016

Evaluation/Historical Resources Status: California Register of Historical Resources Criterion 3. The building at 702 Earl Street, constructed ca. 1935 to support William Heerdt's boatyard as a combined repair shop and residence, is significant under CRHR Criterion 3 (Architecture) as a massive and distinctive timber-framed industrial building, constructed by Heerdt and Staddcutter. Historical photographs from the time of the building's construction indicate that it was the largest and most imposing building located in the India Basin area. The building was distinct from the surrounding residences and boatyard buildings through its scale and its solid, heavy timber framing—a construction method that was typical in the United States during the 18th and 19th centuries but increasingly rare in later periods (apart from during wartime when steel was at a premium). The scale and technique of the building represents a notable advance in India Basin building that nonetheless is in keeping with the all-wood material palette and do-it-yourself construction ethos that had characterized the neighborhood until just before World War II, as the area remained isolated from the modernizing building trends of broader San Francisco. The building at 702 Earl Street is an unusual and impressive industrial building that does not appear to have a match elsewhere in San Francisco. The building's period of significance is its dates of construction, 1935–1936.

Integrity: Overall, 702 Earl Street retains sufficient integrity to express its significance as a unique industrial building dating to the end of India Basin's boatbuilding era. The setting has been changed substantially, as have aspects of its historical design and materials. Because of the building's long-term industrial character, however, such changes are not surprising. As the building at 702 Earl Street's architectural significance derives from its character-defining massing, form, and historical materials—all of which remain to an extent—it continues to convey its overall character as a significant vernacular industrial building in the India Basin neighborhood. Thus, the building is considered a historical resource for the purposes of CEQA.

Character-Defining Features: Based on the building's previously defined period of significance, the following are considered as character-defining features of 702 Earl Street:

- Generally square plan and robust, even massing
- Gabled roof form with central monitor
- Wood shiplap siding
- Timber framing system
- Pattern of horizontally oriented windows
- Third-story porch at primary façade
- Primary façade facing water

Streetscape

Page & Turnbull conducted a subsequent site visit in July 2017 to supplement the HRE and record current site conditions of the streetscape and intersections that would be improved, and to identify any potential historic resources within the public ROW within the action plan area. This effort was in support of the *India Basin Transportation Action Plan* element of the project. The survey of the area where streetscape and roadway improvements would occur revealed asphalt-paved roadways lined by concrete curbing, as well as concrete- and asphalt-paved sidewalks in most areas. Sidewalks are absent along the southwestern edge of Innes Avenue, where the Hunters Point Ridge slopes steeply toward the roadway with exposed rock outcroppings. Common features

located within the public ROW include wood utility poles with attached street lights; fire hydrants; bicycle racks; one modern Muni bus shelter; traffic, parking, and street identification signage on metal posts; street trees, in some instances surrounded by protective metal grating; and trash receptacles. Innes Avenue's intersections with Hunters Point Boulevard and Griffith Street feature striping for pedestrian crossings; Innes Avenue's intersections with Arelious Walker Drive and Donahue Street feature curb ramps with tactile paving. None of the observed features within the public ROW appears to be more than 50 years old. The observed features in the public ROW within the *India Basin Transportation Action Plan* area are standard features typical of most streets in San Francisco. None appears to have the potential to contribute to the significance and historic setting of identified historic resources (San Francisco, 2017c).

3.4.2 Regulatory Framework

Cultural resources include archeological, Native American, traditional, and built-environment resources, including but not necessarily limited to buildings, structures, objects, districts, and sites. Numerous laws, regulations, and statutes on the federal, State, and local levels seek to protect and target the management of cultural resources. Federal, State, and local regulations targeting the management of cultural resources that are applicable to the proposed project and variant are described below.

Federal

The project has several federal actions related to the project, including funding for soil remediation activities from the U.S. Environmental Protection Agency and various permitting requirements of the U.S. Army Corps of Engineers and U.S. Fish and Wildlife Service. Because of the federal involvement, including both federal funds and permits, the project is considered a federal undertaking as defined in 36 CFR Section 800.16(y), thereby necessitating compliance with Section 106 of the National Historic Preservation Act.

Pending final design and permitting requirements, either the U.S. Army Corps of Engineers or the U.S. Environmental Protection Agency would be the federal lead agency and would oversee compliance with the National Environmental Policy Act (NEPA) and NHPA Section 106. Federal review would occur and these pertinent federal regulations would be assessed in separate NEPA and NHPA Section 106 documentation.

State

State CEQA Guidelines Section 15064.5(a) —CEQA Definition of Historical Resources

State CEQA Guidelines Section 15064.5(a), in Title 14 of the California Code of Regulations, defines a "historical resource" as:

(1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources.

(2) A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements of section 5024.1(g) of the Public Resources Code, 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.

(3) 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.

(4) 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 section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1(j) or 5024.1.

Therefore, under the State CEQA Guidelines, even if a resource is not included on any local, State, or federal register, or identified in a qualifying historical resources survey, a lead agency may still determine that any resource is a historical resource for the purposes of CEQA if there is substantial evidence supporting such a determination. A lead agency must consider a resource to be historically significant if it finds that the resource meets the criteria for listing in the CRHR.

Archeological and historical sites are protected pursuant to a wide variety of State policies and regulations, as enumerated in the Public Resources Code (PRC). Cultural resources are recognized as nonrenewable resources and receive additional protection under the PRC and CEQA.

State CEQA Guidelines Section 15064.5[a][3]—California Register of Historical Resources Criteria

In addition to assessing whether historical resources that may be affected by a proposed project are listed or have been identified in a survey process, lead agencies have a responsibility to evaluate them against the CRHR criteria before making a finding regarding the project's impacts on historical resources (PRC Section 21084.1 and State CEQA Guidelines Section 15064.5[a][3]). In general, under this approach, a historical resource is defined in Section 15064.5(a)(3) of the State CEQA Guidelines as any object, building, structure, site, area, place, record, or manuscript that:

(1) is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(2) is associated with the lives of persons important in our past;

(3) 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; or

(4) has yielded, or may be likely to yield, information important in prehistory or history.

State CEQA Guidelines Section 15064.5[d]—Effects on Human Remains

Native American human remains and associated burial items may be significant to descendant communities and/or may be scientifically important for their informational value. They may be significant to descendant communities for patrimonial, cultural, lineage, and religious reasons. Human remains may also be important to the scientific community, such as prehistorians, epidemiologists, and physical anthropologists. The specific stake of some descendant groups in ancestral burials is a matter of law for some groups, such as Native Americans (State CEQA Guidelines Section 15064.5[d]; PRC Section 5097.98). CEQA and other State regulations regarding Native American human remains provide the following procedural requirements to assist in avoiding potential adverse effects on human remains within the contexts of their value to both descendant communities and the scientific community:

- When an initial study identifies the existence or probable likelihood that a project would affect Native American human remains, the lead agency is to contact and work with the appropriate Native American representatives identified through the NAHC to develop an agreement for the treatment and disposal of the human remains and any associated burial items (State CEQA Guidelines Section 15064.5[d]; PRC Section 5097.98).
- If human remains are accidentally discovered, the county coroner must be contacted. If the county coroner determines that the human remains are Native American, the coroner must contact the NAHC within 24 hours. The NAHC must identify the most likely descendant (MLD) to provide for the opportunity to make recommendations for the treatment and disposal of the human remains and associated burial items. If the MLD fails to make recommendations within 24 hours of notification or the project applicant rejects the recommendations of the MLD, the Native American human remains and associated burial items must be reburied in a location not subject to future disturbance within the project site (PRC Section 5097.98).
- If potentially affected human remains or a burial site may have scientific significance, whether or not it has significance to Native Americans or other descendent communities, then under CEQA, the appropriate mitigation of effect may require the recovery of the scientific information of the remains/burial through identification, evaluation, data recovery, analysis, and interpretation (State CEQA Guidelines Section 15064.5[c][2]).

Assembly Bill 52—Effects on Tribal Cultural Resources

AB 52 amended the CEQA statute to identify an additional category of resource to be considered under CEQA, called "tribal cultural resources." It added PRC Section 21074, which defines "tribal cultural resources" as follows:

> (a) "Tribal cultural resources" are either of the following:
>
> (1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
>
> A) Included or determined to be eligible for inclusion in the CRHR.
>
> B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Local

San Francisco Preservation Bulletin No. 16—Planning Department CEQA Review Procedures for Historical Resources

San Francisco Preservation Bulletin No. 16, the Planning Department's CEQA Review Procedures for Historical Resources (San Francisco, 2008), provides guidance for the CEQA review process with regard to historical resources. As a certified local government and the lead agency in CEQA determinations, the City has instituted guidelines and a system for initiating CEQA review of historical resources. Although resources that are eligible for listing in the NRHP and CRHR are generally at least 50 years old, the Planning Department's policy is to review cultural resources 45 years or older. San Francisco Preservation Bulletin No. 16 incorporates the State CEQA Guidelines into the City's existing regulatory framework.

To facilitate the CEQA review process, the Planning Department has established categories that classify historical resources based on their evaluation and/or inclusion in specific registers or cultural resource surveys. San Francisco Preservation Bulletin No. 16 (San Francisco, 2008) lists the following categories:

Category A.1 Resources listed on or formally determined to be eligible for the CRHR. These properties are considered historical resources under CEQA.

Category A.2 Resources listed on adopted local registers, and properties that have been determined to appear or may become eligible, for the CRHR. These properties are considered historical resources under CEQA.

Category B Properties requiring further consultation and review.

Category C Properties determined not to be historical resources or properties for which the City has no information indicating that the property is a historical resource. These properties are not considered historical resources under CEQA.

Any future action related to the implementation of the proposed project or variant that includes alteration or demolition of a Category A or B property would be subject to project-specific environmental review that would evaluate potential impacts on historical resources before any discretionary City approval. For those properties that are known historical resources and for any buildings that are determined to be historical resources through further evaluation, the Planning Department's CEQA Review Procedures generally require that future projects be designed in accordance with the Secretary of the Interior's Standards (SOI Standards) to avoid a significant impact.

San Francisco Planning Code, Articles 10 and 11—San Francisco List of Historic Landmarks

The City maintains a list of locally designated City landmarks and historic districts that is similar to the NRHP but applies at the local level. Landmarks can be buildings, sites, or landscape features. Districts are defined generally as areas of multiple historic resources that are contextually united. As described further below, the regulations governing City landmarks and the list of individual landmarks and descriptions of each historic district are found in Articles 10 and 11 of the Planning Code. Owners of landmark properties, or of contributors to historic districts, may be eligible for property tax relief and other incentives. Preservation Bulletins Nos. 5, 9, and 10, published by the Planning Department, provide additional information about Article 10 and 11 landmarks, historic districts, and the landmark designation process (San Francisco, 2004). San Francisco Preservation Bulletin No. 5 states that the San Francisco Historic Preservation Commission (formerly Landmarks Preservation Advisory Board) and the Planning Commission use the NRHP criteria for evaluating potential historic properties.

3.4.3 Impacts and Mitigation Measures

Significance Thresholds

The thresholds for determining the significance of impacts in this analysis are consistent with the environmental checklist in Appendix G of the State CEQA Guidelines, which has been modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the proposed project or the variant would result in a significant impact related to Cultural Resources. Implementation of the proposed project or the variant would have a significant effect on Cultural Resources if the proposed project or variant would:

- cause a substantial adverse change in the significance of a historical resource as defined in State CEQA Guidelines Section 15064.5, including those resources listed in Article 10 or Article 11 of the Planning Code;
- cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5;
- disturb any human remains, including those interred outside of formal cemeteries pursuant to California Health and Safety Code Section 7050.5; or
- cause a substantial adverse change in the significance of a tribal cultural resource as defined in PRC Section 21074.

Approach to Analysis

This section identifies project-level impacts on historic architectural and archeological cultural resources. A project may have an impact on a historical resource, and that impact may or may not impair the resource's eligibility for inclusion in the CRHR. If an identified impact would leave a resource no longer able to convey its significance, meaning that the resource would no longer be eligible for listing in the CRHR, then the project's impact would be considered a significant adverse change. According to PRC Section 15126.4(b)(1) (State CEQA Guidelines), if a project adheres to the SOI Standards, the project's impact "shall generally be considered mitigated below a level of significance and thus is not significant."

Note that no potential exists for operational impacts to occur relative to any of the significance criteria under either the proposed project or variant. *No impact* on cultural resources would occur during project operation. All of the following impacts of the proposed project or variant on cultural resources would occur only during construction. Additionally, the potential contribution of the proposed project or variant to cumulative impacts on cultural resources is evaluated in the context of existing, proposed, and reasonably foreseeable future development expected in the project vicinity. The cumulative context for cultural resources is described in Section 3.4.4, "Cumulative Impacts," below.

Both direct and indirect effects of project implementation were considered for this analysis. Direct impacts are typically associated with construction and/or ground-disturbing activities, and have the potential to immediately alter, diminish, or destroy all or part of the character and quality of archeological resources and/or historic architecture. Indirect impacts are typically associated with postproject implementation conditions that have the potential to alter or diminish the historical setting of a cultural resource (generally historic architecture) by introducing visual intrusions on existing historical structures that are considered undesirable.

Project Features

Both the proposed project and the variant would involve demolishing some of the existing buildings and rehabilitating some of the structures on the project site and constructing a mixed-use development that would include residential, commercial, institutional/educational, research and development, parking, and open space uses. Implementation of the proposed project or variant would also entail some historic preservation on the project site.

Impact Evaluation

Impact CR-1: Construction under the proposed project or variant would cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5. *(Significant and Unavoidable with Mitigation*)

This impact analysis addresses potential impacts of the proposed project or variant on the Shipwright's Cottage, the India Basin Scow Schooner Boatyard (including the Hunters Point Ship Graveyard), and 702 Earl Street, which are considered historical resources as defined in State CEQA Guidelines Section 15064.5, including those resources listed in Article 10 or Article 11 of the Planning Code. Impacts are presented for each identified historical resource separately. An "overall" impact conclusion, which represents the most severe CEQA impact conclusion of those listed below, is provided at the end of the impact discussion. Note that no historical resources were identified on the India Basin Open Space property, and, thus, that property is not discussed.

Shipwright's Cottage (at the 900 Innes Property)

The potential exists for the proposed project or variant to result in both direct and indirect effects on the Shipwright's Cottage at the 900 Innes property. Direct and indirect effects are described separately below, followed by the overall impact conclusion for this historic resource.

Direct Effects of Cottage Rehabilitation and Repurposing

Both the proposed project and the variant would retain the Shipwright's Cottage, an individually eligible historical resource and a contributor to the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape, in its original location on the 900 Innes property. The Shipwright's Cottage would be rehabilitated in accordance with the SOI Standards and adaptively reused to function as a welcome center and public exhibition space. The wood panel door at the primary façade of the Shipwright's Cottage is heavily damaged, and it does not appear that it can be repaired in place. However, the current door does not have the same design as the wood panel door that existed in this location during the period of significance, based on review of historic photographs. In order to adhere to the SOI Standards, this door should be replaced with a new door that matches the material and design of the historic door per historical photographs. In addition, the scroll-sawn bargeboard that existed at the primary façade of the Shipwright's Cottage during its period of significance was a distinctive component of the residence's historic design, materials, and workmanship. Although the building yet retains historic integrity and qualifies for listing in the California Register without the bargeboard, the rehabilitation of the building presents the opportunity to replicate and reinstall this feature in order to enhance the building's historic character. The newly fabricated bargeboard must match the design and material of the original as closely as possible, using historic photographs that indicate the element's original appearance. The building would require construction of a new foundation, excavation of the lower level to increase the ceiling height by approximately 18 inches, and structural strengthening of the walls and roof framing for improved seismic performance. An existing two-story addition at the northwest corner would be converted to a single-accommodation restroom on each level.

Other later additions and interior partitioning would be removed to convert the former living and administrative areas into a gallery space. An existing interior stairway would be removed and the floor opening infilled. A window on the west façade of the upper level would be converted to a doorway to provide a second means of egress to the adjacent garden terraces. Adding the new door would require removing historic window trim and an area of cladding; however, this alteration would not likely have a substantial effect on the building's overall character, as exterior cladding materials and the majority of the historic windows would remain in place to convey the building's historic appearance. Furthermore, the replacement door would be of a simple wood design compatible with, though not identical to, the historic exterior doors. The existing brick chimney would be seismically reinforced and retained for its historic appearance, but would not be functional.

These changes would alter historic materials and spatial arrangements in the interior of the building, which may not convey the building's original use. However, interior wall finishes have been changed repeatedly since the building's original construction and period of significance, and the interior of the building is not considered to be of primary significance in conveying the building's historic character.

The existing arrangement of interior spaces conveys the building's historic character as a modest residence and has been identified as a character-defining feature. Most exterior character-defining features would be retained to preserve the predominant historic character of the building. These exterior features include:

- the building's general massing;
- the front-gabled roof form with front entry;
- rustic channel wood siding;

- decorative features at the windows and the door on the primary façade: architraves with scrolled brackets, bracketed window sills, upper transom panels, and window and door hoods;
- one-over-one wood-sash windows, if extant (closer inspection is required);
- basement exposure at the building's rear;
- the masonry chimney stack alongside the rear gable;
- wood-paneled doors;
- molded window trim at secondary façades, including two windows at the southeast façade;
- wood corner boards;
- the shed-roofed rear wing; and
- the northwest shed-roofed addition.

However, the proposed restoration would have the potential to affect the cottage's eligibility for listing in the CRHR (San Francisco, 2017b).

The proposed project and variant propose rehabilitation of historical resources. The Planning Department would require the project applicants to rehabilitate the historical resources in accordance with the SOI Standards for Rehabilitation. As noted in CEQA Section 15064.5(a)(3), "a project that follows the Secretary of the Interior's Standards for the Rehabilitation and Guidelines for Rehabilitating Historic Buildings … shall be considered as mitigated to a level of less-than-significant impact on the historical resource."

Either project scenario could affect select character-defining features, and as such, could significantly affect the ability of the resource to convey its historical significance and to lessen the Shipwright's Cottage's integrity of setting, materials, and feeling.

The following mitigation measures would be implemented to reduce this significant direct impact of the proposed project or variant on the Shipwright's Cottage:

- Mitigation Measure M-CR-1a, "Prepare and Implement Historic Preservation Plan and Ensure that Rehabilitation Plans Meet Performance Criteria"
- Mitigation Measure M-CR-1b, "Document Historical Resources"
- Mitigation Measure M-CR-1c, "Develop and Implement an Interpretative Plan"
- Mitigation Measure M-CR-1e, "Vibration Protection Plan"

Implementation of Mitigation Measures M-CR-1a, M-CR-1b, M-CR-1c, and M-CR-1e presented at the end of the impact discussion under "Overall Impact Conclusion," would lessen impacts of the proposed project or variant on the Shipwright's Cottage to such a degree that the resource would remain eligible for listing in the CRHR.

Indirect Effects of Project Site Development

The larger development of the project site itself presents the potential for indirect effects on the Shipwright's Cottage. The integrity of setting of this historical resource has already been compromised by the changes to the surrounding district that have occurred since the cottage's period of significance (1875). Despite these changes,

the Shipwright's Cottage is still able to convey its historical design, construction techniques, function, and scale of development appropriate to the character of India Basin during the building's period of significance.

Construction of the new park proposed for the 900 Innes property would also change the setting of the Shipwright's Cottage as an individual resource. For example, a new overlook pavilion would be constructed west of the Shipwright's Cottage along Innes Avenue, and new access points into the park would be located east and west of the cottage. The new 900 Innes Avenue park would be designed with shoreline plantings, and seating and picnic tables. These new plantings and pathways would contribute to the area's appearance as a contemporary recreational park rather than a historical industrial site; however, the park's low scale and open character is considered generally compatible with the historical setting of the Shipwright's Cottage. The proposed retention of features of the India Basin Scow Schooner Boatyard would further help maintain the historic setting of the Shipwright's Cottage. Therefore, the new park design would not detract substantially from the Shipwright's Cottage's integrity of setting.

Construction activity would involve pile driving and other heavy equipment and vehicles in proximity to the Shipwright's Cottage, which could affect the structural integrity of the building.

Either project scenario would introduce new buildings in the immediate vicinity of the Shipwright's Cottage. Taller buildings would be located within a one-block distance to the east and would affect the integrity of setting of the Shipwright's Cottage to an extent:

- The building proposed for the corner of Innes Avenue and Griffith Street, across Griffith Street from the Shipwright's Cottage, would have a stepped massing. Closest to the cottage, a stepped two-story (20- to 25-foot tall) to three-story (31- to 35-foot-tall) buildings would be constructed at the west end of the 700 Innes property.
- The project also proposes 13- and 14-story buildings, identifiable as new construction, near the intersection of New Hudson Avenue and Arelious Walker Drive. This location is within one block of the east boundary of the Shipwright's Cottage.

The new buildings adjacent to the Shipwright's Cottage would not be compatible with the massing, size, and scale of this resource or other features belonging to its historical environment. However, nearby development on the 700 Innes property would not change the most important remaining elements of the Shipwright's Cottage's historical setting: its close visual and physical relationship to India Basin.

Portions of the India Basin Shoreline Park and India Basin Open Space properties are visible from the Shipwright's Cottage. Both the proposed project and the variant would retain each of these two properties as park space. The portions of these properties most visible from the Shipwright's Cottage would not feature new construction that would be out of scale with the site's historical environment. Shoreline areas would be open in character and planted with marsh vegetation, and thus, would generally support the site's historical setting. Therefore, the proposed changes at India Basin Shoreline Park and India Basin Open Space would not negatively affect the setting of the Shipwright's Cottage.

Overall Impact on the Shipwright's Cottage

Both the proposed project and the variant could affect select character-defining features. Thus, they have the potential to affect the ability of the Shipwright's Cottage to convey its historical significance and to lessen its integrity of setting, design, materials, and feeling. Implementation of Mitigation Measures Mitigation Measures M-CR-1a, M-CR-1b, M-CR-1c, and M-CR-1e (presented at the end of the impact discussion under "Overall Impact Conclusion") would lessen impacts of the proposed project or variant on the Shipwright's Cottage to such a degree that the resource would still be able to convey the characteristics that justify its eligibility for listing in the CRHR. Thus, the overall impact on the Shipwright's Cottage would be *less than significant with mitigation*.

India Basin Scow Schooner Boatyard Vernacular Cultural Landscape (at the India Basin Shoreline Park and 900 Innes Properties)

As with the Shipwright's Cottage, the potential exists for the proposed project or variant to result in both direct and indirect effects on the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape. This vernacular cultural landscape includes the Hunters Point Ship Graveyard encompassing the India Basin Shoreline Park and 900 Innes properties and associated adjacent in-water areas.

Direct and indirect effects are described separately below, followed by the overall impact conclusion for this historic resource.

Direct Effects of Boatyard Rehabilitation

Either the proposed project or the variant would alter or remove some of the character-defining features and distinctive setting, design, materials, workmanship, feeling, and association of the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape. Table 3.4-3 summarizes the proposed changes to the character-defining features of the historical resource.

Table 3.4-3: Impacts of the Proposed Project or Variant on Character-Defining Features of the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape

No. in HRE	Name of Feature/Address	Impact of the Proposed Project or Variant
1	India Basin/San Francisco Bay	Shoreline retained
2	Griffith Street right-of-way	Altered; a portion would be reoriented from the original linear design
3	Path between Griffith Street and west marine ways	Retained
5	Historic storage and staging yard	Retained
6	West marine way tracks (wood)	Wood elements replaced; metal portions retained
10	Circulation routes and water access at marine ways	Routes and access alignment retained
13	Boatyard Office building	Retained, demolished and/or replaced depending on final project design
14	Tool Shed and Water Tank building	Demolished; may be replaced with open structure that retains massing and roof form and reuses original materials where feasible

No. in HRE	Name of Feature/Address	Impact of the Proposed Project or Variant
15	Shipwright's Cottage	Retained; rehabilitated
21	Water fence posts	Would be removed; attempt would be made to replace these piles in place, if possible
23	Hunters Point Ship Graveyard (archeological)	Retained; Piles would be installed to support park features
N/A	Views east toward San Francisco Bay and the East Bay hills	Views retained
N/A	Gradual slope from Innes Avenue to India Basin	Slope retained; site would be graded

Notes: HRE = historical resource evaluation; N/A = not applicable
Source: Compiled by AECOM in 2017

As discussed above, the intention of the project is to retain and rehabilitate the Shipwright's Cottage to the SOI Standards.

The Boatyard Office building may be retained, demolished, moved, and/or replaced depending on final project design. If the Boatyard Office building is retained by RPD as part of the proposed project, the character-defining features of the office would be retained or replaced in-kind in order to ensure that the building remains a significant feature of the cultural landscape. The extent of the character-defining features to be retained or replaced in-kind, such as portions of the wood frame structure, wood cladding, roof structure and portholes, will depend upon additional condition assessments of the building, public safety concerns, ADA accessibility, seismic requirements, visibility and sight lines in relation to park design, and RPD programming needs and project goals. Again, dependent on final project design, the Boatyard Office building may also be replaced in-kind to the extent feasible, moved, or demolished.

The project may demolish or may replace and interpret the third remaining significant building (the Tool Shed and Water Tank building) by keeping or replacing in-kind portions of the foundation and structural elements where feasible to reflect the building's massing, construct in-kind a roof that matches the existing roof form, and reuse or replace in-kind some cladding materials. The extent of the character-defining features to be retained or replaced in-kind, will depend upon additional condition assessments of the building, public safety concerns, ADA accessibility, seismic requirements, visibility and sight lines in relation to park design, and RPD programming needs and project goals. All three buildings are significant features of the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape.

As outlined above, the project would retain the storage yard as an open area; retain significant circulation paths; and rehabilitate the noncontaminated portions of the west marine way tracks, specifically the metal tracks. The water fence posts would be removed and replaced in kind, if feasible, with nontoxic substitutes.[6] The original circulation paths and the site's topography would be altered with new surface materials, stepped grading and general site grading, and plantings for use in a new park. However, the character-defining circulation pathways would be maintained and distinguished from the new circulation paths and the general slope of the landscape

[6] The existing piles that comprised the water fence were previously treated with creosote, a toxic substance. The San Francisco Bay Conservation and Development Commission requires that these creosote-treated piles be removed when such piles are connected to proposed projects. Because of both regulatory and engineering constraints, replacement of the piles may not be possible.

would be maintained. The project might entail driving piles into the archeological remains of the Hunters Point Ship Graveyard (discussed below) to support the proposed park features.

The alteration or removal of character-defining features and the introduction of new buildings, structures, pathways, and plantings would affect the site's integrity of setting. For the proposed project or variant, a total of 2,750 gross square feet (gsf) of park-serving commercial uses (concessions in the Shipwright's Cottage and the adjacent new Overlook Building) would be built on the 900 Innes property and would range up to 20.5 feet in height. A total of approximately 5,000 gsf of institutional uses (the welcome center and public exhibition space) would be created in the existing two-story Shipwright's Cottage, the "maker space"/shop to be created on the footprint and have the same dimensions of the former non-character-defining paint shop and compressor house, and the maintenance building created in the location of the former non-character-defining storage building.

To facilitate the new building construction, the 900 Innes property would include an improved roadway on the Griffith Street ROW, which would intersect Innes Avenue and connect to the new Hudson Avenue roadwork proposed for the 700 Innes development. The Griffith Street/Innes Avenue intersection would remain in its current location; however, Griffith Street between Innes Avenue and Hudson Avenue would be reoriented southeastward to connect to New Hudson Avenue north of the 900 Innes/700 Innes bicycle path, altering the original alignment of the contributing element.

The proposed pedestrian path located in the historic Griffith Street alignment would be wider than, and use a different material treatment than, the two new pedestrian pathways northwest of the Griffith Street/Innes Avenue intersection that would connect Innes Avenue to the park interior. The Outlook Building and Griffith Street construction and the new circulation pattern would diminish the historical setting, design, feeling, and association of the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape as a historical industrial site.

These alterations would change the appearance of the site from an industrial boatyard to a contemporary recreational park, but would maintain many character-defining features of the landscape. Efforts would be undertaken to reference the site's historical function as a boatbuilding and boat-repair yard in the design of the park. Nonetheless, this impact would be significant.

As the proposed project and the variant include the potential replacement or removal of the Boatyard Office building and Tool Shed and Water Tank building, the proposed project and variant, depending on final project design, have the potential to irrevocably diminish the India Basin Scow Schooner Boatyard as a vernacular cultural landscape. In addition, other project elements could negatively affect the integrity of setting, design, materials, workmanship, feeling, and association to such a degree that, if the final design includes the replacement or removal of the Boatyard Office building and/or Tool Shed and Water Tank building, the India Basin Scow Schooner Boatyard would no longer remain eligible for listing in the CRHR. This impact would be significant. The proposed project or variant would implement Mitigation Measures M-CR-1a, M-CR-1b, M-CR-1c, M-CR-1d, and M-CR-1e to lessen the severity of the impact on the India Basin Scow Schooner Boatyard, but not necessarily to the degree that the resource would remain eligible for listing in the CRHR. Thus, the impact of the proposed project or variant on the built environment at the India Basin Scow Schooner Boatyard (at the 900 Innes property) would be significant and unavoidable with mitigation.

Indirect Effects of Project Site Development

The proposed project or variant would also involve constructing stepped two-story (20- to 25-foot tall) to three-story (31- to 35-foot-tall) buildings adjacent to Griffith Street, immediately opposite the eastern edge of the India Basin Scow Schooner Boatyard. Building heights at the west end of the 700 Innes property would transition to four to seven stories. Near the intersection of New Hudson Avenue and Arelious Walker Drive, located within one block of the east boundary of the boatyard, 13- and 14-story buildings are proposed. These buildings would be identifiable as new construction.

The new buildings adjacent to the east boundary of the India Basin Scow Schooner Boatyard, with taller buildings located within a one-block distance to the east, would not be compatible with the massing, size, and scale of the historical buildings or other contributing features belonging to the site's cultural landscape. During its period of significance (1875–1936), the India Basin Scow Schooner Boatyard existed in a remote district of San Francisco that was characterized by one- and two-story residences and industrial buildings alongside the shore of India Basin. The area has experienced gradual change since the early 20th century, but much of the development there has been generally compatible with the historical construction pattern—that is, one- and two-story residences and commercial buildings facing onto Innes Avenue. The site's integrity of setting depends most heavily on its relationships with India Basin and the Bay, Innes Avenue, and the Hunters Point Ridge (San Francisco, 2017b). The proposed nearby development on the 700 Innes Avenue property would not alter these relationships, which continue to allow the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape to convey its historical function and significance.

The 900 Innes property would be developed as a waterfront park that would provide a connection between the India Basin Shoreline Park and India Basin Open Space properties. This park also would provide connections for the Blue Greenway/San Francisco Bay Trail (Bay Trail), the Class 1 bikeway, and pedestrian and bicycle access to the shoreline. Other potential project elements for this property include shoreline plantings, seating and picnic tables, replacement piers, fishing areas, plazas, event areas, tidal marshes, concession facilities, drinking fountains, restrooms, passive recreational areas for picnicking, shade structures, bicycle parking, wayfinding signage, and historical and educational displays. All of these new elements would contribute to the area's appearance as a contemporary recreational park rather than a historical industrial site.

The India Basin Scow Schooner Boatyard is located between the current India Basin Shoreline Park and India Basin Open Space properties. Both the proposed project and the variant would retain each of these two properties as park space. Those portions of these properties that would be adjacent to and/or visible from the India Basin Scow Schooner Boatyard would not feature new construction out of scale with the site's historical environment. Shoreline areas would be open in character and planted with marsh vegetation, and thus, would generally support the historical setting of the site. Therefore, the proposed changes at the India Basin Shoreline Park and India Basin Open Space properties would not negatively affect the setting of the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape (see Figure 3.4-12).

Source: GGN, 2016

Figure 3.4-12: Design Features of the India Basin Shoreline Park and 900 Innes Properties

Overall Impact on the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape

When taken in total, the elements of the proposed project or the variant, depending on final design, may irrevocably diminish the India Basin Scow Schooner Boatyard as a vernacular cultural landscape. Proposed elements could negatively affect the integrity of setting, design, materials, workmanship, feeling, and association to such a degree that the India Basin Scow Schooner Boatyard would no longer remain eligible for listing in the CRHR. This impact would be significant. The proposed project or variant would implement Mitigation Measures M-CR-1a, M-CR-1b, M-CR-1c, M-CR-1d, and M-CR-1e to lessen the severity of the impact on the India Basin Scow Schooner Boatyard, but not necessarily to the degree that the resource would remain eligible for listing in the CRHR. Thus, the impact of the proposed project or variant on the built environment at the India Basin Scow Schooner Boatyard (at the 900 Innes property) would be *significant and unavoidable with mitigation*.

702 Earl Street (at the 700 Innes Property)

As with the Shipwright's Cottage and the India Basin Scow Schooner Boatyard, the potential exists for the proposed project or variant to result in both direct and indirect effects on 702 Earl Street at the 700 Innes property. Direct and indirect effects are described separately below, followed by the overall impact conclusion for this historic resource.

Direct Effects of Structure Relocation and Rehabilitation

Either the proposed project or the variant would retain 702 Earl Street on the 700 Innes property; however, the CRHR-eligible building would be relocated to the northern portion of the property (Figure 3.4-13). The proposed relocation and rehabilitation would have the potential to affect the building's eligibility for listing in the CRHR (San Francisco, 2017b).

By implementing the mitigation measures (M-CR-1a, M-CR-1b, M-CR-1c, and M-CR-1e, presented at the end of the impact discussion under "Overall Impact Conclusion"), the project sponsors would adhere to a historic preservation plan, a relocation plan, documentation, and an interpretation plan that would ensure character-defining features of the building are protected, accurately recorded, and interpreted, thereby reducing potential impacts on this CRHR-eligible resource that would have occurred with the proposed relocation and alteration of the building.

Relocating the building would compromise its integrity of location. However, eligibility for listing in the CRHR does not necessarily depend on a resource remaining in its original location. According to CRHR Special Considerations 1 (Moved buildings, structures or objects) (OHP, 2011):

> …it is recognized that moving an historic building, structure, or object is sometimes necessary to prevent its destruction. Therefore, a moved building, structure, or object that is otherwise eligible may be listed in the California Register if it was moved to prevent its demolition at its former location and if the new location is compatible with the original character and use of the historical resource.

The building at 702 Earl Street derives its historical significance from its architectural significance. The character-defining features of 702 Earl Street are the generally square plan with robust even massing, gabled roof form with

central monitor, wood shiplap siding, timber framing system, pattern of horizontally oriented windows, third-story porch at the primary façade, and primary façade facing the water.

Sources: Google Earth 2017; SOM, 2017; compiled by AECOM in 2017

Figure 3.4-13: Existing and Proposed Locations of the 702 Earl Street Building within the 700 Innes Property

The building, in its present location, continues to convey its overall character as a significant vernacular industrial building in the India Basin neighborhood. However, the setting of 702 Earl Street was previously found to lack historical integrity as a result of the large-scale infilling of India Basin's south end during the 1960s. That infilling geographically separated the building from the shoreline, an integral and functional component of the building's setting when it was constructed. Likewise, the fenced boatyard that originally surrounded the building immediately to the east no longer remains.

Proposed alterations to the 702 Earl Street building for the rehabilitation include a new foundation and walls in the new site, construction of an attached elevator tower, first-story loading dock, second-story deck, third-story walkway, and insertion of new openings into the building. The new windows would match the orientation, configuration, and spacing of the existing windows to be compatible with the historic character of the building. New door openings on the northwest façade would align with existing bays that reinforce the historic fenestration pattern. The new foundation and ground level would introduce new portions of the building, that when considered with the new loading dock, deck, walkway, and attached elevator tower at the southwest façade, would have a visual impact on the building that would detract from its historic character.

As a result of the proposed alterations, the following character-defining features of the exterior of 702 Earl Street would be retained:

- the generally square plan with robust, even massing;
- gabled roof form with central monitor;
- wood shiplap siding;
- timber framing system;
- pattern of horizontally oriented windows;
- third-story porch at the primary façade, and
- the primary façade facing the Bay.

Indirect Effects of Project Site Development

Either the proposed project or the variant would result in additional changes to the setting around 702 Earl Street. New four- to six-story residential buildings would be constructed adjacent to the proposed new location of the 702 Earl Street building. The four-story buildings located west-southwest of 702 Earl Street would be 41–45 feet tall; the six-story building southwest of 702 Earl Street would be 71–75 feet tall; and a four-story building south of 702 Earl Street would be 46–50 feet tall. All of these buildings would be taller than the three-story 702 Earl Street building.

The project's conceptual land use plan for the 700 Innes property is characterized by buildings ranging in height from one to 14 stories (20–150 feet tall), with buildings concentrated along Innes Avenue, Arelious Walker Drive, Hudson Avenue, New Hudson Avenue, and Earl Street. Up to 245,300 gsf of commercial, retail, or flex space would be developed at ground-floor locations under the proposed project; the variant would develop up to 1 million gsf. The variant would have 740 fewer units than the proposed project, but the layout of residential development would generally be similar. Residential buildings would be located primarily north of New Hudson Avenue, with a small number of units west of New Griffith Street. Residential uses would be constructed above

the commercial uses. Buildings would range from one to 14 stories (20–150 feet tall). A 50,000-gsf school would be constructed on the 700 Innes property under either the proposed project or the variant. These buildings would be identifiable as new construction.

The four- and six-story buildings in the immediate vicinity of the 702 Earl Street building would not be strictly compatible with the massing, size, and scale of the building or other elements that existed within its historical setting. Therefore, despite the building's restored relationship with the waterfront, 702 Earl Street's integrity of setting and design (massing) would be reduced by the adjacent new construction.

Both the proposed project and the variant propose an approximately 5.63-acre, publicly accessible open space area, the "Big Green," for the 700 Innes property adjacent to the India Basin Open Space property. The project would provide paved pedestrian and bicycle pathways to the India Basin Open Space that would traverse the north side of the relocated 702 Earl Street building. The Big Green would retain a natural character and could include grasslands, stormwater bioretention ponds, swales, planters, a wet meadow, and groves of trees. It would also include some children's play areas, a fitness loop, and some small gathering spaces. Paved walking paths throughout the Big Green would provide shoreline access for pedestrians. The project elements of pedestrian/bike pathways and green space would be low-lying elements with a smaller scale than the newly constructed buildings, and would have less of a visual impact on the setting of 702 Earl Street.

Overall Impact on 702 Earl Street

Relocating and rehabilitating the 702 Earl Street building along with implementation of the identified mitigation measures (M-CR-1a, M-CR-1b, M-CR-1c, and M-CR-1e presented below under "Overall Impact Conclusion") would not materially impair the building's significance to the extent that it would no longer be eligible for listing in the CRHR. Relocating 702 Earl Street would not substantially affect the building's integrity of setting, for two reasons: the building would remain in the same general location as its historical context and the relocation would largely restore the spatial relationship of the original building's location along the shoreline before the infill of the 1960s.

Both the proposed project and the variant could affect select character-defining features. Thus, they have the potential to affect the ability of the 702 Earl Street building to convey its historical significance and to lessen its integrity of setting, materials, and feeling. Implementation of Mitigation Measures M-CR-1a, M-CR-1b, and M-CR-1c, listed under "Overall Impact Conclusion" below, would lessen impacts of the proposed project or variant on 702 Earl Street to such a degree that the resource would remain eligible for listing in the CRHR. Thus, the overall impact on 702 Earl Street would be *less than significant with mitigation*.

Overall Impact Conclusion

Construction of the proposed project or variant could cause a substantial adverse change in the significance of a historical resource (as defined in Section 15064.5) in the study area. Therefore, the overall impact of the proposed project or variant on the built environment, depending on final design, is significant. Both the proposed project and variant could affect select character-defining features. Thus, there would be a significant impact related to the ability of the Shipwright's Cottage, India Basin Scow Schooner Boatyard, and 702 Earl Street building to convey their historical significance. Implementation of Mitigation Measures M-CR-1a, M-CR-1b, M-CR-1c, M-CR-1d, and M-CR-1e below would lessen impacts of the proposed project or variant on these resources' integrity, design,

materials, and feeling. In addition, construction vibration impacts on adjacent historic buildings are discussed in Section 3.6, "Noise" and would be less-than-significant with mitigation with implementation of M-NO-6 (Implement Vibration Mitigation Measure for Pile Driving).

In this document, upper-case letters following improvement and mitigation measure numbers are used to indicate situations where the measure is applicable solely to the proposed project, identified with a "P," or the variant, identified with a "V." In cases where no letter is indicated, the measure is applicable to both the proposed project and the variant.

Mitigation Measure M-CR-1a: Prepare and Implement Historic Preservation Plans and Ensure that Rehabilitation Plans Meet Performance Criteria

The project sponsors shall retain a professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History and is on the Planning Department's qualified consultant list. This professional shall prepare, and the project sponsors shall implement, a historic preservation plan (HPP) for each of the three historical resources identified on the project site. Each HPP shall consider the historic resource evaluation reports prepared for this project.

The HPPs shall incorporate rehabilitation recommendations for protecting character-defining features of the historical resources to be retained and shall include the following elements:

- ***Historic Preservation Protective Measures.*** *Each HPP shall be prepared and implemented to aid in preserving those portions of the historical resource that would be retained and/or rehabilitated as part of the project. The HPP shall establish measures to protect the character-defining features from construction equipment that may inadvertently come in contact with the resource. If deemed necessary upon further assessment of the resource's condition, the plan shall include the preliminary stabilization before construction to prevent further deterioration or damage. Specifically, the protection measures shall incorporate construction specifications for the proposed project that require the construction contractor(s) to use all feasible means to avoid damage to historical resources, including but not necessarily limited to the following:*
  - *staging equipment and materials as far as possible from historic buildings to avoid direct impact damage;*
  - *maintaining a buffer zone when possible between heavy equipment and historical resource(s) as identified by the Planning Department;*
  - *appropriately shoring excavation sidewalls to prevent movement of adjacent structures;*
  - *ensuring adequate drainage; and ensuring appropriate security to minimize risks of vandalism and fire.*
- ***Relocation Plan for 702 Earl Street.*** *The HPP for 702 Earl Street shall include a relocation plan to be reviewed and approved by the Planning Department to ensure that character-defining features of the building will be retained. The relocation plan shall include required qualifications for the building relocation company ensuring that the relocation is undertaken by a company that is experienced in moving historic buildings of a similar size and/or structural system as 702 Earl Street. The relocation plan shall ensure that the building will be moved without disassembly and that the*

building will be separated from its existing foundation without irreparably damaging the character-defining historic fabric of the building.

- ***Rehabilitation and Retention Plan for India Basin Scow Schooner Cultural Landscape.*** *The HPP for the cultural landscape shall finalize the designs for the Shipwright's Cottage, and the Tool Shed interpretative structure, if included in the final design. It shall also include a plan for rehabilitation of the Marineway rails.*
- ***New Construction and Maintenance Guidelines for the India Basin Scow Schooner Cultural Landscape.*** *The HPPs for the India Basin Scow Schooner Cultural Landscape shall establish protocols for the ongoing protection of the character-defining features of the cultural landscape and guidelines to evaluate all future development proposals within the cultural landscape. These guidelines shall include the following:*
  - *New construction and site development within or adjacent to the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape shall be compatible with the character of the cultural landscape and shall maintain and support the landscape's character-defining features.*
  - *New construction shall draw its form, materials, and color palette from the historic texture and materials of the cultural landscape.*
  - *New construction shall be contextually appropriate in terms of massing, size, scale, and architectural features, not only with the remaining historic buildings, but with one another.*
  - *New construction shall comply with the Secretary of the Interior's Rehabilitation Standard No. 9: "New Addition, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale and architectural features to protect the integrity of the property and its environment."*
  - *A building and structural maintenance plan shall be developed to ensure that the character-defining structures of the cultural landscape are maintained.*
  - *A planting and landscape maintenance plan shall be developed to provide ongoing protection of character-defining landscape features of the cultural landscape that will be rehabilitated and/or protected by the project, such as open areas and circulation routes. The plan shall provide guidelines for landscape design within the cultural landscape that maintains the historic and industrial character of the landscape.*

- ***Salvage.*** *Each HPP for the Shipwright's Cottage and the India Basin Scow Schooner Cultural Landscape shall further investigate and incorporate preservation recommendations regarding the salvage of historic materials for reuse and/or interpretation. The recommendations in the HPPs shall include but not be limited to the following:*
  - *Materials to be salvaged from the interior of the Shipwright's Cottage and recommendations for reusing those materials.*
  - *Materials to be salvaged from both contributing and noncontributing features of the India Basin Scow Schooner Boatyard Vernacular Cultural landscape, and recommendations for either incorporating such materials into the proposed new construction on the India Basin Shoreline Park property or otherwise reusing those materials.*

For each HPP, the HPP, including any specifications, monitoring schedule, and other supporting documents, shall be incorporated into the site permit application's plan sets. Planning Department Preservation staff shall review and approve the HPP before a site permit, demolition permit, or any other permit is issued by the San Francisco Department of Building Inspection for the rehabilitation of historical resources.

The Planning Department shall not issue building permits associated with historical resources until Preservation staff concur that the designs conform to the SOI Standards for Rehabilitation. Should alternative materials be proposed for replacement of historic materials, they shall be in keeping with the size, scale, color, texture, and general appearance, and shall be approved by Planning Department Preservation staff. The performance criteria shall ensure retention of the character-defining features of each historical resource, as identified in the HPP, which in turn shall be developed in accordance with the HRE developed for the project (San Francisco, 2017b).

The project sponsors shall ensure that the contractor(s) follows the HPP. Furthermore, in accordance with the HPP's reporting and monitoring requirements, the consultant architectural historian shall conduct regular periodic inspections of the historical resources under rehabilitation during project construction activities to ensure compliance with the HPP and adherence to the SOI Standards for Rehabilitation. The consultant architectural historian shall provide progress reports to the Planning Department throughout the construction period.

Mitigation Measure M-CR-1b: Document Historical Resources

To reduce adverse effects on historical resources, before the start of demolition, rehabilitation, or relocation, the project sponsors shall retain a professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History. This professional shall prepare written and photographic documentation of the three historical resources identified on the project site. The specific scope of the documentation shall be reviewed and approved by the Planning Department but shall include the following elements:

- ***Measured Drawings.*** *A set of measured drawings shall be prepared that depict the existing size, scale, and dimension of the historical resources. Planning Department Preservation staff will accept the original architectural drawings or an as-built set of architectural drawings (e.g., plan, section, elevation). Planning Department Preservation staff will assist the consultant in determining the appropriate level of measured drawings.*
- ***Historic American Buildings/Historic American Landscape Survey–Level Photograph.*** *Either Historic American Buildings/Historic American Landscape Survey (HABS/HALS) standard large-format or digital photography shall be used. The scope of the digital photographs shall be reviewed by Planning Department Preservation staff for concurrence, and all digital photography shall be conducted according to the latest National Park Service (NPS) standards. The photography shall be undertaken by a qualified professional with demonstrated experience in HABS photography. Photograph views for the data set shall include:*
  - *contextual views;*
  - *views of each side of the building and interior views, where possible;*

- *oblique views of the building; and*
- *detail views of character-defining features, including features on the interior.*

All views shall be referenced on a photographic key. This photographic key shall be on a map of the property and shall show the photograph number with an arrow to indicate the direction of the view. Historic photographs shall also be collected, reproduced, and included in the data set.

- ***HABS/HALS Historical Report.*** *A written historical narrative and report shall be provided in accordance with the HABS Historical Report Guidelines.*

In addition, video recordation shall be undertaken before demolition or site permits are issued. The project sponsor shall undertake video documentation of the affected historical resource and its setting. The documentation shall be conducted by a professional videographer, one with experience recording architectural resources. The documentation shall be narrated by a qualified professional who meets the standards for history, architectural history, or architecture (as appropriate) set forth by the Secretary of the Interior's Professional Qualification Standards (36 Code of Federal Regulations Part 61). The documentation shall include as much information as possible—using visuals in combination with narration—about the materials, construction methods, current condition, historic use, and historic context of the historical resource. Archival copies of the video documentation shall be submitted to the Planning Department, and to repositories including but not limited to the San Francisco Public Library, the Northwest Information Center of the California Historical Information Resource System, and the California Historical Society.

Further, a Print-on-Demand softcover book shall be produced that includes the content from the historical report, historical photographs, HABS/HALS photography, measured drawings, and field notes. The Print-on-Demand book shall be made available to the public for distribution.

The project sponsor shall transmit such documentation to the History Room of the San Francisco Public Library, San Francisco Architectural Heritage, the Planning Department, the San Francisco Maritime National Historic Park, and the Northwest Information Center. The HABS/HALS documentation scope will determine the requested documentation type for each facility, and the projects sponsors will conduct outreach to identify other interested groups. All documentation will be reviewed and approved by the Planning Department's Preservation coordinator before any demolition or site permit is granted for the affected historical resource.

Mitigation Measure M-CR-1c: Develop and Implement an Interpretative Plan

The project sponsors shall facilitate the development of an interpretive program focused on the history and environmental setting of each historical resource identified on the project site. This program shall be initially outlined in an interpretive plan subject to review and approval by the Planning Department.

The interpretative program shall include but not be limited to the installation of permanent on-site interpretive displays or screens in publicly accessible locations. The plan shall include the proposed format and location of the interpretive content, as well as high-quality graphics and written narratives to be incorporated. Historical photographs, including some of the large-format photographs required by

Mitigation Measure M-CR-1b, may be used to illustrate the history. Salvaged materials as required by Mitigation Measure M-CR-1a should also contribute to the interpretative program.

The interpretative program should also coordinate with other interpretative displays currently proposed along the Bay, specifically those that focus on shipbuilding at Potrero Point to the north. The interpretative program should also coordinate with maritime or other relevant interpretation programs in San Francisco, such as the San Francisco Maritime National Historic Park and its sailing program that includes the 1891 scow schooner Alma*. The interpretative plan should also explore contributing to digital platforms that are publicly accessible, such as the History Pin website or an iPhone application. The primary goal is to educate visitors about the property's historical themes, associations, and lost contributing features within broader historical, social, and physical landscape contexts.*

Mitigation Measure M-CR-1d: Retain the Boatyard Office Building

If feasible, character-defining features of the Boatyard Office building shall be retained by RPD in order to ensure that the building remains a significant feature of the cultural landscape. This would include retention of a portion of the roof form, wood frame structure, and wood cladding so that the massing of the building is still expressed. For example, this may include retention of an open-frame or partially open-frame roof structure with wide eaves supported by a wood frame structure with a portion of the structure clad in retained or replaced-in-kind wood cladding. If possible, the porthole openings on the southeast and southwest façade shall be retained. The amount of the wood cladding and roof structure to be retained will depend upon additional condition assessments of the building, public safety concerns, seismic requirements, visibility and sight lines in relation to park design, and RPD programming.

Mitigation Measure M-CR-1e: Vibration Protection Plan

Where construction activity involving pile driving and other heavy equipment and vehicles would occur in proximity to any historical resources, the project sponsors shall undertake a monitoring program to minimize damage to adjacent historic buildings and to ensure that any such damage is documented and repaired. The monitoring program, which shall apply within 150 feet where pile driving would be used and within 35 feet of other heavy equipment operation, shall include the following components:

- *Prior to the start of any ground-disturbing activity, the project sponsors shall engage a historic architect or qualified historic preservation professional to undertake a pre-construction survey of historical resource(s) identified by the San Francisco Planning Department within 150 feet of planned construction to document and photograph the buildings' existing conditions. The qualified consultant shall conduct regular periodic inspections of each historical resource within 150 feet of planned construction during ground-disturbing activity on the project site in concert with a qualified acoustical/vibration consultant or structural engineer and shall submit monitoring reports to San Francisco Planning Department Preservation staff. The qualified consultant shall submit an existing conditions documentation scope and vibration monitoring plan to San Francisco Planning Department Preservation staff for review and approval.*
- *Based on the construction and condition of the resource(s), a structural engineer or other qualified entity shall establish a maximum vibration level that shall not be exceeded at each historical resource, based on existing conditions, character-defining features, soils conditions and anticipated*

construction practices in use at the time (0.12 inch per second, peak particle velocity [PPV], consistent with Federal Transit Administration guidance).

- *To ensure that vibration levels do not exceed the established standard, a qualified acoustical/vibration consultant shall monitor vibration levels at each historical resource within 150 feet of planned construction and shall prohibit vibratory construction activities that generate vibration levels in excess of the standard. Should vibration levels be observed in excess of the standard, construction shall be halted and alternative construction techniques put in practice. (For example, pre-drilled piles could be substituted for driven piles, if soil conditions allow; smaller, lighter equipment could possibly also be used in some cases.) The consultant shall conduct regular periodic inspections of each historical resource within 150 feet of planned construction during ground-disturbing activity on the project site. Should damage to a historical resource occur as a result of ground-disturbing activity on the site, the building(s) shall be remediated to its pre-construction condition at the conclusion of ground-disturbing activity on the site.*

Construction of the proposed project or variant could cause a substantial adverse change in the significance of a historical resource (as defined in Section 15064.5) in the study area due to the fact that the retention or replacement-in-kind of character-defining features of the India Basin Scow Schooner Boatyard landscape cannot be established at this time. Therefore, the overall impact of the proposed project or variant on the built environment, depending on final design, is significant. Both the proposed project and variant could affect select character-defining features. Thus, there would be a significant impact related to the ability of the Shipwright's Cottage, India Basin Scow Schooner Boatyard, and 702 Earl Street building to convey their historical significance. Implementation of Mitigation Measures M-CR-1a, M-CR-1b, M-CR-1c, M-CR-1d, and M-CR-1e would reduce Impact CR-1 but not to such a degree that the resources would still be able to convey the characteristics that justify its eligibility for listing in the CRHR. Thus, the impact of the proposed project or variant on the built environment would be *significant and unavoidable with mitigation*.

Impact CR-2: Construction under the proposed project or variant would cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5. (*Less than Significant with Mitigation*)

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

This impact analysis addresses potential impacts on archeological sites within the entire study area (i.e., at all four project site properties) that qualify either as historical resources (resources listed in the CRHR or eligible for listing) or as unique archeological resources (resources that meet the threshold of PRC Section 21083).

As detailed in the archeological technical report prepared for the project and as described above, remnants of two ships, the *Bay City* and *Caroline*, were identified within the India Basin Shoreline Park property in the study area (San Francisco, 2017a). Although the condition of these vessels and their full extent in the study area is unknown, these ships were recorded as contributors to the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape because they were brought into India Basin to be scavenged by the local boat builders. Current project plans, however, do not include excavation down to the levels where these vessels are located. In fact, imported fill is proposed for some of the areas where the vessels occur. It is possible that the piles required to support the ramp portion of the proposed Marineway over the remains of the *Caroline* or the viewing platform located over the

remains of the *Bay City* would be placed into these feature(s) of the Hunters Point Ship Graveyard. Without detailed engineering plans, however, the exact placement of the piles is unknown. Thus, installation of the piles as required for construction represent a potential adverse impact on the India Basin Scow Schooner Boatyard.

In addition, the entire study area exhibits various degrees of elevated sensitivity for harboring buried archeological resources such as prehistoric habitation sites or historic-period refuse deposits, structural foundations, privy pits, or additional vessels (Figure 3.4-7). Ground-disturbing construction activities and in-water work undertaken anywhere in the study area have the potential to inadvertently expose and therefore affect previously unknown archeological resources, including those that may be CRHR-eligible. For this reason, construction of the proposed project or variant could cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5, and thus, impacts on archeological resources would be significant.

Construction of the proposed project or variant could result in the inadvertent discovery of previously unknown archeological resources. Such a discovery could represent a substantial adverse change in the significance of a historical and/or unique archeological resource. Implementation of Mitigation Measure M-CR-2a would reduce the impact on archeological resources inadvertently discovered anywhere in the study area.

Mitigation Measure M-CR-2a: Undertake an Archeological Testing Program

Based on the results of the archeological investigation completed for the proposed project and variant, the remains of two ships, the Bay City *and the* Caroline*, occur within the study area. Both sets of remains are contributing elements to the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape. The proposed Marineway would cross over the identified remains of the* Caroline*, and the viewing platform would be placed over the remains of the* Bay City*. The foundation system of the Marineway and viewing platform have not been fully developed, but the potential exists for piles required for the structure to be driven through the* buried vessels*. There is also a reasonable presumption that additional archeological resources beyond the remains of the* Bay City *and* Caroline *may be present in the study area. Such currently undiscovered resources could include other ship hulks associated with the Hunters Point Ship Graveyard (which in turn would be contributing elements to the vernacular cultural landscape) and both prehistoric and historic-period archeological sites. As such, the following measures shall be undertaken to avoid any significant adverse effect from the proposed project or variant on buried archeological resources.*

The project sponsors shall retain the services of an archeological consultant from the rotational Qualified Archeological Consultants List (QACL), maintained by the Planning Department's archeologist. The project sponsors 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 project construction for up to 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 the potential effects on a significant archeological resource, as defined in State CEQA Guidelines Sections 15064.5(a) and 15064.5(c), to less than significant with mitigation.

***Consultation with Descendant Communities**. Upon discovery of an archeological site associated with Native Americans, the overseas Chinese, or other potentially interested descendant groups, an appropriate representative of the descendant group and the ERO shall be contacted. The descendant group's representative shall be given the opportunity to monitor archeological field investigations of the site and to consult with the ERO regarding appropriate archeological treatment of the site, data recovered from the site, and if applicable, any 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 Plan**. 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 or variant, the testing method to be used, and the locations recommended for testing. The purpose of the archeological testing program shall be to determine the presence or absence of archeological resources to the extent possible, and to 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 the archeological consultant finds, based on the archeological testing program, that significant archeological resources may be present, the ERO acting in consultation with the archeological consultant shall determine whether additional measures are warranted.

Additional measures that may be undertaken include further archeological testing, archeological monitoring, and/or an archeological data recovery program. If the ERO determines that a significant archeological resource is present and that the proposed project or variant could adversely affect the resource, then one of the following measures shall be implemented, at the discretion of the project sponsors, depending on the location of the resource:

- *The proposed project or variant shall be redesigned to avoid any adverse effect on the significant archeological resource. OR*
- *A data recovery program shall be implemented, unless the ERO determines that the archeological resource is of greater significance for interpretation than for research and that interpretive use of the resource is feasible.*

***Archeological Monitoring Program**. If the ERO acting in consultation with the archeological consultant determines that an archeological monitoring program (AMP) shall be implemented, the archeological monitoring program shall include the following provisions, at a minimum:*

- *The archeological consultant, the project sponsors (depending on the location of the resource and/or area of concern), and the ERO shall meet and consult on the scope of the archeological monitoring program a reasonable amount of time before the start of any project-related soil-disturbing activities. The ERO, in consultation with the archeological consultant, shall determine which project activities shall be subject to archeological monitoring. A single AMP or multiple AMPs may be produced to be consistent with project phasing. In most cases, any soil-disturbing activities, such as demolition, foundation removal, excavation, grading, installation of utilities, foundation work, pile driving (e.g., foundation, shoring), and site remediation, 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), shall explain how to identify evidence of the expected resource(s), and shall identify the appropriate protocol in case of the apparent discovery of an archeological resource.*
- *The archeological monitor(s) shall be present on the project site according to a 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, and other construction activities and equipment until the deposit is evaluated. If in the case of pile driving activity (e.g., foundation, shoring) the archeological monitor has cause to believe that the pile driving activity may affect an archeological resource, the 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. Intermittent reports shall be submitted for each phase of construction.

***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 sponsors (dependent on location of resource requiring implementation of this mitigation measure), and ERO shall meet and agree regarding the scope of the ADRP before preparation of a draft ADRP. The archeological consultant shall submit a draft ADRP to the ERO for each phase of construction or for the overall construction effort. The ADRP shall identify how the proposed data recovery program would preserve the significant information the archeological resource is expected to contain. That is, the ADRP shall 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, will be limited to the portions of the historical property that can be adversely affected by the proposed project or variant. Destructive data recovery methods shall not be applied to portions of the archeological resources if nondestructive methods are practical.

The scope of the ADRP shall include:

- *descriptions of proposed field strategies, procedures, and operations;*
- *a description of the selected cataloguing system and artifact analysis procedures;*
- *a description of and rationale for field and postfield discard and deaccession policies;*
- *consideration of an on-site/off-site public interpretive program during the course of the ADRP;*
- *recommended security measures to protect the archeological resource from vandalism, looting, and unintentionally damaging activities;*
- *a description of the proposed report format and distribution of results; and*
- *a 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. The FARR will be submitted after the conclusion of all construction activities that are required for the entire project. Information that can put any archeological resource at risk 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:

- *The Northwest Information Center shall receive one copy.*
- *The ERO shall receive a copy of the transmittal of the FARR to the Northwest Information Center.*
- *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 NRHP/CRHR.*

In instances of high public interest in or the high interpretive value of the resource, the ERO may require a different final report content, format, and distribution than that presented above.

Implementation of Mitigation Measure M-CR-2a would reduce the potential impact on archeological resources inadvertently discovered anywhere in the study area to *less than significant with mitigation.*

Impact CR-3: Construction under the proposed project or variant would disturb human remains, including those interred outside of formal cemeteries. *(Less than Significant with Mitigation)*

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

No known human burial locations have been identified within the study area during the completion of the archeological investigation (San Francisco, 2017a). However, the possibility cannot be discounted that human remains could be inadvertently exposed during ground-disturbing activities in the portion of the study area landward of the 1859 shoreline (Figure 3.4-1). Therefore, construction under either the proposed project or the variant could result in direct impacts on previously undiscovered human remains, including those interred outside of formal cemeteries, during ground-disturbing activities occurring landward of the 1859 shoreline. This impact would be significant.

Construction of the proposed project or variant could result in the disturbance of human remains, including those interred outside of formal cemeteries. Implementation of Mitigation Measure M-CR-3a would reduce this impact.

> **Mitigation Measure M-CR-3a: Implement Legally Required Measures in the Event of Inadvertent Discovery of Human Remains**
>
> *The following measures shall be implemented in the event of the discovery, or anticipated discovery, of human remains and associated burial-related cultural materials.*
>
> *The treatment of human remains and of associated or unassociated funerary objects discovered during any soils 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 the ERO, 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) who shall appoint a Most Likely Descendant (MLD) (PRC Section 5097.98). The archeological consultant, project sponsors, ERO, and MLD shall have up to but not beyond 6 days of 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 (State 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 as agreement has been made or, otherwise, as determined by the archeological consultant and the ERO.*

Implementation of Mitigation Measure M-CR-3a would reduce this impact regarding potential disturbance of human remains to *less than significant with mitigation.*

Impact CR-4: Construction under the proposed project or variant could result in a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074. (*Less than Significant with Mitigation*)

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Research to establish baseline conditions and Native American outreach efforts completed by the City and Planning Department have not revealed the presence of tribal cultural resources as defined in PRC Section 21074 in the study area (inclusive of all four project site properties). Tribal notification letters were sent to tribal entities by the Planning Department on August 19, 2015. No requests for consultation from any of the contacted parties have been received to date. Baseline research did reveal, however, that much of the study area exhibits elevated sensitivity for harboring buried (i.e., currently unknown) prehistoric archeological resources associated with the indigenous (Native American) inhabitation of the area. Such prehistoric resources may also be considered tribal cultural resources; under AB 52, this class of cultural resource includes sites, features, and objects with cultural value to a California Native American tribe that are either CRHR listed, eligible to be listed, or in a local register of historical resources as defined in PRC Section 5020.1(k).

The potential exists for construction under the proposed project or variant to expose prehistoric archeological resources in the study area. Thus, the potential also exists for project construction to cause substantial adverse change in the significance of a tribal cultural resource as defined in PRC Section 21074. This impact would be significant. However, implementation of Mitigation Measure M-CR-4a would reduce this impact.

> **Mitigation Measure M-CR-4a: Implement Tribal Cultural Resources Interpretive Program**
>
> *If the ERO determines that preservation in place of the tribal cultural resource pursuant to Mitigation Measure M-CR-2a, "Undertake an Archeological Testing Program," is both feasible and effective, then the archeological consultant shall prepare an archeological resource preservation plan (ARPP). Implementation of the approved ARPP by the archeological consultant shall be required when feasible. If the ERO determines that preservation in place of the tribal cultural resource is not a sufficient or feasible option, then the project sponsors shall implement an interpretive program of the tribal cultural resource in consultation with affiliated Native American tribal representatives. An interpretive plan produced in consultation with affiliated Native American tribal representatives, at a minimum, and approved by the ERO would be required to guide the interpretive program. The plan shall identify proposed locations for installations or displays, the proposed content and materials of those displays or installation, the producers or artists of the displays or installation, and a long-term maintenance program. The interpretive program may include artist installations, preferably by local Native American artists, oral histories with local Native Americans, artifacts displays and interpretation, and educational panels or other informational displays.*

Implementation of Mitigation Measure M-CR-4a would reduce this impact regarding potential change in the significance of a tribal cultural resource to *less than significant with mitigation*.

3.4.4 Cumulative Impacts

Impact-C-CR-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the study area, would substantially contribute to cumulative impacts related to cultural resources. (*Less Than Significant with Mitigation*)

The geographic scope for cumulative impacts on cultural resources includes the study area as defined for the proposed project and variant, including architectural and archeological resources, and the San Francisco Peninsula region as a whole. The proposed project or variant would contribute to cumulative impacts on cultural resources if the proposed project or variant and other projects listed in Table 3-1 would adversely affect cultural resources in the project vicinity.

Separate cumulative impact discussions and impact conclusions are presented below for archeology and historic architecture. An "overall" impact conclusion, which represents the most severe CEQA impact conclusion of those listed below, is provided at the end of the impact discussion.

Archeology

The potential exists for the cumulative projects to encounter previously unidentified cultural resources, including archeological resources, during ground-disturbing activities. Disturbance of these resources during construction of the proposed project and variant or other cumulative projects could result in significant cumulative impacts on archeological resources. The contribution of the proposed project or variant could be *cumulatively considerable*. However, with implementation of Mitigation Measures M-CR-2a and M-CR-3a, described above, the proposed project or variant would not make a cumulatively considerable contribution to impacts on archeological resources. This impact would be *less than significant with mitigation*.

Historic Architecture

Projects in and near San Francisco may represent a cumulative impact on known historical resources on the project site. Several of these projects are located more than 1 mile away from any such historical resources. These projects include Executive Park, Brisbane Baylands, Visitacion Valley/Schlage Lock, Eastern Neighborhoods Plan, and the Candlestick Park component of the Candlestick Point and Hunters Point Shipyard (Phases I and II).

Four projects are related to transportation improvements throughout the India Basin area:

- The *Blue Greenway/Bay Trail* is already considered in the project-specific impact analyses in this EIR, as this trail would lead through the 900 Innes property. (The trail is referred to as the "Bay Trail" in Chapter 2.0, "Project Description," and in the impact discussion for the India Basin Scow Schooner Boatyard.) This trail already exists at the India Basin Shoreline Park and India Basin Open Space properties and contributes to the current setting of historical resources. The Bay Trail lacks continuity in the India Basin area, but would be completed as part of the proposed project or variant. Outside of the project site, the Blue Greenway/Bay Trail would be a surface trail that would not be visible from any of the historical resources discussed in this EIR section.
- The *India Basin Transportation Action Plan* involves reconfiguring and improving the streets and streetscapes on-site and in the immediate vicinity, along Innes Avenue, Hunters Point Boulevard, Evans

Street, and Jennings Street between Donahue Street and Cargo Way. Many of the improvements proposed under the *India Basin Transportation Action Plan* will be studied as part of other planning efforts undertaken by the Planning Department in cooperation with the San Francisco Municipal Transportation Agency, RPD, San Francisco Public Works, Pacific Gas and Electric Company, and FivePoint (formerly Lennar Urban). However, the following improvements identified in the *India Basin Transportation Action Plan* are specifically proposed for implementation as part of the proposed project or variant and are analyzed in this EIR: new intersection signals and pedestrian crosswalks, left-turn pockets, and general Innes Avenue streetscape improvements including street benches, bicycle racks, trash receptacles, signage, and repaving. The plan proposes ROW changes that largely conform to the ROW alignments described in this EIR for the 700 Innes property in this EIR; therefore, they have already been considered for their potential to cause project-specific impacts on historical resources.

- The *San Francisco Bicycle Plan* and the *Muni Forward plan* propose changes to municipal bus routes and streetscape infrastructure, such as bulb-outs and bicycle lanes at Innes Avenue, that are not considered to detract noticeably from the setting of historical resources.

Therefore, none of these four proposed projects would appear to affect the CRHR eligibility of identified historical resources when combined with the proposed project or variant.

The remaining two currently proposed projects, the *Candlestick Point–Hunters Point Shipyard (Phases I and II)* and the *Hunters View* project, involve constructing new housing in the general vicinity of the project site and could impact historic architectural resources.

In Combination with 702 Earl Street

The *Candlestick Point–Hunters Point Shipyard (Phases I and II)* is a multiuse development under construction; it is located east of Earl Street, the eastern boundary of the project site, and continues east and south to cover the former Hunters Point Naval Shipyard and surrounding land. Four-story, multiunit residential buildings for this project have been completed along the eastern edge of Donahue Street. The area north of Innes Avenue between Earl Street and Donahue Street will be redeveloped as Northside Park, which will provide a buffer of open space between the proposed project or variant and the *Candlestick Point–Hunters Point Shipyard (Phases I and II)*.

Buildings belonging to the *Candlestick Point–Hunters Point Shipyard (Phases I and II)* projects may be visible from 702 Earl Street but are located more than two blocks east of additional historical resources, outside of their immediate settings. Therefore, the *Candlestick Point–Hunters Point Shipyard (Phases I and II)* projects are considered to have the potential to contribute to a cumulative impact, in combination with the proposed project or variant, only on 702 Earl Street.[7]

Current projects in the vicinity of 702 Earl Street would not have a physical impact on the characteristics that qualify this resource for eligibility for the CRHR under Criterion 3. Therefore, it does not appear that the *–Hunters Point Shipyard* projects in combination with the implementation of the proposed project or variant would compromise 702 Earl Street's eligibility for listing in the CRHR and, therefore, would result in a less-than-significant cumulative impact on historic architectural resources.

[7] The 702 Earl Street building has been found to be an individual historical resource under Criterion 3 (Architecture). The resource conveys its architectural significance principally through its historical design, materials, and workmanship.

In Combination with Shipwright's Cottage and India Basin Scow Schooner Boatyard Vernacular Cultural Landscape

The *Hunters View* project is a multiuse development proposed to be located on the hill northwest of Hunters Point Boulevard and opposite the western edge of the project site. The location of *Hunters View* currently contains two-story, 1950s-era public housing complexes. Phase I of the project, located west of Middle Point Road, is underway. Buildings belonging to the development may reach 65 feet in height.

The eastern boundary of the *Hunters View* project site is approximately one-and-one-half blocks west of the Shipwright's Cottage, the India Basin Scow Schooner Boatyard, and 911 Innes Avenue, an 1870s residence located across the street from the cottage. *Hunters View* is therefore marginally within the immediate setting of these historical resources, but its elevated location may allow it to be visible from these resources. The *Hunters View* project would not further compromise the spatial and functional relationships of the boatyard's cultural landscape that convey its historical use and significance. Taller buildings (up to 65 feet) may be more noticeable, but the area is already developed and the building heights would not alter views or significant landscape relationships. Thus, the *Hunters View* project in combination with other identified cumulative projects in the immediate proximity would not appear to contribute to a cumulative impact on the Shipwright's Cottage and India Basin Scow Schooner Boatyard Vernacular Cultural Landscape.

The Shipwright's Cottage has been found to be an individual historical resource under CRHR Criterion 1 (Events) and Criterion 3 (Architecture). The significance of the Shipwright's Cottage and 911 Innes Avenue under Criterion 1 is related to its physical features, but also to the setting, which conveys the development of the India Basin area during the late 19th and early 20th centuries. The *Hunters View* project in combination with the proposed project or variant would not change most important remaining elements of the Shipwright's Cottage's historical setting—its close visual and physical relationship to India Basin, as well as its visual relationship with other historical resources, the Albion Brewery, and 911 Innes Avenue. Furthermore, the Shipwright's Cottage and 911 Innes Avenue both convey their architectural significance under Criterion 3, principally through historical design, materials, and workmanship. Other projects in the vicinity of the project site would not physically alter or remove the characteristics that qualify the Shipwright's Cottage and 911 Innes Avenue for eligibility in the CRHR.

The proposed project or variant would result in a significant unavoidable impact on the Shipwright's Cottage and the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape (see Impact CR-1, above). If cumulative projects are located near or within culturally significant landscapes, constructing such projects could damage or alter those landscapes so that they no longer convey significance. However, there are no other cumulative projects in the vicinity of the Shipwright's Cottage and the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape that could result in a cumulative impact to cultural landscapes. Additionally, the *Hunters View* project would not contribute to the loss of the India Basin Scow Schooner Boatyard Vernacular Cultural Landscape's eligibility for listing in the CRHR. Therefore, the cumulative projects would result in a less-than-significant cumulative impact related to historic resources.

Overall Cumulative Impact Conclusion

The overall cumulative impacts on historic architectural and archeological resources of the proposed project or variant, in combination with past, present, and reasonably foreseeable projects, would be *less than significant with mitigation*.

3.4.5 References

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3.5 TRANSPORTATION AND CIRCULATION

This section describes the existing environmental and regulatory setting related to transportation and circulation and addresses the potential impacts of the proposed project and variant related to transportation and circulation. See Appendix D for the project's transportation impact study. Public comments were received regarding the following topics during the public scoping period for the Notice of Preparation:

- vehicle miles traveled (VMT) impacts;
- transportation demand management (TDM) and reduction of vehicle-trips;
- connectivity of the local street network;
- impacts on existing and planned transit service and existing and planned facilities for nonmotorized modes, including the San Francisco Bay Trail (Bay Trail);
- impacts of local access for nearby properties;
- impacts of construction activities on pavement quality; and
- impacts related to transport of hand-powered boats to and from the site.

These comments are addressed in this section.

3.5.1 Environmental Setting

Roadway Facilities

Regional

Both nearby regional freeways (U.S. Highway 101 [U.S. 101] and Interstate 280 [I-280]) are located west of the project site. U.S. 101 provides access to and from areas north and south of San Francisco, including the North Bay, Peninsula, and the South Bay. Regional roadway access to the India Basin area is provided via U.S. 101 and I-280. U.S. 101 connects to Marin County and the North Bay via the Golden Gate Bridge and continues south to San Jose. U.S. 101 connects with I-80 and the San Francisco–Oakland Bay Bridge (Bay Bridge) north of the project site.

Vehicles traveling to or from areas north of the project site would enter northbound U.S. 101 via the on-ramp from westbound Cesar Chavez Street and exit southbound U.S. 101 via the off-ramp to eastbound Cesar Chavez Street (Exit 432), about 2.5 miles northwest of the project site. Vehicles traveling along U.S. 101 to or from areas south of the project site would enter southbound U.S. 101 via the on-ramp from southbound Third Street at Jamestown Avenue and exit northbound U.S. 101 via the off-ramp to northbound Third Street near Bayview Park (Exit 429B), 2.2 miles southwest of the project site.

I-280 provides regional access to and from the Peninsula and South Bay. I-280's northern terminus is located northwest of the project site in the South of Market (SoMa) neighborhood of San Francisco. The Alemany Maze interchange, located about 3.5 miles southwest of the project site at the confluence of Bayshore Boulevard, Alemany Boulevard, San Bruno Avenue, and Industrial Street, connects I-280 and U.S. 101. Access to and from I-280 north of the project site is provided by the northbound on-ramp at Indiana Street/25th Street and the

southbound off-ramp at Pennsylvania Avenue north of 25th Street (Exit 55). Access to and from I-280 south of the project site is provided by the southbound on-ramp at Pennsylvania Avenue north of 25th Street and the northbound off-ramp at Pennsylvania Street/Cesar Chavez Street (Exit 55). Access between these ramps and the project site is provided by Evans Avenue, Third Street, and Cesar Chavez Street.

Local

Local roadway access to the India Basin area and project site is provided by the local street network, including the key roadways described below.

East-West Roadways

Cargo Way is a four-lane, divided two-way roadway that runs east-west between Third Street and Jennings Street. On-street parking is not permitted along Cargo Way, and sidewalks are present on both sides of the street. A two-way cycle track runs along the south side of the street. Cargo Way is located northwest of the India Basin area and can be accessed via Hunters Point Boulevard and Jennings Street. The *San Francisco General Plan* (General Plan) refers to Cargo Way as a Secondary Arterial.

Evans Avenue runs parallel to Cargo Way from Cesar Chavez Street to Hunters Point Boulevard. Between Cesar Chavez Street and Third Street, Evans Avenue is a four-lane, two-way roadway with Class III bikeways. East of Third Street, Evans Avenue is a four-lane roadway with Class II bikeways, a center median, and left-turn pockets providing access to driveways and cross streets. On-street parking is permitted along Evans Avenue, and sidewalks are present on both sides of the street. The General Plan refers to Evans Avenue as a Secondary Arterial. The San Francisco Municipal Railway (Muni) bus routes 19 Polk and 44 O'Shaughnessy run along Evans Avenue between Third Street and Jennings Street/Middle Point Road near the project site.

Innes Avenue runs east-west between Middle Point Road and Coleman Street along the southern perimeter of the project site. Innes Avenue is a four-lane, two-way roadway with on-street parking, a sidewalk on the north side of the street, and Class III bikeways. The General Plan refers to Innes Avenue as a Secondary Arterial. The Muni route 19 Polk provides service along this roadway with an existing stop at the intersection of Innes Avenue and Arelious Walker Drive.

Hunters Point Boulevard runs north-south along the western edge of the project site, connecting Evans Avenue and Innes Avenue. Class II bikeways and sidewalks are provided on both sides of the street, but no on-street parking is permitted. The General Plan refers to Hunters Point Boulevard as a Secondary Arterial.

Oakdale Avenue is situated several blocks south of the project site and runs east-west between Bayshore Boulevard and Griffith Street, with a gap between Keith Street and Ingalls Street. On-street parking is permitted on Oakdale Avenue, and sidewalks are present on both sides of the street. Oakdale Avenue features Class II bikeways between Bayshore Boulevard and Mendell Street. The General Plan refers to Oakland Avenue as a Secondary Arterial. The Muni route 23 Monterey provides service along this roadway between Bayshore Boulevard and Toland Street. East of Third Street, Oakdale Avenue follows the southern foot of the Hunters Point Ridge (located west of the project site and currently occupied by the Hunters View public housing community). No direct access is available between Oakdale Avenue and the project site. Access is instead provided by Ingalls Street, which connects into the western terminus of Innes Avenue at the center of Hunters View.

Palou Avenue is situated several blocks south of the project site and runs east-west between Barneveld Avenue and a dead-end east of Griffith Street. On-street parking is permitted on Palou Avenue, and sidewalks are present on both sides of the street. Class III bikeways exist on Palou Avenue between Phelps Street and Griffith Street. The General Plan does not identify any specific designations for Palou Avenue. The Muni route 23 Monterey provides service along Palou Avenue between Griffith Street/Crisp Road and Industrial Avenue, and the route 44 O'Shaughnessy operates between Keith Street and Quint Street/Silver Avenue. Similar to Oakdale Avenue, no direct access is available between Palou Avenue and the project site, but a connection is provided via Ingalls Street.

North-South Roadways

Third Street is a four-lane divided roadway that runs north-south from Market Street in downtown San Francisco south through the Mission Bay, Dogpatch, and Bayview neighborhoods, ending at Bayshore Boulevard near U.S. 101. Muni's T Third Street light rail line runs along the center of Third Street, which also features Class III bikeways in the curbside lane. Access between Third Street and the India Basin area is provided by Evans Avenue, Hunters Point Boulevard, and Innes Avenue.

Jennings Street/Middle Point Road/Ingalls Street is a two-lane north-south roadway west of the project site. Middle Point Road runs between Evans Avenue and Innes Avenue, becoming Jennings Street north of Evans Avenue (continuing to a terminus at Amador Street) and Ingalls Street south of Innes Avenue (continuing south through Double Rock to Jamestown Avenue). The roadway is two-way north of Catalina Street and south of Innes Avenue, but is one-way southbound between Catalina Street and Innes Avenue. On-street parking is permitted and sidewalks are present on both sides of the street, but no designated bikeways exist. The Muni route 44 O'Shaughnessy runs along the roadway between Evans Avenue and Hudson Avenue.

Project Site

As described in Table 2-1, "Project Site," in Chapter 2.0, approximately 7.52 acres of the 38.84-acre project site consist of public rights-of-way (ROWs). Of these, only Arelious Walker Drive is fully paved and improved. Griffith Street, Hudson Avenue, and Earl Street are generally unpaved or only partially paved, and are unimproved. Portions of the Hudson Avenue ROW on the 900 Innes property were never improved and are currently submerged. Fences restrict public access onto these ROWs at several locations, including along Hudson Avenue near the eastern and western boundaries of the 900 Innes property and along Griffith Street at the southern boundary of the 900 Innes property. These streets are used primarily for local access to adjacent properties or for automobile parking or storage.

Although not considered a public ROW, a fully paved and improved portion of Hawes Street provides access and automobile parking for India Basin Shoreline Park.

Background on Vehicle Miles Traveled in San Francisco and Bay Area

Many factors affect 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 TDM. Typically, low-density development occurring at a great distance from other land uses, located in areas with poor access to travel modes other than private automobiles, generates more automobile

travel than development located in urban areas, where a higher density, mix of land uses, and travel options other than private vehicles are available.

Given these travel behavior factors, San Francisco has a lower VMT ratio (i.e., VMT per person) than the nine-county San Francisco Bay Area (Bay Area) region. In addition, some areas of the City have lower VMT ratios than other areas of the City.

The San Francisco County Transportation Authority (SFCTA) uses the San Francisco Chained Activity Model Process (SF-CHAMP) to estimate VMT by private automobiles and taxis for different land use types. Travel behavior in SF-CHAMP is calibrated based on observed behavior from the California Household Travel Survey 2010–2012, from U.S. Census data regarding automobile ownership rates and county-to-county worker flows, and from observed vehicle counts and transit boardings.

SF-CHAMP uses a synthetic population, a set of individual actors representing the Bay Area's actual population who make simulated travel decisions for a complete day. For office and residential uses, SFCTA uses a tour-based analysis that examines the entire chain of trips over the course of a day, not just trips to and from the project site. For retail uses, SFCTA uses a trip-based analysis, which counts VMT from individual trips to and from the project site (as opposed to the entire chain of trips). 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, such that adding the tour VMT for each location together would overestimate VMT (Planning Department, 2016).[1]

Table 3.5-1 summarizes average daily VMT per capita by land use for the Bay Area and for the transportation analysis zone (TAZ) that contains the project site (TAZ 446), which is bounded by Evans Avenue and the India Basin shoreline to the north, Innes Avenue to the south, Earl Street to the east, and Middle Point Road to the west. TAZs represent geographical areas of the City in transportation planning models and can be used for transportation analysis and other planning purposes. The zones vary in size from single city blocks in the downtown core to multiple blocks in outer neighborhoods, to even larger zones in historically industrial areas like the Hunters Point Shipyard.

As shown in Table 3.5-1, average daily VMT per capita in TAZ 446 is substantially lower than the corresponding regional average for residential, office, and retail uses.

Table 3.5-1: Average Daily Vehicle Miles Traveled Per Capita—Existing Conditions

Land Use	Average Daily VMT per Capita	
	San Francisco Bay Area (regional average)	TAZ 446
Residential (per resident)	17.2	9.0
Office (per employee)	19.1	15.3
Retail (per employee)	14.9	8.1

Notes: TAZ = transportation analysis zone; VMT = vehicle miles traveled
Source: San Francisco, 2017.

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

Transit Network

Regional

Major regional transit providers serving San Francisco include Bay Area Rapid Transit (BART); Caltrain; the Alameda–Contra Costa Transit District (AC Transit); the San Mateo County Transit District (SamTrans); the Golden Gate Bridge, Highway and Transportation District (GGBHTD); and the Water Emergency Transportation Authority (WETA). Although none of these regional transit providers serve the project site directly, first- and last-mile connections are available via local transit (Muni), on foot, or on bike.

Bay Area Rapid Transit

BART provides regional rail transit between the East Bay (outer terminals at Pittsburg/Bay Point, Richmond, Dublin/Pleasanton, and Warm Springs/South Fremont) and San Francisco, and between San Mateo County (outer terminals at San Francisco International Airport [SFO] and Millbrae) and San Francisco, with operating hours between 4:00 a.m. and midnight on weekdays. In San Francisco, BART operates underground below Market Street between the Embarcadero Station and the Civic Center/United Nations Plaza Station before proceeding south through the Mission District toward Daly City. The base headway for each line is 15 minutes, with supplementary service on the Pittsburg/Bay Point–SFO/Millbrae line reducing headways during the weekday a.m. and p.m. peak periods to as little as 5 minutes.

The BART stations most easily accessible from the project site are the 24th Street/Mission Station, approximately 3.5 miles northwest of the project site, and the Glen Park Station, about 4 miles west of the project site. Access to and from the 24th Street/Mission Station is provided by Muni's 19 Polk and 48 Quintara–24th Street routes (transferring at Connecticut Street/25th Street). Access to and from the Glen Park Station is provided by Muni's 44 O'Shaughnessy route.

Caltrain

Caltrain provides passenger rail service on the Peninsula corridor between San Francisco and San Jose, connecting San Francisco, San Mateo, and Santa Clara counties. Limited additional service is available south of San Jose, serving Gilroy and other communities in southern Santa Clara County. Caltrain's northern terminus at the San Francisco (Fourth & King) Station is located in the Central SoMa/China Basin area. Caltrain operates a mixed service pattern of local, limited, and express "Baby Bullet" trains, resulting in irregular headways varying by station and train type. On weekdays, service during the morning and afternoon/evening peak periods consists of limited and Baby Bullet trains, with local trains operating during the early morning, midday, and late evening periods.

The project site is roughly equidistant from the 22nd Street Station to the north and the Bayshore Station to the south; each station is about 2.5 miles away. The 22nd Street Station is served only by local trains and some limited trains in the "traditional" peak direction (i.e., northbound during weekday mornings and southbound during weekday afternoons and evenings), but is generally served by all trains in the reverse-peak direction. The Bayshore Station is served only by local trains and some limited trains in both the traditional peak and reverse-peak directions. Access to the 22nd Street Station is provided by Muni's 19 Polk and 48 Quintara–24th Street

routes (transferring at Connecticut Street/25th Street). The Bayshore Station can be accessed via the T Third Street's Arleta Station, which is located a short walk from Caltrain's Bayshore Station.

Alameda–Contra Costa County Transit District

AC Transit operates bus service in western Alameda and Contra Costa counties, including an extensive network of "Transbay" routes connecting the East Bay with San Francisco and San Mateo County. AC Transit operates 27 Transbay routes between the East Bay and downtown San Francisco's Transbay Temporary Terminal.[2] The Transbay Temporary Terminal is located about 5 miles north of the project site and is most easily accessible from the site by taking Muni's 19 Polk route, transferring to the T Third Street, and walking from the surface-level The Embarcadero & Howard Street Station or the underground Embarcadero Station. Most Transbay service is provided only during commute periods, with headways of approximately 15–20 minutes, although some routes also provide limited service during off-peak hours (midday weekdays and on weekends).

San Mateo County Transit District

SamTrans operates bus and rail service in San Mateo County. In addition to funding Caltrain service, SamTrans operates a network of local buses in the county and additional routes into adjacent portions of San Francisco and Santa Clara counties. SamTrans Routes KX, 292, and 397 serve downtown San Francisco and provide connections to and from various locations in San Mateo County. In general, SamTrans service in downtown San Francisco operates along Mission Street to and from the Transbay Temporary Terminal. SamTrans routes serving downtown San Francisco do not make local stops in the project area, but the closest stops for Routes 292 and 397 outside of downtown San Francisco are located along Bayshore Boulevard. These stops can be accessed by Muni's 44 O'Shaughnessy (Bayshore Boulevard/Silver Avenue) or 54 Felton (Bayshore Boulevard/Fitzgerald Avenue). SamTrans cannot pick up northbound passengers or drop off southbound passengers in San Francisco.

Golden Gate Bridge, Highway and Transportation District

The GGBHTD operates bus and ferry service between the North Bay (Marin and Sonoma counties) and San Francisco under the Golden Gate Transit (GGT) and Golden Gate Ferry brands. GGT operates 18 "Commute" routes and four "Regional" routes into and out of San Francisco across the Golden Gate Bridge. With the exception of Route 92 (which primarily follows Geary Boulevard), all of these routes use Doyle Drive/Presidio Parkway, Richardson Avenue, and Lombard Street. From there, most Commute routes use Beach Street/North Point Street and Battery Street/Sansome Street to reach downtown San Francisco, while all Regional routes and some Commute routes use Van Ness Avenue. Commute routes terminate at the GGT yard located underneath the western approach to the Bay Bridge in Central SoMa, while Regional routes terminate at the Transbay Temporary Terminal, with multiple stops along Mission Street. Golden Gate Ferry operates ferry service connecting Larkspur, Sausalito, and Tiburon with San Francisco's Ferry Building. On days when the San Francisco Giants have home games, supplementary ferry service is available at the AT&T Park terminal.

[2] The Transbay Temporary Terminal is a temporary facility replacing the former Transbay Terminal and is located in the Transbay area of East SoMa, occupying the entire block bounded by Howard Street to the north, Folsom Street to the south, Main Street to the east, and Beale Street to the west. Construction is currently under way on the future Transbay Transit Center, the permanent replacement for the Transbay Terminal, which will extend from Main Street to just east of Second Street, between Minna Street and Natoma Street. The first phase of the Transbay Transit Center is scheduled to open sometime in fall 2017.

Water Emergency Transportation Authority

WETA is a regional public transit agency that operates ferry service on San Francisco Bay (Bay) and coordinates the water transit response to regional emergencies. WETA operates from nine terminals, located in Alameda (Main Street and Harbor Bay), Oakland (Jack London Square), San Francisco (Ferry Building, Pier 41, and AT&T Park), South San Francisco (Oyster Point), and Vallejo (Georgia Street and Mare Island). The nearest regular-service terminal to the project site is the San Francisco Ferry Building. On days when the San Francisco Giants have home games, supplementary ferry service is available at the AT&T Park terminal. Ferry routes typically operate at 30- to 60-minute headways depending on the time of day and day of the week.

Regional Transit Capacity

Regional transit service into and out of San Francisco can be described using screenlines defined by the San Francisco Planning Department (Planning Department) in the *Transportation Impact Analysis Guidelines for Environmental Review* (*SF Guidelines*) (Planning Department, 2002).[3] Table 3.5-2 summarizes existing ridership and capacity utilization at the maximum load point (MLP) for regional transit providers on the downtown screenlines. For regional operators, the MLP is typically at the San Francisco city limit (e.g., the East Bay MLP would occur at the Transbay Tube and on the Bay Bridge). Data are shown for the inbound direction during the

Table 3.5-2: Regional Transit Screenlines—Existing Conditions

Screenline	Weekday A.M. Peak Hour[1]			Weekday P.M. Peak Hour[1]		
	Ridership	Capacity	Capacity Utilization	Ridership	Capacity	Capacity Utilization
East Bay Screenline						
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 Subtotal	*27,777*	*27,255*	***102%***	*27,549*	*28,325*	*97%*
North Bay Screenline						
Golden Gate Transit Buses	1,330	2,543	52%	1,384	2,817	49%
Ferries	1,082	1,959	55%	968	1,959	49%
Subtotal	*2,412*	*4,502*	*54%*	*2,352*	*4,776*	*49%*
South Bay Screenline						
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%
Screenline Subtotal	*16,576*	*22,987*	72%	*16,018*	*22,320*	72%
Total	*46,765*	*54,744*	85%	*45,919*	*55,421*	*83%*

Notes:
AC Transit = Alameda–Contra Costa County Transit District; BART = Bay Area Rapid Transit; SamTrans = San Mateo County Transit District
Bold indicates capacity utilization of 100 percent or greater.
[1] Shows the a.m. peak hour as inbound (i.e., toward downtown) only and the p.m. peak hour as outbound (i.e., away from downtown) only.
Source: San Francisco, 2017.

[3] Screenlines represent a grouping of transit services, usually by a common direction or origin/destination served, reflecting the fact that multiple transit options or alternatives are generally available to transit passengers on their journeys. For downtown, for example, the Planning Department typically describes transit ridership and capacity in terms of three screenlines for regional transit (East Bay, North Bay, and South Bay) and four screenlines for local transit (northeast, northwest, southeast, and southwest).

weekday a.m. peak hour and for the outbound direction during the weekday p.m. peak hour, as these are the dominant travel patterns during the respective time periods. For regional transit providers, the established capacity utilization threshold[4] is 100 percent and equals the number of available seats, with the exception of BART, which also includes standing capacity. As shown in Table 3.5-2, the East Bay regional screenline currently exceeds the established capacity utilization standard in the a.m. peak hour, primarily because of overcrowding on BART. All other regional screenlines operate within established utilization standards.

Local

Primary local public transit access to the project site is provided by Muni bus service, which operates bus, cable car, and light rail lines in San Francisco.

Figure 3.5-1 shows transit routes near the project site. Table 3.5-3 summarizes Muni service in the project vicinity. Typically, a quarter-mile radius is generally considered a reasonable walkshed for transit access.

Table 3.5-3: Muni Service in the Project Vicinity

Route	Weekday Headways[1] (minutes)			Weekday Hours of Operation	Nearest Stop	Distance to Project Site[2] (miles)	Neighborhoods Served
	A.M.	Midday	P.M.				
Within a ¼-mile radius of the project site							
19 Polk	15	15	15	5:15 a.m.–12:45 a.m.	Innes Ave. & Griffith St.	0.1	Russian Hill, Nob Hill, Civic Center, SoMa, Potrero Hill, Bayview, Hunters Point
44 O'Shaughnessy	8	12	9	5:30 a.m.–12:45 a.m.	Middle Point Rd. & Innes Ave.	0.2	Inner Richmond, Inner Sunset, Forest Knolls, Bernal Heights, Bayview, Hunters Point
54 Felton	20	20	20	5:30 a.m.–12:30 a.m.	Northridge Rd. & Harbor Rd.	0.2	Ingleside Heights, Sunnyside, Bernal Heights, Bayview, Hunters Point
Within a 1-mile radius from the project site							
23 Monterey	20	20	20	5:15 a.m.–11:30 p.m.	Oakdale Ave. & Ingalls St.	0.6	Lakeshore, Sunnyside, Glen Park, Bernal Heights, Bayview, Hunters Point
More than 1 mile from the project site							
24 Divisadero	10	10	10	5:45 a.m.–12:30 a.m.	Third St. & Palou Ave.	1.1	Pacific Heights, Western Addition, Hayes Valley, Noe Valley, Bernal Heights, Bayview, Hunters Point
T Third Street	9	10	9	4:30 a.m.–1:30 a.m.	Third St. & Evans Ave.	1.1	West Portal, Market Street, Mission Bay, Dogpatch, Portola Place, Visitacion Valley

Notes:
Muni = San Francisco Municipal Railway
[1] Peak-period definitions: a.m. peak = 7:00 a.m.–9:00 a.m.; midday peak = 12:00 p.m.–2:00 p.m.; p.m. peak = 4:00 p.m.–7:00 p.m.
[2] Distances are approximate, measured from the center of the project site along local streets.
Sources: San Francisco, 2017.

[4] The capacity utilization threshold represents the ideal maximum level of crowding, as measured by the ratio of ridership to capacity.

Source: San Francisco, 2017

Figure 3.5-1: Existing Transit Network

Muni bus stops adjacent to the project site are located at Innes Avenue at Hunters Point Boulevard, Griffith Street, Arelious Walker Drive, and Earl Street, and are served by the 19 Polk bus route.

Local Transit Capacity

Ridership and capacity for local transit service between the project site and downtown San Francisco can be described using the screenline method, similar to the downtown screenlines for regional transit. Ridership data have been obtained from the automated passenger-count data collected by the San Francisco Municipal Transportation Agency (SFMTA) in September and October 2013. Data regarding capacity (headways and vehicle types) from the same period were also obtained from SFMTA, representing the most recent available data.

Because San Francisco's transit system is arranged largely to carry passengers into and out of downtown, Muni service can be grouped into four screenlines that surround downtown San Francisco, as defined in the *SF Guidelines* (Planning Department, 2002). Table 3.5-4 summarizes the existing ridership and capacity utilization at the MLP for the routes crossing the four downtown screenlines. Data are shown for the inbound direction during the weekday a.m. peak hour and for the outbound direction during the weekday p.m. peak hour, as these are the dominant travel patterns during the respective time periods.

It should be noted that the SFMTA Board has adopted an 85 percent performance standard for capacity utilization and has determined that this performance standard most appropriately reflects actual operations and the likelihood of "pass-ups" (i.e., vehicles not stopping to pick up more passengers) (SFMTA, 2017). The Planning Department uses this performance standard as a threshold of significance for determining impacts on transit capacity on Muni lines. The capacity is measured as a full seated and standing load of passengers.

As shown in Table 3.5-4, most directional screenlines and corridors within the screenlines operate under the 85 percent performance standard, but some exceed the standard. Corridors exceeding 85 percent capacity utilization include the Subway lines during the weekday a.m. peak hour (102 percent) and the Fulton/Hayes and Third Street corridors during the weekday p.m. peak hour (89 percent and 99 percent, respectively). The Southwest screenline (94 percent) also exceeds 85 percent capacity utilization during the weekday a.m. peak hour.

The analysis presented in Table 3.5-4 represents MLPs focused around downtown San Francisco and is intended to capture crowding on Muni services into and out of downtown. To capture localized crowding on transit services in the vicinity of the project site, it is also useful to consider crowding inside Muni vehicles on individual routes within convenient walking distance of the project site—in this case, the 19 Polk and 44 O'Shaughnessy routes. Because of their proximity to the project site, these routes are expected to carry the majority of transit ridership to and from the project site, even if some of those riders also transfer to or from other local or regional transit services as part of their transit trip.

Table 3.5-4: Muni Downtown Screenlines—Existing Conditions

Screenline	Weekday A.M. Peak Hour[1]			Weekday P.M. Peak Hour[1]		
	Ridership	Capacity	Capacity Utilization	Ridership	Capacity	Capacity Utilization
Northeast Screenline						
Kearny/Stockton[2]	2,211	3,050	72%	2,245	3,327	67%
Other lines[3]	538	1,141	47%	683	1,078	63%
Subtotal	*2,749*	*4,191*	*66%*	*2,928*	*4,405*	*66%*
Northwest Screenline						
Geary[4]	1,821	2,490	73%	1,964	2,623	75%
California[5]	1,610	2,010	80%	1,322	1,752	75%
Sutter/Clement[6]	480	630	76%	425	630	67%
Fulton/Hayes[7]	1,277	1,680	76%	1,184	1,323	**89%**
Balboa[8]	758	1,019	74%	625	974	64%
Subtotal	*5,946*	*7,829*	*76%*	*5,520*	*7,302*	*76%*
Southeast Screenline						
Third Street[9]	350	793	44%	782	793	**99%**
Mission[10]	1,643	2,509	65%	1,407	2,601	54%
San Bruno/Bayshore[11]	1,689	2,134	79%	1,536	2,134	72%
Other lines[12]	1,466	1,756	83%	1,084	1,675	65%
Subtotal	*5,148*	*7,192*	*72%*	*4,809*	*7,203*	*67%*
Southwest Screenline						
Subway lines[13]	6,330	6,205	**102%**	4,904	6,164	80%
Haight/Noriega[14]	1,121	1,554	72%	977	1,554	63%
Other lines[15]	465	700	66%	555	700	79%
Subtotal	*7,916*	*8,459*	***94%***	*6,436*	*8,418*	*76%*
Total	*21,759*	*27,671*	*79%*	*19,693*	*27,328*	*72%*

Notes:
Muni = San Francisco Municipal Railway

Bold indicates capacity utilization of 85 percent or greater.

[1] Shows the a.m. peak hour as inbound (i.e., toward downtown) only and the p.m. peak hour as outbound (i.e., away from downtown) only.

[2] 8 Bayshore, 30 Stockton, 30X Marina Express, 41 Union, 45 Union–Stockton.

[3] F Market & Wharves, 10 Townsend, 12 Folsom–Pacific.

[4] 38 Geary, 38R Geary Rapid, 38AX Geary 'A' Express, 38BX Geary 'B' Express.

[5] 1 California, 1AX California 'A' Express, 1AX California 'B' Express.

[6] 2 Sutter, 3 Clement.

[7] 5 Fulton, 21 Hayes.

[8] 31 Balboa, 31AX Balboa 'A' Express, 31BX Balboa 'B' Express.

[9] T Third Street.

[10] 14 Mission, 14R Mission Rapid, 14X Mission Express, 49 Van Ness-Mission.

[11] 8AX Bayshore 'A' Express, 8BX Bayshore 'B' Express, 8 Bayshore, 9 San Bruno, 9R San Bruno Rapid.

[12] J Church, 10 Townsend, 12 Folsom-Pacific, 19 Polk, 27 Bryant.

[13] K Ingleside, L Taraval, M Ocean View, N Judah.

[14] 6 Haight–Parnassus, 7/7R Haight–Noriega/Haight–Noriega Limited, 7X Noriega Express, NX Judah Express.

[15] F Market & Wharves.

Source: San Francisco, 2017.

In particular, the 19 Polk bus travels along Innes Avenue and provides a direct connection to the project site, as well as connections to other Muni lines such as T Third Street. Slightly farther away, the 44 O'Shaughnessy bus travels along Middle Point Road, with the closest stop at Innes Avenue/Middle Point Road, approximately 2,000 feet (approximately 7 minutes walking distance) from the project site. Although the nearest stop for the 54 Felton route at Northridge Road/Dormitory Road is only 500 feet from the project site (as measured from the Arelious Walker Drive/Innes Avenue intersection), this walk features an almost-continual elevation gain of 95 feet along a stairway. Because of this elevation gain, this route is not considered within convenient walking distance of the project site and is not considered in this localized transit capacity analysis.

Typically, for route-specific capacity impact analysis, only the peak demand on a given transit route over the course of the entire route (the "global" maximum load point [GMLP]) is evaluated. However, because it is expected that a substantial number of riders on the 19 Polk bus would transfer to the T Third Street train before reaching the GMLP, a "local" maximum load point (LMLP) was also evaluated for the 19 Polk bus. An LMLP along Evans Avenue east of Third Street was chosen to capture the large proportion of project-generated transit ridership that would be expected to use the 19 Polk bus to transfer to or from the T Third Street train.

Table 3.5-5 summarizes existing ridership and capacity utilization on the localized screenlines surrounding the project site. As shown in Table 3.5-5, the 44 O'Shaughnessy route inbound to the project site currently exceeds the 85 percent capacity utilization performance standard at its GMLP during the weekday p.m. peak hour. All other routes and directions operate below the 85 percent performance standard for the selected MLPs and peak hours.

Table 3.5-5: Muni Localized Screenlines—Existing Conditions

Direction/Route	Weekday A.M. Peak Hour				Weekday P.M. Peak Hour			
	MLP	Ridership	Capacity	Utilization	MLP	Ridership	Capacity	Utilization
Inbound to Project Site[1]								
19 Polk (LMLP)	Evans Ave./ Newhall St.	24	252	10%	Evans Ave./ Newhall St.	44	252	17%
19 Polk (GMLP)	Eighth St./ Howard St.	160	252	63%	Eighth St./ Mission St.	168	252	67%
44 O'Shaughnessy (GMLP)	Silver Ave./ Dartmouth Ave.	300	473	63%	Silver Ave./ Mission St.	360	420	**86%**
Outbound from Project Site[2]								
19 Polk (LMLP)	Evans Ave./ Newhall St.	84	252	33%	Evans Ave./ Newhall St.	52	252	21%
19 Polk (GMLP)	Larkin St./ O'Farrell St.	188	252	75%	Seventh St./ Howard St.	180	252	71%
44 O'Shaughnessy (GMLP)	O'Shaughnessy Blvd./Del Vale Ave.	368	473	78%	Silver Ave./ San Bruno Ave.	240	420	57%

Notes:
Ave. = Avenue; Blvd. = boulevard; GMLP = global maximum load point; LMLP = local maximum load point; MLP = maximum load point; Muni = San Francisco Municipal Railway; St. = Street

Bold indicates capacity utilization of 85 percent or greater.

[1] Corresponds to the "outbound" direction for these routes, as defined by Muni.

[2] Corresponds to the "inbound" direction for these routes, as defined by Muni.

Source: San Francisco, 2017.

Bikeway Network

Bikeways can typically be classified into four general categories based on the quality of separation from motorized traffic:

- *Class I bikeways* provide a completely separated ROW for the exclusive use of bicyclists and pedestrians, with cross-flow minimized. These facilities typically consist of off-street bicycle paths or trails and are generally shared with pedestrians. Class I facilities may be adjacent to an existing roadway or may be entirely independent of existing roadway facilities, such as many shared-use recreational trails.
- *Class II bikeways* provide a striped lane for one-way bicycle travel on a street or highway. These facilities typically consist of striped bicycle lanes on roadways, providing a minimum of 4–5 feet of space for bicyclists.
- *Class III bikeways* provide for shared use with automobile traffic. These facilities consist of designated and signed bicycle routes where bicyclists share the roadway with other vehicles, and may include other features such as pavement markings (e.g., "sharrows") to reinforce their shared nature.
- *Class IV bikeways* provide enhanced facilities for the exclusive use of bicyclists, generally falling in between Class I and Class II bikeways in terms of protection for bicyclists. Class IV facilities are designed with physical separation between the bikeway and adjacent automobile traffic through grade separation, flexible posts, inflexible physical barriers, on-street parking, or raised islands, and are typically referred to as "separated bikeways" or "cycle tracks." They are typically (but not always) on-street, and may be designed for one-way or two-way bicycle traffic.

India Basin Area

Figure 3.5-2 illustrates current on-street bicycle facilities, as designated by the *San Francisco Bike Plan* (June 2009) (SFMTA, 2009).

In the immediate vicinity of the project site, Class II bikeways (bicycle lanes) are provided along Evans Avenue (east of Third Street) and Hunters Point Boulevard, continuing as Class III bikeways (signed bicycle route, but without sharrow markings) along Innes Avenue adjacent to the project site. A Class IV bikeway is provided along Cargo Way west of Heron's Head Park, continuing as a Class II bikeway across the Islais Creek channel on Illinois Street. Farther from the project site, Class III bikeways are provided along Third Street, Palou Avenue, Phelps Street, and Evans Avenue (west of Third Street), and Class II bikeways are provided along Cesar Chavez Street. Additionally, portions of the Bay Trail, a regional recreational trail circling San Francisco and San Pablo bays, have been completed within or nearby the project site.

The project vicinity currently lacks Ford GoBike (formerly Bay Area Bike Share) stations, but the bikeshare system in the Bay Area is expanding to 7,000 bicycles through 2018, including additional stations in San Francisco, San Jose, Oakland, Berkeley, and Emeryville. Based on preliminary planning for station expansion in San Francisco, the nearest Ford GoBike station to the project site would be located approximately 1.5 miles northwest. Final station sites, however, are subject to change.

Source: San Francisco, 2017

Figure 3.5-2: Existing Bikeway Network

Minimal bicycle activity was observed in the project vicinity, likely a result of high-speed automobile traffic, the absence of bikeway facilities, and the danger presented by the door zones adjacent to on-street parking along Innes Avenue and Hunters Point Boulevard. The majority of the project area is generally flat, with limited changes in grades, facilitating bicycling in and through the area. Grade changes along Innes Avenue are minor and do not present a major deterrent to bicycling, but shallow grade changes along Hunters Point Boulevard can present a minor challenge to bicyclists. The terrain to the south and immediate west of the project site, however, is very steep and challenging to bicyclists, although access to Hunters Point Shipyard via Donahue Street is feasible with minimal grade changes.

A substantial proportion of bicycling activity in the vicinity of the project site occurs along the Bay Trail. Conditions on the Bay Trail are mixed: the pathway is not continuous through the area, and paving quality is adequate, but not excellent.

Project Site

Portions of the Bay Trail within the India Basin Shoreline Park and India Basin Open Space properties have been completed. No other existing bikeways are present on the project site. Bike parking in the immediate vicinity of the project site is limited to two racks on the north side of Innes Avenue between Hunters Point Boulevard and Griffith Street and a bike corral containing five racks on the north side of Innes Avenue between Arelious Walker Drive and Earl Street.

Pedestrian Network

Pedestrian facilities typically include sidewalks, crosswalks, and curb ramps.

India Basin Area

Existing pedestrian conditions along Jennings Avenue between Cargo Way and Evans Avenue and along the Evans Avenue–Hunters Point Boulevard–Innes Avenue corridor between Jennings Street/Middle Point Road and Donahue Street are described below based on field visits conducted in May 2015.

Because of the generally undeveloped nature of the project site and surrounding area, the pedestrian facilities in the immediate vicinity of the project site range from adequate to nonexistent, and their quality ranges from poor to acceptable. The presence and width of sidewalks in the study area vary greatly. Marked crosswalks are present at several locations but are not provided at all intersections. The sidewalks are poorly maintained, and street furniture and other amenities are limited. None of the sidewalks in the study area meet the minimum sidewalk width specified in the *San Francisco Better Streets Plan* (Better Streets Plan), which is 12 feet (15 feet recommended) for Commercial Throughway and Residential Throughway streets. Innes Avenue is classified as a Commercial Throughway between Hunters Point Boulevard and Arelious Walker Drive and as a Residential Throughway between Arelious Walker Drive and Earl Street.

Adjacent to the project site, most intersections include curb ramps, although they are one-directional and do not reflect the City's most recently defined best practices for installing curb ramps. There are no signalized intersections along the surveyed street segments.

General impediments to pedestrian conditions observed in the project vicinity include:

- long distances between intersections, which limit crossing opportunities;
- intersections without marked crosswalks (e.g., pedestrian activity to and from the bus stops at Innes Avenue/Arelious Walker Drive);
- narrow effective sidewalk widths and, at times, no sidewalks at all;
- long crossing distances that increase pedestrian exposure to automobile traffic (e.g., four travel lanes along Innes Avenue without signalized or marked crosswalks);
- high traffic speeds in excess of the speed limit (25 miles per hour [mph]); and
- lack of Americans with Disabilities Act (ADA)–accessible curb ramps at some intersection corners.

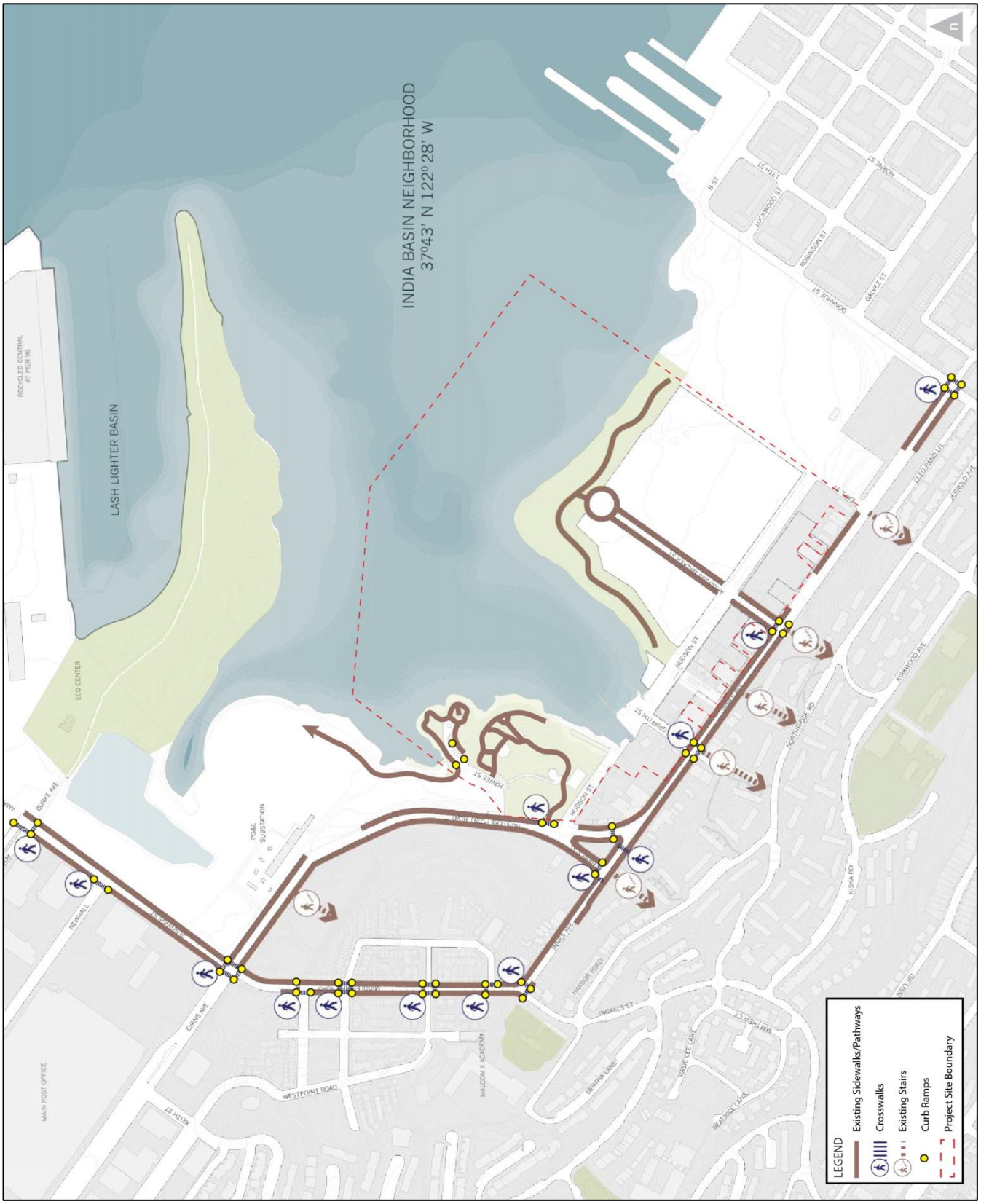
Pedestrian volumes adjacent to the project site were observed to be generally low along Innes Avenue toward Earl Street and Arelious Walker Drive, but were higher when crossing Innes Avenue at Griffith Street to and from the bus stop on the north side of Innes Avenue.

Pedestrian conditions are illustrated in Figure 3.5-3 and described in further detail below, beginning at the west end of the study area at the Jennings Street/Cargo Way intersection and continuing south and east to the Donahue Street/Innes Avenue intersection.

Between Cargo Way and Evans Avenue, Jennings Street has an 8-foot sidewalk on both sides of the street. Between Jennings Street and Hunters Point Boulevard, Evans Avenue has a 10-foot sidewalk on both sides of the street. Between Evans Avenue and Hudson Avenue, Hunters Point Boulevard has sidewalks on both sides of the street (5 feet on the north/east side and 4 feet on the south/west side), but there is a brief sidewalk gap along the north/east side of the road adjacent to the site of the former Pacific Gas & Electric Company (PG&E) Hunters Point Power Plant. Two existing stairways lead up to the Hunters View public housing development across from the PG&E property, but access to the sidewalk along the west side of Hunters Point Boulevard is restricted by chain-link fences. Between Evans Avenue and Hudson Avenue, the east side of Hunters Point Boulevard features a 6.5-foot sidewalk that connects to the trail entrance into India Basin Shoreline Park.

Pedestrians may access India Basin Shoreline Park from multiple locations: an off-street path into the park directly from the sidewalk on Hunters Point Boulevard just north of the intersection with Hudson Avenue; an 8-foot sidewalk on the south side of Hawes Street (i.e., the park driveway) that leads to multiple off-street paths within the park; and the Bay Trail. With no through access, Hawes Street has relatively low volumes of automobile traffic and is used only by motorists visiting the park. No marked crosswalks are provided across this segment of Hawes Street except at Hunters Point Boulevard.

Between Hawes Street and Arelious Walker Drive, Innes Avenue has sidewalks on both sides of the street (approximately 8 feet on the north side and 5 feet on the south side). Four stairways are available on the south side of Innes Avenue: at Hawes Street, at Griffith Street, midblock between Griffith Street and Arelious Walker Drive, and at Arelious Walker Drive. These stairways provide access to and from the Hunters View area and connect to the sidewalk on the south side of Innes Avenue. However, the sidewalk along the south side of Innes Avenue terminates at the stairway across from Arelious Walker Drive, and no connecting sidewalk is provided east of this location. “PED XING” pavement markings are visible on both the eastbound and westbound approaches to Griffith Street along Innes Avenue.



Source: San Francisco, 2017

Figure 3.5-3: Existing Pedestrian Network

Bus stops for both the inbound and outbound directions of Muni's 19 Polk route are provided along Innes Avenue, located on the near side of the intersection with Arelious Walker Drive. These bus stops are identified solely by yellow "COACH STOP" pavement or utility pole markings, and no curb space is reserved for buses pulling into and out of these stops. Pedestrian access to the India Basin Open Space property is provided by sidewalks along both sides of Arelious Walker Drive, measuring approximately 6 feet in width.

Between Arelious Walker Drive and Earl Street, Innes Avenue has a 10-foot sidewalk on the north side of the street (with a brief gap near Arelious Walker Drive). No sidewalk is provided on the south side of the street, but an existing stairway starting on the south side of Innes Avenue at Earl Street leads uphill into the Hunters View area. No marked crosswalks are present at the intersection of Innes Avenue and Earl Street.

Between Earl Street and Donahue Street, Innes Avenue has a 9-foot sidewalk on both sides of the street, but there are brief sidewalk gaps on both sides of the street immediately east of Earl Street. At the Innes Avenue/Donohue Street intersection, marked crosswalks are available at all four crossings.

There are stop signs and painted stop bars at numerous stop-controlled intersections in the project vicinity, but marked crosswalks are generally infrequent. Standard parallel-line striping is provided at crossings across Hawes Street at Hunters Point Boulevard and at Innes Avenue, and across Innes Avenue and Donahue Streets at the intersection of those two streets. Continental striping is present at crossings across Innes Avenue at Griffith Street and across Hunters Point Boulevard and Innes Avenue at the intersection of those two streets.

Project Site

As described above, a sidewalk is provided along the north side of Innes Avenue within the project site boundaries, with the exception of a gap just east of Arelious Walker Drive. Sidewalks are also provided on the 700 Innes property along both sides of Arelious Walker Drive. Portions of the Bay Trail and connecting paths have been completed within the India Basin Shoreline Park and India Basin Open Space properties. No other existing pedestrian facilities are present on the project site.

Loading Conditions

Field observations found that freight and commercial loading for existing uses in the India Basin area typically occurs off-street or in available on-street parking spaces not specifically designated for loading, likely because of the industrial nature of much of the area. No marked on-street loading spaces are currently available along Innes Avenue or Hunters Point Boulevard adjacent to the project site or along any of the streets on the project site. There are no marked loading spaces along Hawes Street within India Basin Shoreline Park, although there is a turnaround at the street's terminus (with an approximate radius of 35 feet) that can accommodate loading to and from larger vehicles. Some existing commercial uses along Innes Avenue feature off-street loading areas, accessible via driveway entrances along Innes Avenue. Given the low occupancy of on-street parking along Innes Avenue, however, field observations found some freight and commercial loading taking place in available on-street parking. Figure 3.5-4 depicts existing off-street freight loading accommodations along the Innes Avenue corridor.

Source: San Francisco, 2017

Figure 3.5-4: Existing Off-Street Freight Loading Accommodations

Emergency Vehicle Access to the Project Site

Emergency vehicles in the India Basin area typically use major streets when heading to and from an emergency and/or emergency facility. Arterial roadways allow emergency vehicles to travel at higher speeds and permit other traffic to maneuver out of the path of emergency vehicles. In general, nonemergency vehicles must yield to emergency vehicles (California Vehicle Code Section 21806).

The following San Francisco Fire Department (SFFD) fire stations are closest to the project site, in order of approximate distance from the site:

- Station 17 on Shafter Avenue at Ingalls Street (1.1 miles),
- Station 25 on Third Street at Cargo Way (1.3 miles),
- Station 9 on Jerrold Avenue at Upton Street (2.2 miles), and
- Station 42 on San Bruno Avenue at Silliman Street (2.5 miles).

Emergency vehicles traveling to and from the project site and these fire stations (as well as other emergency facilities such as police stations and medical centers) would generally use Third Street, Evans Avenue, Hunters Point Boulevard, Innes Avenue, and Ingalls Street.

Automobile Parking Conditions

Based on a March 2015 survey of supply and occupancy at existing public parking facilities, no off-street public parking facilities are available in the parking study area, which is bounded by Hunters Point Boulevard and the shoreline to the north, Innes Avenue to the south, Donahue Street to the east, and Middle Point Road to the west. The study area generally covers the portions of the street network within a 5- to 10-minute walk (approximately 1,300–2,600 feet) from the project site.

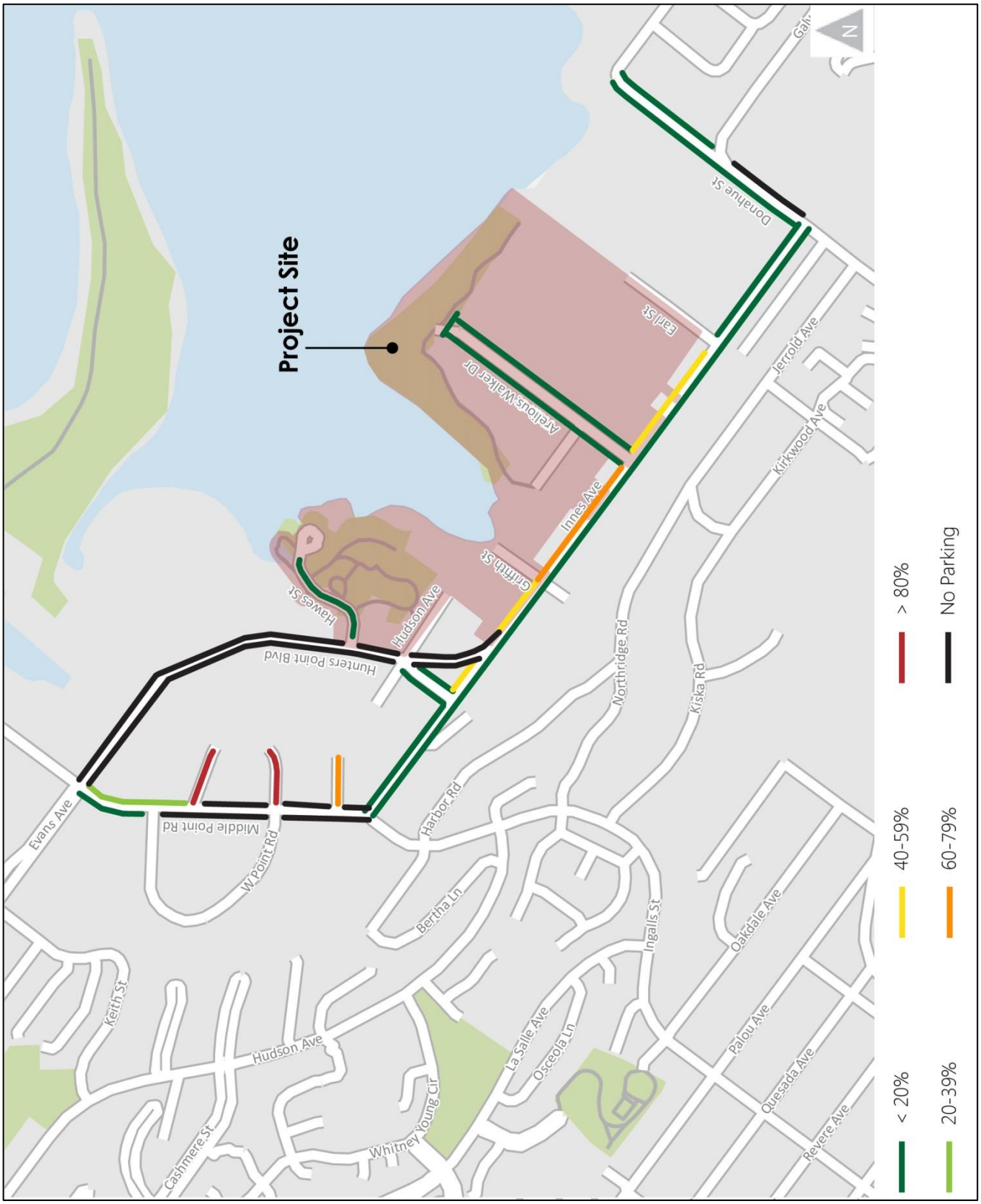
Parking conditions in the parking study area were surveyed for the weekday midday period (1:30 p.m. to 3:30 p.m.) and the weekday evening period (6:30 p.m. to 8:00 p.m.). The parking study area includes a total of 533 public on-street parking spaces. Figures 3.5-5a and 3.5-5b illustrate the existing occupancy of public parking in the parking study area for the weekday midday and evening periods, respectively.

Based on field observations, on-street parking in the parking study area is not used consistently throughout the study area. Parking occupancy during the midday period ranges from 0 percent to 100 percent, with most blocks between 20 percent and 40 percent occupied. Parking occupancy along Arelious Walker Drive during the midday period peaks at less than 20 percent. The highest midday occupancy was observed along Donohue Street, likely because of construction personnel working at the nearby Hunters Point Shipyard site.

Parking occupancy is generally lower during the evening period, with most blocks less than 20 percent occupied, although some areas are fully occupied. Parking occupancy along Arelious Walker Drive during the evening period peaks at less than 10 percent.

Source: San Francisco, 2017.

Figure 3.5-5a: Existing On-Street Parking Occupancy—Weekday Midday Period



Source: San Francisco, 2017.

Figure 3.5-5b: Existing On-Street Parking Occupancy—Weekday Evening Period

3.5.2 Regulatory Framework

Federal

No federal regulations related to transportation and circulation are applicable to the proposed project or variant.

State

Senate Bill (SB) 743 (Public Resources Code Section 21099), effective September 2013, directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency (CNRA) for certification and adoption proposed revisions to the State CEQA Guidelines to establish criteria for determining the significance of transportation impacts that "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." SB 743 recommended that vehicle miles traveled may be an appropriate metric to establish that criteria. VMT measures the amount and distance that a project might cause people to drive, including the number of passengers in a vehicle. SB 743 also stated that upon certification of the State CEQA Guidelines by the CNRA, "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" pursuant to CEQA.

In January 2016, OPR published for public review and comment a *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA*, recommending that transportation impacts for projects be measured using a VMT metric. At this time, OPR has yet to transmit formal revisions to the State CEQA Guidelines to the CNRA for certification and adoption.

Regional

The Association of Bay Area Governments (ABAG) administers the *San Francisco Bay Trail Plan* (Bay Trail Plan). The Bay Trail is a multipurpose recreational trail that, when complete, would encircle San Francisco and San Pablo bays with a continuous 400-mile network of bicycling and hiking trails; 338 miles of the alignment have been completed to date. ABAG's 2005 Gap Analysis Study (ABAG, 2005) 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 time frame for completion of the Bay Trail system.

Portions of the Bay Trail within the project site have already been completed, and improvements under the proposed project or variant would improve the existing facilities and help close the remaining gaps within the site, as described in detail in Section 2.3.6, "Circulation Network."

Local

The following local plans and policies of the City and County of San Francisco are relevant in evaluating the potential impacts of the project.

San Francisco Transit First Policy

In 1998, San Francisco voters amended the City Charter (Article 8A, Section 8A.115) to include the Transit First Policy, which was first articulated as a City priority policy by the Board of Supervisors in 1973. The Transit First Policy is a set of principles underscoring the City's commitment that travel by transit, by bicycle, and on foot be given priority over the private automobile. These principles are embodied in the policies and objectives of the General Plan's Transportation Element. All City boards, commissions, and departments are legally required to implement Transit First principles in conducting City affairs.

San Francisco General Plan Transportation Element

The Transportation Element of the General Plan includes 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 (San Francisco, 2010). The Transportation Element references San Francisco's Transit First Policy in its introduction, and contains objectives and policies that are directly pertinent to consideration of the project. Relevant Transportation Element objectives are related to locating development near transit investments, encouraging transit use, and timing traffic signals to emphasize transit, pedestrian, and bicycle traffic as part of a balanced multimodal transportation system. The General Plan also emphasizes alternative transportation through positioning building entrances, improving the pedestrian environment, and providing safe bicycle parking facilities.

San Francisco Bicycle Plan

The *San Francisco Bicycle Plan* (Bicycle Plan) (SFMTA, 2009), approved by the Board of Supervisors in 1999 and updated in 2009, describes a City program to provide the safe and attractive environment needed to promote bicycling as a transportation mode. The Bicycle Plan identifies the citywide bicycle route network and establishes the level of treatment (i.e., Class I, Class II or Class III facility) for each route. The Bicycle Plan also identified near-term improvements to be implemented within the 5 years following adoption of the Bicycle Plan, as well as policy goals, objectives, and actions to support these improvements. Most of the near-term improvement projects have been implemented. The Bicycle Plan also includes minor improvements and long-term improvements that would be implemented to facilitate bicycling in San Francisco.

San Francisco Better Streets Plan

The Better Streets Plan (Planning Department, 2010) 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, which it defines as the areas of the street where people walk, sit, shop, play, or interact. Generally speaking, the guidelines are for design of sidewalks as crosswalks; however, in some cases, the Better Streets Plan includes guidelines for certain areas of the roadway, such as intersections.

Vision Zero

Vision Zero is a policy adopted by both the Board of Supervisors and SFMTA in 2014 to eliminate traffic deaths in San Francisco by the year 2024. The goal of Vision Zero is also to reduce inequities in severe injuries across

neighborhoods, transportation modes, and populations. Implementation of this policy has particularly focused on pedestrians and bicyclists, who are generally the most vulnerable roadway users. Example improvements include improving crosswalk striping; programming "leading" pedestrian signal phasing, which allows pedestrians to get a head start at signalized intersections; painting red zones at intersections to improve visibility; constructing pedestrian bulbs to shorten pedestrian crossing distances; implementing road diets; converting one-way streets to two-way traffic; and installing bikeway facilities such as Class II bikeways.

Climate Action Plan

In response to overwhelming scientific evidence suggesting that human behavior is accelerating climate change, the City adopted a climate action plan addressing actions it could take to reduce San Francisco's contribution to climate change. *The Climate Action Plan for San Francisco* (SF Environment and SFPUC, 2004) describes the potential effects of climate change on San Francisco based on scientific research and presents an inventory of San Francisco's contribution to greenhouse gas (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 initiative aimed at improving and expanding the transportation system to help accommodate new growth, and creating a policy framework for private development to contribute to minimizing its impact on the transportation system, including helping to pay for the system's enhancement and expansion. The Transportation Sustainability Program is a joint effort by the Mayor's Office, the Planning Department, SFMTA, and SFCTA, and consists of the following three objectives:

- **Fund Transportation Improvements to Support Growth.** The Transportation Sustainability Fee (TSF) is assessed on new development, including residential development, to help fund improvements to transit capacity and reliability as well as bicycle and pedestrian improvements. The TSF was passed by the Board of Supervisors and signed into law by the Mayor on November 25, 2015 (Board of Supervisors File No. 150790).[5] With some exceptions, the new TSP generally supersedes the former Transit Impact Development Fee, which was levied on most new nonresidential development Citywide to offset the impacts of new development on the transit system.
- **Modernize Environmental Review.** The Planning Department prepared proposed revisions to its guidelines for transportation-related environmental review in accordance with SB 743 and Public Resources Code Section 21099. These revisions followed OPR's recommendations in its *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA*, and proposed replacing automobile delay and level of service with the VMT metric when evaluating the transportation impacts of projects. On March 3, 2016, in anticipation of future certification by the CNRA of OPR's revised State CEQA Guidelines, the San Francisco Planning Commission adopted the proposed revisions as part of Resolution 19579. The VMT metric, however, does not apply to the analysis of impacts on nonautomobile modes of travel such as riding transit, walking, and bicycling.

[5] Two additional files were created at the Board of Supervisors regarding TSF and considerations for hospitals and health services, grandfathering, and additional fees for large projects: File No. 151121 and File No. 151257.

- **Encourage Sustainable Travel.** This component of the Transportation Sustainability Program would help manage demand on the transportation network through a transportation demand management program, making sure new developments are designed to make it easier for new residents, tenants, employees, and visitors to get around by sustainable travel modes such as transit, walking, and biking. Each measure that would be included in the TDM program is intended to reduce VMT traveled from new development. Amendments to the San Francisco Planning Code (Planning Code) to implement the TDM program, along with TDM program standards, were approved by the Planning Commission on August 4, 2016 (Resolutions 19715 and 19716). The TDM Program Standards were updated on January 17, 2017 (Resolution 19838), and the Planning Code amendments were adopted by the Board of Supervisors on February 7, 2017 (Ordinance 34-17).

3.5.3 Impacts and Mitigation Measures

Significance Thresholds

The significance thresholds listed below are organized by mode to facilitate the transportation impact analysis; however, the transportation significance thresholds are consistent with the environmental checklist in Appendix G of the State CEQA Guidelines, modified to address the changes being implemented as a result of SB 743 and Planning Commission Resolution 19579. The applicable thresholds used to determine whether implementing the proposed project or variant would result in a significant impact on transportation and circulation are described below.

Vehicle Miles Traveled

The project would have a significant effect on the environment if it would:

- cause substantial additional VMT, or
- 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.

Traffic

The project would have a significant adverse impact on the environment if it would cause major traffic hazards.

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 increase in delays or operating costs such that significant adverse impacts in transit service levels could result.

With the analyses of Muni and regional transit screenlines, 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 peak hour. For screenlines that already operate above the utilization standard during the peak hour, the 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.

The project would have a significant effect on the environment if it would result in an increase in delay of at least half of a headway in the round-trip travel time for a particular transit route adjacent to the project site. This significance threshold is based on the need to maintain headways at levels that are comparable to existing (or, if applicable, future planned) operations. The half-headway threshold represents the tipping point when investment in an additional vehicle would be required to counterbalance degradation in transit travel times to maintain the same headway.

Pedestrians

The 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

The 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

The 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 on-site loading facilities or convenient on-street loading zones; or
- create potentially hazardous conditions affecting traffic, transit, bicycles, or pedestrians or significant delays affecting transit.

Emergency Access

The project would have a significant effect on the environment if it would result in inadequate emergency access.

Construction

The project would have a significant effect on the environment if, in consideration of the project site location and other relevant project characteristics, the duration and magnitude of temporary construction activities would result in substantial interference with pedestrian, bicycle, or vehicle circulation and accessibility to adjoining areas, thereby resulting in potentially hazardous conditions.

Parking

The project would have a significant effect on the environment if it would result in a substantial parking deficit that could create hazardous conditions affecting traffic, transit, bicycles, or pedestrians or significant delays affecting transit, and where particular characteristics of the project or its site demonstrably render use of other modes infeasible.

Approach to Analysis

This section describes the methodology and approach used to evaluate potential transportation and circulation impacts and estimate the project's travel demand.

Baseline Conditions

The impacts of a project are typically evaluated relative to existing conditions. In this case, however, the India Basin area is experiencing rapid and transformative changes, and the initial phases of several adjacent projects are already under construction. In particular, many units in the Hunters Point Shipyard Phase I (Shipyard) development are likely to be completed and occupied before the opening of the initial phases of the proposed project or variant. Additionally, Jennings Street, Evans Avenue, Hunters Point Boulevard, and Innes Avenue will be reconstructed as part of obligations for the Candlestick Point–Hunters Point Shipyard Phase II (CPHPS) project. The reconstruction of these streets is planned to occur during Major Phase 1, Subphase 1 of Shipyard construction (2014–2021) and would be completed in June 2020 before the opening of Phase 1 of the proposed project or variant, expected in July 2021.

Therefore, to present the most meaningful evaluation of project impacts, a Baseline Conditions scenario has been developed by modifying the Existing Conditions information described in Section 3.5.1, "Environmental Setting," and accounting for approved and expected land use development and approved and funded transportation changes in the vicinity of or serving the project site.

Land Use Changes

The Baseline Conditions scenario includes completion of the remaining 494 residential units of the 519-unit first phase of the Shipyard development. The travel demand for these remaining units was estimated based on the environmental analysis conducted for the *Candlestick Point–Hunters Point Shipyard Phase II Development Plan Project Environmental Impact Report* (CPHPS EIR) and added to Existing Conditions to develop Baseline Conditions.

Street Changes

The Baseline Conditions scenario also includes modifications to the local street network to account for changes under the *Candlestick Point & Hunters Point Shipyard Phase II Transportation Plan* (CPHPS Transportation Plan)[6] and the *Hunters Point Shipyard Phase II Infrastructure Plan*. Both of these plans are approved and funded,

[6] A revised version of the CPHPS Transportation Plan was completed and approved by the Office of Community Investment and Infrastructure in July 2014. However, the changes that were made to the CPHPS Transportation Plan focused primarily on the Candlestick Point portion of the CPHPS development, and all references to cross sections for streets within and adjacent to the Hunters Point Shipyard were removed from the plan in anticipation of additional refinements to those streets. Therefore, the 2010 version of the CPHPS Transportation Plan that was approved alongside the original CPHPS development contains the most recent set of approved cross sections for the Hunters Point Shipyard.

with the exception of the section between Earl Street and Donahue Street, which is revised from the recommendations in the *Hunters Point Shipyard Phase II Infrastructure Plan* based on a more detailed engineering feasibility study and an agreement between FivePoint (the project sponsor for the Shipyard project) and the City. There have been no changes to the *Hunters Point Shipyard Phase II Infrastructure Plan* since 2010 that would affect circulation along Hunters Point Boulevard and Innes Avenue.

The scenario also includes signalization of the Jennings Street/Evans Avenue/Middle Point Road intersection, which is included as a mitigation measure for the Shipyard project. All of these changes would be completed separately from, but concurrent with, the proposed project or variant. Table 3.5-6 summarizes the street changes assumed under Baseline Conditions.

Transit Service Changes

Baseline Conditions includes approved and funded transit service changes that would be implemented by 2018.

Muni Forward Changes

SFMTA and the San Francisco Controller's Office are in the process of implementing Muni Forward (previously known as the Transit Effectiveness Project). Muni Forward is a review of the City's public transit system to make Muni service more reliable, quicker, and more frequent through:

- new routes and route extensions,
- more service on busy routes,
- elimination or consolidation of routes or route segments with low ridership,
- corridor infrastructure projects to improve transit reliability (by implementing transit preferential treatments such as transit-only lanes or boarding islands), and
- other improvements.

SFMTA is currently implementing these changes based on funding and resource availability.

The following changes are being considered under the Muni Forward program, but have not been included in the Baseline Conditions scenario because they are not currently scheduled for implementation before 2018. These changes are instead accounted for in the analysis of Cumulative Conditions.

- *19 Polk:* The route segment south of 24th Street would be replaced by the 48 Quintara–24th Street route.
- *23 Monterey:* The 18 46th Avenue route would be combined with the 23 Monterey route, providing direct service to the Outer Sunset and Outer Richmond district areas.
- *48 Quintara–24th Street:* This route would be extended to replace a portion of the 19 Polk route along Evans Avenue and Innes Avenue.
- *54 Felton:* More direct routing would be provided to improve service to/from Balboa Park Station.
- *T Third Street:* Frequency and capacity would increase, and this train route would be extended into Chinatown via the Central Subway.

Table 3.5-6: Street Network Changes under Baseline Conditions

Street	Segment	Travel Lanes	Parking	Bikeways	Sidewalks
Existing Conditions					
Jennings Street	Cargo Way to Evans Avenue	Two lanes, one in each direction, 12 feet	*East side:* 12 feet *West side:* 12 feet	None	*East side:* 8 feet *West side:* 8 feet
Evans Avenue	Jennings Street to Hunters Point Boulevard	Four lanes, two in each direction: *Outer:* 18 feet *Inner:* 12 feet	None	None	*North side:* 10 feet *South side:* 10 feet
Hunters Point Boulevard	Evans Avenue to Hudson Avenue	Four lanes, two in each direction: *Outer:* 12 feet *Inner:* 11 feet	None	Bicycle lanes *East side:* 6 feet *West side:* 6 feet	*East side:* 7 feet *West side:* 6 feet
	Hudson Avenue to Innes Avenue			Bicycle lanes *East side:* 6 feet *West side:* 6 feet	*East side:* 6 feet *West side:* 9 feet
Innes Avenue	Hunters Point Boulevard to Griffith Street	Four lanes, two in each direction, 11 feet	*North side:* 8 feet *South side:* 8 feet	None	*North side:* 7 feet *South side:* 7 feet
	Griffith Street to Arelious Walker Drive	Four lanes, two in each direction: *Outer:* 12-foot shared bus/auto *Inner:* 10-foot general-purpose			*North side:* 8 feet *South side:* 5 feet
	Arelious Walker Drive to Earl Street				*North side:* 4 feet
	Earl Street to Donohue Street	Four lanes, two in each direction, 10 feet			*North side:* 9 feet
Baseline Conditions					
Jennings Street	Cargo Way to Evans Avenue	Two lanes, one in each direction, 12 feet	*East side:* 12 feet *West side:* 12 feet	None	*East side:* 16 feet *West side:* 8 feet
Evans Avenue	Jennings Street to Hunters Point Boulevard	Four lanes, two in each direction: *Outer:* 11-foot shared bus/auto *Inner:* 10-foot general-purpose	*South side:* 9 feet	Bicycle lanes *North side:* 6 feet *South side:* 6 feet	*North side:* 10 feet *South side:* 8 feet
Hunters Point Boulevard	Evans Avenue to Hudson Avenue	Four lanes, two in each direction: *Outer:* 11-foot shared bus/auto *Inner:* 10-foot general-purpose	*South side:* 8 feet	Bicycle lanes *North side:* 6 feet *South side:* 6 feet	*North side:* 10 feet *South side:* 8 feet
	Hudson Avenue to Innes Avenue		None	Bicycle lanes[1] *North side:* 5 feet *South side:* 5 feet	
Innes Avenue	Hunters Point Boulevard to Griffith Street	Four lanes, two in each direction, 10 feet	*North side:* 8 feet *South side:* 8 feet		*North side:* 7 feet *South side:* 7 feet
	Griffith Street to Arelious Walker Drive	Four lanes, two in each direction: *Outer eastbound:* 11-foot shared bus/auto *All other:* 10-foot general-purpose	*North side:* 8 feet *South side:* 7 feet	*North side:* 5-foot bicycle lane[1] *South side:* Sharrows[1]	*North side:* 7 feet *South side:* 5 feet
	Arelious Walker Drive to Earl Street				
	Earl Street to Donohue Street	Four lanes, two in each direction: *Outer:* 11-foot shared bus/auto *Inner:* 10-foot general-purpose	*North side:* 7 feet *South side:* 7 feet	None	

Note:

[1] The proposed project or variant would remove these bikeway facilities and replace them with a parallel Class IV bikeway along Hudson Avenue.

Source: San Francisco, 2017.

Candlestick Point–Hunters Point Shipyard Phase II Changes

Separate from the Muni Forward changes described above, the CPHPS development will implement additional changes to transit service as described in the CPHPS Transportation Plan. Because the CPHPS Transportation Plan is approved and funded, any changes anticipated for implementation by 2018 are included in the Baseline Conditions scenario. Of the transit service changes described in the CPHPS Transportation Plan, only one change is anticipated for implementation by 2018:

- *29 Sunset:* The route will be extended along Gilman Avenue to Harney Way concurrently with the retail center planned for the CPHPS development.

Muni Transit Capacity—Baseline. Table 3.5-7 summarizes Muni ridership and capacity on the downtown screenlines under Baseline Conditions, presented alongside Existing Conditions for reference.

Table 3.5-7: Muni Downtown Screenlines—Baseline Conditions

Screenline	Existing Conditions						Baseline Conditions					
	Weekday A.M. Peak Hour[1]			Weekday P.M. Peak Hour[1]			Weekday A.M. Peak Hour[1]			Weekday P.M. Peak Hour[1]		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization	Ridership Added	Ridership Total	Utilization	Ridership Added	Ridership Total	Utilization
Northeast Screenline												
Kearny/Stockton	2,211	3,050	72%	2,245	3,327	67%	0	2,211	72%	0	2,245	67%
Other lines	538	1,141	47%	683	1,078	63%	0	538	47%	0	683	63%
Total	*2,749*	*4,191*	*66%*	*2,928*	*4,405*	*66%*	*0*	*2,749*	*66%*	*0*	*2,928*	*66%*
Northwest Screenline												
Geary	1,821	2,490	73%	1,964	2,623	75%	0	1,821	73%	0	1,964	75%
California	1,610	2,010	80%	1,322	1,752	75%	0	1,610	80%	0	1,322	75%
Sutter/Clement	480	630	76%	425	630	67%	0	480	76%	0	425	67%
Fulton/Hayes	1,277	1,680	76%	1,184	1,323	**89%**	0	1,277	76%	0	1,184	**89%**
Balboa	758	1,019	74%	625	974	64%	0	758	74%	0	625	64%
Total	*5,946*	*7,829*	*76%*	*5,520*	*7,302*	*76%*	*0*	*5,946*	*76%*	*0*	*5,520*	*76%*
Southeast Screenline												
Third Street	350	793	44%	782	793	**99%**	9	359	45%	6	788	**99%**
Mission	1,643	2,509	65%	1,407	2,601	54%	0	1,643	65%	0	1,407	54%
San Bruno/Bayshore	1,689	2,134	79%	1,536	2,134	72%	1	1,690	79%	0	1,536	72%
Other lines	1,466	1,756	83%	1,084	1,675	65%	2	1,468	84%	1	1,085	65%
Total	*5,148*	*7,192*	*72%*	*4,809*	*7,203*	*67%*	*12*	*5,160*	*72%*	*7*	*4,816*	*67%*
Southwest Screenline												
Subway lines	6,330	6,205	**102%**	4,904	6,164	80%	0	6,330	**102%**	0	4,904	80%
Haight/Noriega	1,121	1,554	72%	977	1,554	63%	0	1,121	72%	0	977	63%
Other lines	465	700	66%	555	700	79%	0	465	66%	0	555	79%
Total	*7,916*	*8,459*	94%	*6,436*	*8,418*	*76%*	*0*	*7,916*	***94%***	*0*	*6,436*	*76%*

Notes:
Muni = San Francisco Municipal Railway
Bold indicates capacity utilization of 85 percent or greater.
[1] Shows the a.m. peak hour as inbound (i.e., toward downtown) only and the p.m. peak hour as outbound (i.e., away from downtown) only.
Source: San Francisco, 2017.

Table 3.5-8 summarizes Muni ridership and capacity on the localized screenlines under Baseline Conditions, presented alongside Existing Conditions for reference.

Table 3.5-8: Muni Localized Screenlines—Baseline Conditions

Direction/Route	Existing Conditions						Baseline Conditions					
	Weekday A.M. Peak Hour			Weekday P.M. Peak Hour			Weekday A.M. Peak Hour			Weekday P.M. Peak Hour		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization	Ridership Added	Ridership Total	Utilization	Ridership Added	Ridership Total	Utilization
Inbound to Project Site[1]												
19 Polk (LMLP)	24	252	10%	44	252	17%	5	29	12%	25	69	27%
19 Polk (GMLP)	160	252	63%	168	252	67%	0	160	64%	2	170	67%
44 O'Shaughnessy (GMLP)	300	473	63%	360	420	**86%**	4	304	64%	17	377	**90%**
Outbound from Project Site[2]												
19 Polk (LMLP)	84	252	33%	52	252	21%	25	109	43%	12	64	25%
19 Polk (GMLP)	188	252	75%	180	252	71%	2	190	75%	1	181	72%
44 O'Shaughnessy (GMLP)	368	473	78%	240	420	57%	17	385	81%	8	248	59%

Notes:
GMLP = global maximum load point; LMLP = local maximum load point; MLP = maximum load point; Muni = San Francisco Municipal Railway
Bold indicates capacity utilization of 85 percent or greater.
[1] Corresponds to the "outbound" direction for these routes, as defined by Muni.
[2] Corresponds to the "inbound" direction for these routes, as defined by Muni.
Source: San Francisco, 2017.

Regional Transit Capacity—Baseline. Table 3.5-9 summarizes ridership and capacity on the regional transit screenlines under Baseline Conditions, presented alongside Existing Conditions for reference.

Table 3.5-9: Regional Transit Screenlines—Baseline Conditions

Screenline	Existing Conditions						Baseline Conditions					
	Weekday A.M. Peak Hour[1]			Weekday P.M. Peak Hour[1]			Weekday A.M. Peak Hour[1]			Weekday P.M. Peak Hour[1]		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization	Ridership Added	Ridership Total	Utilization	Ridership Added	Ridership Total	Utilization
East Bay Screenline												
BART	25,399	23,256	**109%**	24,488	22,784	**107%**	1	25,400	**109%**	2	24,490	**107%**
AC Transit	1,568	2,829	55%	2,256	3,926	57%	0	1,568	55%	0	2,256	57%
Ferries	810	1,170	69%	805	1,615	50%	0	810	69%	0	805	50%
Screenline Subtotal	*27,777*	*27,255*	***102%***	*27,549*	*28,325*	*97%*	*1*	*27,778*	***102%***	*2*	*27,551*	*97%*
North Bay Screenline												
GGT Buses	1,330	2,543	52%	1,384	2,817	49%	0	1,330	52%	0	1,384	49%
Ferries	1,082	1,959	55%	968	1,959	49%	0	1,082	55%	0	968	49%
Screenline Subtotal	*2,412*	*4,502*	*54%*	*2,352*	*4,776*	*49%*	*0*	*2,412*	*54%*	*0*	*2,352*	*49%*
South Bay Screenline												
BART	14,150	19,367	73%	13,500	18,900	71%	1	14,151	73%	2	13,502	71%
Caltrain	2,171	3,100	70%	2,377	3,100	77%	2	2,173	70%	4	2,381	77%
SamTrans	255	520	49%	141	320	44%	0	255	49%	0	141	44%
Screenline Subtotal	*16,576*	*22,987*	72%	*16,018*	*22,320*	72%	*3*	*16,579*	*72%*	*6*	*16,024*	*72%*
Total	*46,765*	*54,744*	85%	*45,919*	*55,421*	*83%*	*4*	*46,769*	*85%*	*8*	*45,927*	*83%*

Notes:
AC Transit = Alameda–Contra Costa County Transit District; BART = Bay Area Rapid Transit; GGT = Golden Gate Transit; SamTrans = San Mateo County Transit District
Bold indicates capacity utilization of 100 percent or greater.
[1] Shows the a.m. peak hour as inbound (i.e., toward downtown) only and the p.m. peak hour as outbound (i.e., away from downtown) only.
Source: San Francisco, 2017.

Assessment Methodologies

Analysis of Vehicle Miles Traveled

Land use projects and plans may cause substantial additional VMT. The following discussion identifies thresholds of significance and screening criteria used to determine whether a land use project would result in significant impacts under the VMT metric.

- For residential projects, a project would generate substantial additional VMT if it exceeds the average daily regional household VMT per capita minus 15 percent.[7]
- For office projects, a project would generate substantial additional VMT if it exceeds the average daily regional VMT per employee minus 15 percent.
- For retail projects, the Planning Department uses a VMT efficiency metric approach. A retail project would generate substantial additional VMT if it would exceed the average daily regional VMT per retail employee minus 15 percent. This approach is consistent with CEQA Section 21099 and the thresholds of significance for other land uses recommended in OPR's proposed transportation impact guidelines.
- For mixed-use projects, each proposed land use is evaluated independently, in accordance with the significance criteria described above.

OPR's proposed transportation impact guidelines provide screening criteria to identify the types, characteristics, or locations of land use projects that would not exceed these VMT thresholds of significance. OPR states that if a project or land use proposed as part of the project meets either of the screening criteria listed below, then VMT impacts are presumed to be less than significant for that land use and a detailed VMT analysis is not required. These screening criteria and their application in San Francisco are described below.

- **Map-Based Screening for Residential, Office, and Retail Projects.** OPR recommends mapping areas where VMT is less than the applicable threshold for that land use. Accordingly, SFCTA has developed maps depicting existing VMT levels in San Francisco for residential, office, and retail land uses based on the SF-CHAMP 2012 base-year model run. The Planning Department uses these maps and associated data to determine whether a proposed project is located in an area of the City that is below the VMT threshold.
- **Proximity to Transit Stations.** OPR states that residential, retail, and office projects, as well as projects that are a mix of these uses, proposed within ½ 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:
  - have a floor area ratio of less than 0.75;
  - include more parking for use by residents, customers, or employees of the project than required or allowed, without a conditional use; or
  - be inconsistent with the applicable Sustainable Communities Strategy.[8]

[7] OPR's proposed transportation impact guidelines state that a project would cause substantial additional VMT if it would exceed both the existing City household VMT per capita minus 15 percent and the existing regional household VMT per capita minus 15 percent. In San Francisco, the City's average VMT per capita is lower (8.4) than the regional average (17.2). Therefore, the City average is irrelevant for the purposes of the analysis.

[8] 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.

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. Therefore, the Planning Department provides additional screening criteria and thresholds of significance to determine whether land uses similar in function to residential, office, and retail would generate a substantial increase in VMT. These screening criteria and thresholds of significance are consistent with CEQA Section 21099 and the screening criteria recommended in OPR's proposed transportation impact guidelines.

The Planning Department applies the Map-Based Screening and Proximity to Transit Station screening criteria, as summarized above, to the following land use types:

- **Research and Development (R&D) Lab Area, Childcare, and Kindergarten through 12th Grade (K-12) Schools.** Trips associated with these land uses typically function similarly to office-associated trips. Although some visitor/customer trips may be associated with some of these uses (e.g., childcare and school drop-off), those trips are often side trips within larger tours. For example, visitor/customer trips are influenced by the tour's origin (e.g., home) and/or ultimate destination (e.g., work). Therefore, these land uses are treated as office in the screening and analysis.
- **Grocery Stores and Parks.** Trips associated with grocery stores and parks typically function similar to retail-associated trips. Therefore, these types of land uses are treated as retail in the screening and analysis.

Analysis of Induced Automobile Travel

Transportation projects may substantially induce additional automobile travel. The following discussion identifies the thresholds of significance and screening criteria used to determine whether transportation projects would result in significant impacts by inducing substantial additional automobile travel.

According to OPR's proposed transportation impact guidelines, a transportation project would substantially induce automobile travel if it would generate more than 2,075,220 VMT per year. This threshold is based on the fair-share VMT allocated to transportation projects required to achieve California's long-term GHG emissions reduction goal of 40 percent below 1990 levels by 2030.

OPR's proposed transportation impact guidelines (and the Planning Department's most recent guidelines) list the types of transportation projects that would not likely lead to a substantial or measureable increase in VMT. If a project fits within the general types of projects (including combinations of types) described below, then it is presumed that VMT impacts would be less than significant and a detailed VMT analysis is not required. Accordingly, the proposed project or variant would not result in a substantial increase in VMT because 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 people walking or bicycling
  - Creation of new or addition of roadway capacity on local or collector streets, provided the project also substantially improves conditions for people walking, bicycling, and, if applicable, riding transit (e.g., by improving neighborhood connectivity or improving safety)

- Other Minor Transportation Projects
  - Rehabilitation, maintenance, replacement, and repair projects that are designed to improve the condition of existing transportation assets (e.g., highways, roadways, bridges, culverts, tunnels, transit systems, and bicycle and pedestrian facilities) and 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
  - 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

For the transit capacity analysis, the impact on local and regional transit providers of additional weekday p.m. peak-hour transit ridership generated by the proposed project or variant was assessed by comparing projected ridership to available transit capacity, using the screenline analysis used to describe existing conditions (see "Regional Transit Capacity" in Section 3.5.1, "Environmental Setting"). The analysis considers the downtown screenlines for both local (Muni) and regional transit, as well as localized screenlines for Muni routes directly serving the project site.

An analysis of transit delay was also conducted to assess the impacts of the proposed project or variant on travel time for Muni service operating in the project vicinity.

Pedestrian Analysis

As with the existing conditions discussed under "Pedestrian Network" in Section 3.5.1, "Environmental Setting," the effect of the proposed project or variant on issues of pedestrian safety and hazards (potential conflicts with traffic) and on the pedestrian network (the adjacent sidewalks) was evaluated qualitatively.

Bicycle Analysis

As with the existing conditions discussed under "Bikeway Network" in Section 3.5.1, "Environmental Setting," the effect of the proposed project or variant on bicycle conditions in the project vicinity, including bicycle routes, safety and ROW issues, and conflicts with traffic, was assessed qualitatively.

Loading Analysis

Loading was analyzed by comparing the proposed supply of freight loading spaces to Planning Code requirements and projected loading demand to determine whether the project could create hazardous conditions affecting traffic, transit, bicycles, or pedestrians or significant delays affecting transit.

Analysis of Emergency Vehicle Access

Potential changes to emergency vehicle access were assessed qualitatively.

Construction Analysis

The evaluation of construction impacts addresses the staging and duration of construction activity, estimated daily numbers of trucks and workers, and temporary street lane and/or sidewalk closures.

Parking Analysis

The parking assessment was conducted by comparing the proposed parking supply and changes to on-street parking to both the amount allowed under the Planning Code and the projected demand generated by the proposed project or variant to determine whether the project would result in a substantial parking deficit (and if so, whether the project could create hazardous conditions affecting traffic, transit, bicycles, or pedestrians or significant delays affecting transit).

Project Travel Demand

Travel demand refers to the new vehicle, transit, bicycle, and pedestrian traffic that would be generated by the project. Project-related trips by delivery/service vehicles and parking demand are also summarized here. For further details regarding the estimation methodology, see the project's transportation impact study (Appendix D).

The project's estimated travel demand, trips by delivery/service vehicles, and parking demand are based primarily on the methodology and information presented in the *SF Guidelines*, supplemented by trip rates and other information published by the Institute of Transportation Engineers (ITE) in *Trip Generation* (9th ed.) and additional empirical travel behavior data collected at comparable sites in San Francisco.

Trip Generation

Trip generation data were referenced from the *SF Guidelines* for all uses except the proposed school and open space uses. Trip generation assumptions for the school use are based on empirical data collected at comparable schools in San Francisco. For the proposed open space use, trip generation data were referenced from ITE's *Trip Generation*. Because the *SF Guidelines* do not provide trip generation data for the weekday a.m. peak hour, conversion factors were calculated based on the weekday a.m. and p.m. peak-hour rates published in *Trip Generation*. Table 3.5-10 summarizes the resulting estimates of daily, weekday a.m. peak-hour, and weekday p.m. peak-hour person-trips for the project.

As shown in the table, the proposed project would generate approximately 3,860 person-trips during the weekday a.m. peak hour: 3,783 on the 700 Innes property and 77 on the India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties. During the weekday p.m. peak hour, the proposed project would generate 4,722 person-trips: 4,636 on the 700 Innes property and 85 on the other three project site properties.

By contrast, the variant would generate approximately 5,077 person-trips during the weekday a.m. peak hour: 5,000 on the 700 Innes property and 77 on the India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties. During the weekday p.m. peak hour, the variant would generate 6,117 person-trips: 6,031 on the 700 Innes property and 85 on the other three project site properties.

Table 3.5-10: Summary of Project Person-Trips

Land Use	Person-Trips (Weekday)							
	Proposed Project				Variant			
	Size	Daily	A.M. Peak Hour	P.M. Peak Hour	Size	Daily	A.M. Peak Hour	P.M. Peak Hour
700 Innes Property								
Residential								
Studio	198 units	1,485	198	257	50 units	375	50	65
1-bedroom	236 units	1,770	235	306	125 units	938	125	162
2-bedroom +[1]	805 units	8,050	1,072	1,393	324 units	3,240	432	561
Subtotal	*1,239 units*	*11,305*	*1,505*	*1,956*	*499 units*	*4,553*	*607*	*788*
Commercial								
General office	174,930 sq. ft.	3,166	282	269	400,000 sq. ft.	7,240	644	615
R&D	–	–	–	–	275,000 sq. ft.	4,978	443	423
Clinical use	–	–	–	–	85,000 sq. ft.	3,681	559	534
Administrative	–	–	–	–	100,000 sq. ft.	3,640	618	590
Subtotal	*174,930 sq. ft.*	*3,166*	*282*	*269*	*860,000 sq. ft.*	*19,539*	*2,264*	*2,162*
Retail								
Restaurant	15,000 sq. ft.	3,000	44	405	25,000 sq. ft.	5,000	73	675
Café	20,000 sq. ft.	4,000	593	540	20,000 sq. ft.	4,000	593	540
Supermarket	25,000 sq. ft.	7,425	194	542	25,000 sq. ft.	7,425	194	542
General retail	40,400 sq. ft.	6,060	141	545	70,000 sq. ft.	10,500	245	945
Subtotal	*100,400 sq. ft.*	*20,485*	*972*	*2,032*	*140,000 sq. ft.*	*26,925*	*1,105*	*2,702*
Educational								
Students	450 persons	1,890	945	297	450 persons	1,890	945	297
Faculty/staff	95 persons	190	48	48	95 persons	190	48	48
Subtotal	*545 persons*	*2,080*	*993*	*345*	*545 persons*	*2,080*	*993*	*345*
Open space								
Open space	5.4 acres	131	31	34	5.4 acres	131	31	34
Subtotal	5.4 acres	*131*	*31*	*34*	*5.4 acres*	*131*	*31*	*34*
Subtotal	–	*37,167*	*3,783*	*4,636*	–	*53,228*	*5,000*	*6,031*
India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties								
Open space								
IB Shoreline Pk.	5.6 acres	137	32	35	5.6 acres	137	32	35
900 Innes	1.8 acres	44	10	11	1.8 acres	44	10	11
IB Open Space	6.2 acres	152	35	39	6.2 acres	152	35	39
Subtotal	*13.6 acres*	*333*	*77*	*85*	*13.6 acres*	*333*	*77*	*85*
Total	**–**	**37,500**	**3,860**	**4,722**	**–**	**53,561**	**5,077**	**6,117**

Notes:
IB = India Basin; Pk. = Park; R&D = research and development; RPD = San Francisco Recreation & Parks Department; sq. ft. = square feet

[1] The unit count for 2-bedroom and larger units is one fewer than listed in Chapter 2.0, "Project Description," because it does not include one existing private residence at the project site that would be relocated, and therefore, would not affect travel demand.

Source: San Francisco, 2017.

Trip Distribution

To ensure consistency with other nearby development projects, trips generated by the proposed residential, commercial, retail, and open space uses were distributed according to the trip distribution assumed in the CPHPS EIR. The assumed trip distribution in the CPHPS EIR was validated against the forecasted trip distribution from the latest future-year (2040) run of the SF-CHAMP travel demand forecasting model with the *Central SoMa Plan*, for the TAZ containing the project site (TAZ 446).

For the proposed school use, trip distribution for students is based on two comparable existing schools in San Francisco (The Mission Preparatory School at 74 Francis Street in the Excelsior neighborhood and La Scuola International School at 728 20th Street in the Dogpatch neighborhood). Trip distribution for faculty/school staff is based on a composite trip distribution of the proposed residential, commercial, and retail uses.

Mode Split

Mode split assumptions were developed for two distinct scenarios:

- **Baseline plus Project Conditions.** This scenario includes approved and funded changes to transit service expected to be implemented by 2018. As described earlier, these changes involve service improvements in the CPHPS Transportation Plan that would be implemented by 2018 (namely, an extension of the 29 Sunset along Gilman Avenue to Harney Way).
- **Cumulative plus Project Conditions.** This scenario includes substantial changes to transit service expected to occur through 2029 as part of the implementation of the CPHPS development. This includes service changes under Muni Forward, as well as the remainder of the service improvements in the CPHPS Transportation Plan (which compose the bulk of the changes to transit service proposed as part of the CPHPS development). These changes are described in more detail in Section 3.5.4, "Cumulative Impacts."

Residential, Commercial, and Retail Uses

For the proposed residential, commercial, and retail uses, mode split assumptions are based primarily on the transportation analysis conducted for the CPHPS EIR. As part of the CPHPS EIR, an estimated mode split was calculated for development at the India Basin site that already accounts for full implementation of the CPHPS Transportation Plan. Therefore, those mode split percentages are assumed for Cumulative plus Project Conditions. To develop the mode split assumptions for Baseline plus Project Conditions, the estimated mode split for the India Basin site from the CPHPS EIR was adjusted by comparing separate SF-CHAMP model runs for conditions with and without the increased transit service.

Large mixed-use developments such as the proposed project or variant would be expected to exhibit a certain amount of internal trip capture, whereby trips between complementary land uses are captured within the project site. Given the size and composition of the proposed project or variant, any internal trips are assumed to be walk trips, and all walk trips are assumed to be to and from destinations within the project site.

The information and guidance provided in the *SF Guidelines*, however, are not necessarily sensitive to the land use mix and other unique qualities of the proposed project or variant. Instead, these effects were estimated separately using the MXD+ methodology, which is based on empirical data from mixed-use development sites

across the United States. The estimated internal trip-capture rates were then taken to represent the walk mode share for project trips, with the CPHPS EIR mode splits adjusted accordingly for the remaining modes (automobile, transit, and bicycle).

Additional adjustments were made to account for "pass-by" trips, representing linked trips coming from a separate origin and heading to a separate ultimate destination. Pass-by trips would be attracted to the project site by uses such as retail (e.g., supermarkets, restaurants). However, such trips would not represent new trips added to the transportation network, because these trips would already occur without the development in place. In the case of India Basin, most pass-by traffic would be associated with those traveling from Hunters Point Shipyard (or surrounding areas) and other off-site origins who stop by India Basin on their way to their ultimate destination (or vice versa from off-site origins to destinations at Hunters Point Shipyard or the surrounding areas). These effects were estimated using guidance from ITE's *Trip Generation Handbook* (9th ed.), adjusted to account for the neighborhood-serving nature of the proposed retail uses (as opposed to "destination" retail such as a regional shopping center) and potential duplication with similar uses at Hunters Point Shipyard.

School and Open Space Uses

The assumed mode split for the proposed school use at the project site is based on empirical data from 2015 collected in travel behavior surveys conducted at the Schools of the Sacred Heart (Convent and Stuart Hall), which provides separate K-12 education for boys and girls across two campuses: the Broadway Campus at 2222 Broadway in Pacific Heights and the Pine/Octavia Campus at 1715 Octavia Street in Lower Pacific Heights. These schools were selected because they would be similar to the proposed school (a private school offering elementary and middle school education) and had mode-share data readily available.

The assumed mode split for the proposed open space at the project site is based on the observed travel behavior among existing visitors to Heron's Head Park, which is located 0.5 mile from the project site. Heron's Head Park consists primarily of open space and Bay shoreline access with minimal parking facilities and a few short trails, which is similar to what is proposed for open space uses at the project site.

For both the proposed school use and the proposed open space uses, the mode shifts between Baseline plus Project Conditions and Cumulative plus Project Conditions are assumed to be similar to those assumed for the proposed project's or variant's residential, commercial, and retail uses.

Estimated Person-Trips and Vehicle-Trips

Tables 3.5-11 and 3.5-12 summarize the estimated travel demands of the proposed project and the variant, respectively. These tables estimate the travel demands by mode and land use, for both Baseline plus Project Conditions and Cumulative plus Project Conditions. The Cumulative plus Project Conditions scenario generally reflects a higher mode share for transit and walking than the Baseline Conditions scenario to account for transit service improvements near the project site and the effects of nearby development (e.g., the CPHPS project), which would result in increased traffic congestion and make transit, walking, and biking more attractive.

Table 3.5-11: Project Travel Demand by Mode and Land Use (Proposed Project)

Land Use or Property		Person-Trips by Mode					Vehicle-Trips		Transit Person-Trips	
		Auto	Transit	Bicycle	Walk	Total	In	Out	In	Out
Baseline plus Project Conditions (Proposed Project)										
Weekday A.M. Peak Hour										
700 Innes Property	Residential	1,091	143	45	226	1,505	201	447	44	99
	Commercial	194	37	8	42	281	122	17	33	4
	Retail	754	43	29	146	972	253	145	27	16
	School	915	14	5	59	993	427	167	14	0
	Open space	26	0	4	1	31	14	11	0	0
	Subtotal	2,980	237	91	474	3,782	1,017	787	118	119
India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties	IB Shore. Pk.	26	0	4	1	32	14	11	0	0
	900 Innes	9	0	1	0	10	5	4	0	0
	IB Op. Space	29	0	5	3	36	15	12	0	0
	Subtotal	64	0	10	4	78	34	27	0	0
Total		**3,044**	**237**	**101**	**478**	**3,860**	**1,051**	**814**	**118**	**119**
Weekday P.M. Peak Hour										
700 Innes Property	Residential	1,330	176	39	411	1,956	506	284	160	16
	Commercial	175	33	5	57	270	12	113	1	32
	Retail	1,476	89	41	427	2,033	376	403	39	50
	School	321	4	1	19	345	62	146	0	4
	Open space	20	0	5	9	34	11	8	0	0
	Subtotal	3,322	302	91	923	4,638	967	954	200	102
India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties	IB Shore. Pk.	21	0	5	10	35	11	9	0	0
	900 Innes	7	0	2	3	11	4	3	0	0
	IB Op. Space	22	0	5	11	38	12	9	0	0
	Subtotal	50	0	12	24	84	27	21	0	0
Total		**3,372**	**302**	**103**	**947**	**4,724**	**994**	**975**	**200**	**102**
Cumulative plus Project Conditions (Proposed Project)										
Weekday A.M. Peak Hour										
700 Innes Property	Residential	970	263	45	226	1,504	178	397	82	181
	Commercial	172	60	8	42	282	108	15	53	7
	Retail	676	121	29	146	972	227	130	77	44
	School	836	93	5	59	993	390	153	93	0
	Open space	23	3	4	1	31	12	10	1	1
	Subtotal	2,677	540	91	474	3,782	915	705	306	233
India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties	IB Shore. Pk.	24	3	4	1	32	13	10	1	1
	900 Innes	8	1	1	0	10	4	3	0	0
	IB Op. Space	26	3	4	3	36	14	11	3	3
	Subtotal	58	7	9	4	78	31	24	4	4
Total		**2,735**	**546**	**101**	**478**	**3,860**	**946**	**729**	**310**	**237**
Weekday P.M. Peak Hour										
700 Innes Property	Residential	1,173	332	39	411	1,955	476	219	264	68
	Commercial	153	55	5	57	270	11	98	3	52
	Retail	1,313	252	41	427	2,033	361	333	117	135
	School	293	32	1	19	345	57	133	0	32
	Open space	17	3	5	9	34	9	7	1	1
	Subtotal	2,949	674	91	923	4,637	914	790	385	288
India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties	IB Shore. Pk.	18	3	5	10	35	10	7	1	1
	900 Innes	6	1	2	3	11	3	2	0	0
	IB Op. Space	19	3	5	11	40	11	8	3	3
	Subtotal	43	7	12	24	86	24	17	4	4
Total		**2,992**	**681**	**103**	**947**	**4,723**	**938**	**808**	**389**	**292**

Notes:
IB Op. Space = India Basin Open Space; IB Shore. Pk. = India Basin Shoreline Park; RPD = San Francisco Recreation & Parks Department
Numbers shown do not reflect retail pass-by trip reductions.
Source: San Francisco, 2017.

Table 3.5-12: Project Travel Demand by Mode and Land Use (Variant)

Land Use		Person-Trips by Mode					Vehicle-Trips		Transit Person-Trips	
		Auto	Transit	Bicycle	Walk	Total	In	Out	In	Out
Baseline plus Project Conditions (Variant)										
Weekday A.M. Peak Hour										
700 Innes Property	Residential	463	64	18	61	606	85	190	20	44
	Commercial	1,649	320	68	226	2,263	1,039	142	282	38
	Retail	901	60	33	110	1,104	307	169	39	21
	School	915	14	5	59	993	427	167	14	0
	Open space	26	0	4	1	31	14	11	0	0
	Subtotal	3,954	458	128	457	4,997	1,872	679	355	103
India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties	IB Shore. Pk.	26	0	4	1	32	14	11	0	0
	900 Innes	9	0	1	0	10	5	4	0	0
	IB Op. Space	29	0	5	3	36	15	12	0	0
	Subtotal	64	0	10	4	78	34	27	0	0
Total		**4,018**	**458**	**138**	**461**	**5,075**	**1,906**	**706**	**355**	**103**
Weekday P.M. Peak Hour										
700 Innes Property	Residential	559	79	16	134	788	213	119	64	15
	Commercial	1,464	288	43	368	2,163	100	948	7	281
	Retail	2,043	146	54	459	2,702	534	545	52	94
	School	321	4	1	19	345	62	146	0	4
	Open space	20	0	5	9	34	11	8	0	0
	Subtotal	4,407	517	119	989	6,032	920	1,766	123	394
India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties	IB Shore. Pk.	21	0	5	10	35	11	9	0	0
	900 Innes	7	0	2	3	11	4	3	0	0
	IB Op. Space	22	0	5	11	38	12	9	0	0
	Subtotal	50	0	12	24	84	27	21	0	0
Total		**4,457**	**517**	**131**	**1,013**	**6,118**	**947**	**1,787**	**123**	**394**
Cumulative plus Project Conditions (Variant)										
Weekday A.M. Peak Hour										
700 Innes Property	Residential	415	112	18	61	606	76	170	35	77
	Commercial	1,468	501	68	226	2,263	924	126	441	60
	Retail	813	148	33	110	1,104	278	152	96	52
	School	836	93	5	59	993	390	153	93	0
	Open space	23	3	4	1	31	12	10	1	1
	Subtotal	3,555	857	131	457	4,997	1,680	611	666	190
India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties	IB Shore. Pk.	24	3	4	1	32	13	10	1	1
	900 Innes	8	1	1	0	10	4	3	0	0
	IB Op. Space	26	3	4	3	36	14	11	3	3
	Subtotal	58	7	9	4	78	31	24	4	4
Total		**3,613**	**863**	**138**	**461**	**5,075**	**1,711**	**635**	**670**	**194**
Weekday P.M. Peak Hour										
700 Innes Property	Residential	496	142	16	134	788	191	103	106	36
	Commercial	1,291	460	43	368	2,162	92	831	22	438
	Retail	1,827	362	54	459	2,702	480	485	156	206
	School	293	32	1	19	345	57	133	0	32
	Open space	17	3	5	9	34	9	7	1	1
	Subtotal	3,924	999	119	989	6,031	829	1,559	285	713
India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties	IB Shore. Pk.	18	3	5	9	35	9	7	1	1
	900 Innes	5	1	1	4	11	4	3	0	0
	IB Op. Space	20	3	6	11	40	11	8	3	3
	Subtotal	43	7	12	24	86	24	18	4	4
Total		**3,967**	**1,006**	**131**	**1,013**	**6,117**	**853**	**1,577**	**289**	**717**

Notes:
IB Op. Space = India Basin Open Space; IB Shore. Pk. = India Basin Shoreline Park; RPD = San Francisco Recreation & Parks Department

Numbers shown do not reflect retail pass-by trip reductions.
Source: San Francisco, 2017.

Delivery/Service Vehicle-Trips

Delivery/service vehicle demand for the proposed project and variant was estimated using the methodology and truck trip generation rates presented in the *SF Guidelines*, which estimates demand based on the types and amount of land uses. The *SF Guidelines* do not, however, include truck trip generation rates for supermarkets. The supermarket tenant would likely plan for and provide the loading spaces required; however, delivery/service vehicle demand was derived using estimated demand rates for the existing 31,000-square-foot Whole Foods Market at 2001 Market Street.

Similarly, the *SF Guidelines* do not provide a truck trip generation rate for open spaces; however, it was assumed that the regular loading demand for the proposed open space uses would be negligible, because there are no buildings within the proposed open space uses that would require resupply or deliveries. Recreational activities may have occasional loading needs such as boat launching, but this demand would be accommodated by the two proposed on-street loading zones and the proposed turnaround loop at the end of Hawes Street.

For the proposed school use, delivery/service vehicle demand was approximated using *SF Guidelines* data for "institutional" uses.

Table 3.5-13 summarizes daily trips by delivery/service vehicles and loading space demand during the peak hour and average hour.

Table 3.5-13: Project Loading Demand

Land Use	Proposed Project			Variant		
	Daily Truck Trips	Loading Demand (spaces)		Daily Truck Trips	Loading Demand (spaces)	
		Average Hour	Peak Hour		Average Hour	Peak Hour
700 Innes Property						
Residential	37	1.7	2.2	13	0.6	0.7
Commercial	37	1.7	2.1	181	8.4	10.5
Restaurant	126	5.8	7.3	162	7.5	9.4
Supermarket	32	1.9	2.9	32	1.9	2.9
General retail	9	0.4	0.5	15	0.7	0.9
School	5	0.2	0.3	5	0.2	0.3
Open space	–	–	–	–	–	–
Subtotal	*246*	*11.8*	*15.3*	*408*	*19.3*	*24.6*
India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties						
IB Shoreline Park	–	–	–	–	–	–
900 Innes	–	–	–	–	–	–
IB Open Space	–	–	–	–	–	–
Subtotal	–	–	–	–	–	–
Total	**246**	**11.8**	**15.3**	**408**	**19.3**	**24.6**

Note:
IB = India Basin
Source: San Francisco, 2017.

Parking Demand

The project's parking demand was estimated for both the weekday midday period (approximately 11:00 a.m. to 1:00 p.m.) and the weekday evening period (approximately 7:00 p.m. to 9:00 p.m.) using the methodology and parking demand rates prescribed in the *SF Guidelines*. The *SF Guidelines* approach reflects a free, unconstrained supply of parking at the development, and conservatively estimates the parking demand from the development to inform decision-makers of the potential adverse effects from the development.

For visitor-heavy uses such as retail and commercial, demand is calculated separately for long-term and short-term users, generally reflecting employees and visitors/customers, respectively. It was assumed, however, that the school would generate negligible short-term (visitor) parking demand during the regular school day. Because open space is primarily a visitor use, long-term (employee) parking demand for the proposed open space was also assumed to be negligible. Both the proposed school and open space were assumed to generate negligible parking demand after 6:00 p.m.

Table 3.5-14 summarizes weekday midday and evening parking demands for the proposed project and the variant.

Table 3.5-14: Project Parking Demand

Land Use	Weekday Peak Parking Demand (spaces)											
	Proposed Project						Variant					
	Midday			Evening			Midday			Evening		
	Long-Term	Short-Term	Total	Long-Term	Short-Term	Total	Long-Term	Short-Term	Total	Long-Term	Short-Term	Total
700 Innes Property												
Residential	1,276	–	1,276	1,595	–	1,595	514	–	514	642	–	642
Commercial	366	15	381	–	–	–	1,801	99	1,900	–	–	–
Retail	166	678	844	166	678	844	231	927	1,158	231	927	1,158
School	29	–	29	–	–	–	29	–	29	–	–	–
Open space	–	7	7	–	–	–	–	7	7	–	–	–
Subtotal	*1,837*	*700*	*2,537*	*1,761*	*678*	*2,439*	*2,575*	*1,033*	*3,608*	*873*	*927*	*1,800*
India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties												
IB Shoreline Park	–	7	7	–	–	–	–	7	7	–	–	–
900 Innes	–	2	2	–	–	–	–	2	2	–	–	–
IB Open Space	–	7	7	–	–	–	–	7	7	–	–	–
Subtotal	–	*16*	*16*	–	–	–	–	*16*	*16*	–	–	–
Total	**1,837**	**716**	**2,553**	**1,761**	**678**	**2,439**	**2,575**	**1,049**	**3,624**	**873**	**927**	**1,800**

Note:
IB = India Basin
Source: San Francisco, 2017.

Project Features

Development Program

As described in detail in Section 2.5, "Project Components," both the proposed project and the variant would involve demolishing some of the existing buildings on the project site and constructing a mixed-use development that would include residential, commercial, institutional/ educational, R&D, parking, and open space uses:

- Under the proposed project, the development program for the site would consist of approximately 1,240,100 gross square feet (gsf) of residential space (1,240 units); 275,330 gsf of commercial space; 50,000 gsf of institutional/educational space; and 24.5 acres of publicly accessible recreation/open space. The proposed project would also include 1,800 off-street automobile parking spaces and 1,240 bicycle parking spaces.

- Under the variant, the development program for the site would consist of approximately 417,300 gsf of residential space (500 units); 1,000,000 gsf of commercial space; 50,000 gsf of institutional/educational space; and 24.5 acres of publicly accessible recreation/open space. The variant would also include 1,912 off-street automobile parking spaces and 500 bicycle parking spaces.

Circulation Network

Implementing either the proposed project or the variant would change various modes of circulation and increase VMT and transit use in association with operation of new land uses at the project site. A brief summary of proposed circulation for the project site is provided below, with additional details available in Section 2.5.6, "Circulation Network."

Street Network

Both the proposed project and variant would include construction of new internal streets and bicycle/pedestrian paths within the site, with external access points along Middle Point Road at Hawes Street (primarily for the India Basin Shoreline Park property) and along Innes Avenue at Griffith Street, Arelious Walker Drive, and Earl Street (for the India Basin Open Space, 700 Innes and 900 Innes properties).

Griffith Street, Arelious Walker Drive, a vacated and realigned Hudson Avenue ("New Hudson Avenue"), and Earl Street would function as the primary access for the eastern properties (India Basin Open Space, 700 Innes, and 900 Innes), with a secondary loop of smaller streets (Beach Lane, Fairfax Lane, and Spring Lane) connecting into New Hudson Avenue. Access for the India Basin Shoreline Park property would continue to be provided via the existing segment of Hawes Street north of Hunters Point Boulevard.

India Basin Transportation Action Plan Improvements

Both the proposed project and variant would also implement several of the improvements identified in the *India Basin Transportation Action Plan* (IBTAP), a joint planning effort led by one of the project sponsors, BUILD, in coordination with various City agencies and FivePoint (developer for the Shipyard and CPHPS projects). As described in more detail in Section 3.5.4, "Cumulative Impacts," the IBTAP presents a vision for streetscape and mobility improvements in the India Basin transportation corridor along Jennings Street, Evans Avenue, Hunters Point Boulevard, and Innes Avenue. Of the full package of improvements identified in the IBTAP, the project

sponsors would implement the following components immediately as part of both the proposed project and the variant:

- Sidewalk improvements along the frontages of the project site, constructed in a manner consistent with the Better Streets Plan. Detailed designs would be developed in coordination with SFMTA, the Planning Department, San Francisco Public Works (SFPW), FivePoint, and other key stakeholders.
- Relocation of the Innes Avenue bikeways to New Hudson Avenue.
- Installation of new traffic signals at the following locations[9]:
  - Hunters Point Boulevard/Hudson Avenue/Hawes Street
  - Hunters Point Boulevard/Innes Avenue
  - Innes Avenue/Griffith Street
  - Innes Avenue/Arelious Walker Drive
  - Innes Avenue/Earl Street

Pedestrian Circulation

Pedestrian access would be provided by a combination of sidewalks, paved paths, and trails. Sidewalks would be provided along Griffith Street, Arelious Walker Drive, New Hudson Avenue, and Earl Street, with a secondary network of paved paths providing finer-grained access and connectivity. A shared-use path for pedestrians and bicyclists would connect all four properties and fill in an existing gap in the San Francisco Bay Trail along the India Basin shoreline. Smaller hiking trails and a shoreline boardwalk would also be constructed within the India Basin Open Space property. Marked crosswalks would be provided at all internal intersections, and curb extensions would be constructed at corner and mid-block locations, where compatible with turning movements and emergency vehicle access.

External to the site, both the proposed project and variant would construct a continuous sidewalk along the east side of Hunters Point Boulevard and north side of Innes Avenue adjacent to the project site and construct new marked crosswalks at intersections along this corridor. However, approaches at some intersections along the corridor would not feature marked crosswalks in order to minimize conflicts with vehicle access into and out of the project site.

Bicycle Circulation

Under either the proposed project or the variant, a new two-way Class IV bikeway (cycle track) would be constructed through the project site, paralleling Innes Avenue to the north along Hudson Avenue and New Hudson Avenue, replacing existing and/or planned Class 2 bikeways (bicycle lanes) along Hunters Point Boulevard/Innes Avenue between Hudson Avenue and Earl Street. This Class IV facility would connect to an extensive bikeway network approved for the Hunters Point Shipyard east of the site and to the planned Blue Greenway west of the site. Design treatments would be included at the western terminus of the Class IV facility at Hunters Point Boulevard to facilitate southbound left-turn movements for bicyclists. A new Class I bikeway

[9] Signal construction includes removal of some parking and installation of new pedestrian crosswalks at these locations, as well as the addition of eastbound left-turn pockets at Innes Avenue/Griffith Street, Innes Avenue/Arelious Walker Drive, and Innes Avenue/Earl Street (these turn pockets are not included in the IBTAP).

would also extend north from the intersection of New Hudson Avenue/Earl Street, connecting to new Class III bikeways (shared lanes with sharrow markings) along Earl Street extending south to Innes Avenue.

Parking and Loading

Off-street parking would primarily be provided in three garages on the 700 Innes property, capable of accommodating a total of 1,800 spaces (570 public parking spaces and 1,230 private parking spaces) under the proposed project and 1,912 spaces (1,412 public parking spaces and 500 private parking spaces) under the variant. Both the proposed project and variant would also include about 20 on-street parking spaces within the 700 Innes property. No parking is proposed for the 900 Innes or India Basin Open Space properties, but minor modifications would be made at the India Basin Shoreline Park property to provide an additional seven parking spaces (bringing the total to 25 spaces).

Loading for the 700 Innes property would be provided through a combination of off-street spaces (each located within the proposed parking garages and measuring at least 12 feet long and 35 feet wide) and on-street loading zones. The proposed project would include 14 off-street freight loading spaces, while the variant would include 23 off-street freight loading spaces. Both the proposed project and variant would include four on-street dual-use loading zones (one on Earl Street, two on Fairfax Lane, and one on Arelious Walker Drive) accommodating both passenger and freight/commercial loading, each measuring 20–30 feet in length. An additional passenger loading zone would be provided adjacent to the school to facilitate student drop-off and pick-up. For the RPD properties, two on-street loading zones would be provided (one on the east side of Hunters Point Boulevard immediately north of Hawes Street/Hudson Avenue and another on the north side of Innes Avenue west of Griffith Street.

Transportation Demand Management

Both the proposed project and variant would also include a comprehensive TDM program designed to reduce single-occupancy vehicles and encourage use of transit and non-motorized modes of travel.

Impact Evaluation

Vehicle Miles Traveled Impacts

Impact TR-1: The proposed project or variant would not cause substantial additional VMT or substantially induce automobile travel. (*Less than Significant*)

Additional Vehicle Miles Traveled

As shown in Table 3.5-15, the average VMT per capita for the TAZ containing the project site (TAZ 446) is less than the existing regional-average VMT per capita for each of the land uses proposed. For residential use, the average daily VMT per capita in TAZ 446 is 9.0, which is 48 percent less than the corresponding regional average daily VMT of 17.2. For office use, the average daily VMT per office employee in TAZ 446 is 15.3, which is 20 percent less than the corresponding regional average daily VMT of 19.1. For retail use, the average daily VMT per retail employee in TAZ 446 is 8.1, which is 46 percent less than the corresponding regional average daily VMT of 14.9.

Table 3.5-15: Average Daily Vehicle Miles Traveled Per Capita—Existing Conditions

Land Use	Average Daily VMT per Capita		
	San Francisco Bay Area		TAZ 446
	Regional Average	Regional Average minus 15%	
Residential (per resident)	17.2	14.6	9.0
Office (per employee)	19.1	16.2	15.3
Retail (per employee)	14.9	12.6	8.1

Notes: TAZ = transportation analysis zone; VMT = vehicle miles traveled
Source: San Francisco, 2017.

As shown in Table 3.5-15, office uses at India Basin would generate more average daily VMT per capita than residential uses, which in turn would generate slightly more average daily VMT per capita than retail uses. Therefore, based on the differences in the land use programs between the proposed project and the variant, the proposed project can be expected to result in a lower average daily VMT per capita than the variant. In particular, although the variant would include slightly more retail uses (including restaurants) than the proposed project, it also would have substantially more office uses and fewer residential units, which would result in a higher average daily VMT per capita across all uses on the site.

As described under "Assessment Methodologies" above, a given land use project or plan would generate substantial additional VMT (and, therefore, result in a significant VMT impact) if it would exceed the corresponding average daily regional VMT per capita minus 15 percent. As shown in Table 3.5-15, however, the project site is located in an area where existing VMT per capita for the proposed uses is less than the corresponding existing regional average per capita minus 15 percent, regardless of whether the project or project variant are constructed. Furthermore, the proposed project and the variant would each meet the screening criterion for proximity to transit stations. Therefore, implementing the proposed project or the variant would not result in substantial additional VMT. This impact would be *less than significant.* No mitigation measures are necessary.

Inducement of Automobile Travel

The project is not a transportation project but would include features that would alter the transportation network, namely sidewalk widening, on-street loading zones, curb cuts, on-street safety strategies, intersection signalization, and left-turn pockets. These features fit within the general types of projects that would not substantially induce automobile travel (Planning Department, 2016). Therefore, this impact of the proposed project or variant would be *less than significant.* No mitigation measures are necessary.

Traffic Impacts

Impact TR-2: The proposed project or variant would not cause major traffic hazards. (*Less than Significant*)

Layouts for the internal street network have not been finalized, but would conform to the specifications in the draft India Basin Design Standards and Guidelines, as well as the Better Streets Plan. Layouts for the internal street network are subject to review and approval by the City. The draft design analyzed in this document features small corner radii, curb extensions at intersections, and speed tables at mid-block and intersection crossing locations, which all serve to calm traffic, as is appropriate for neighborhood streets. Griffith Street, New Hudson

Avenue, Arelious Walker Drive, and Earl Street assume a passenger car as the design vehicle, but can accommodate larger vehicles including SU-30 (single-unit) trucks, WB-40 (semi-trailer) trucks, and fire trucks. Garages with access off of these streets are also designed to accommodate a WB-40 truck. Spring Lane, Beach Lane, and Fairfax Lane assume a passenger car as the design vehicle and can also accommodate SU-30 trucks and fire trucks, but not WB-40 trucks. As such, WB-40 trucks will not be permitted access to these streets.

Small turn radii will slow speeds for all vehicles, but they would cause some larger vehicles (such as SU-30 and WB-40 trucks) to cross the centerline, which requires appropriate design considerations to avoid introducing traffic hazards. For this reason, Griffith Street, Arelious Walker Drive, and Earl Street have been designed with mountable buffer zones where needed, and roadway design along these streets complies with the requirement for a 7-foot-wide refuge zone for vehicles. An SU-30 truck is equivalent to a smaller move-in truck or a larger delivery vehicle, and would be expected to frequently use the internal roads for move-in/move-out and deliveries to the adjacent residential and commercial uses. WB-40 trucks are larger, and would visit these streets only occasionally. The Better Streets Plan specifically accounts for larger vehicles crossing roadway centerlines when making turning movements, and notes that these maneuvers are typical when these vehicles use neighborhood streets. Potential conflicts can be addressed with appropriate design elements that minimize truck speed and ensure truck visibility. Therefore, these occurrences would not constitute a major traffic hazard.

In general, the proposed project or variant would add vehicle-trips to surrounding roadways; however, such an increase in traffic alone would not be considered a traffic hazard. Existing vehicle, bicycle, and pedestrian activity along Innes Avenue and other streets near the project site is generally low. The proposed project would generate approximately 2,000 vehicle-trips, while the variant would generate approximately 2,600 vehicle-trips during each of the weekday a.m. and p.m. peak hours. The majority of this traffic would be expected to use the Evans Avenue–Hunters Point Boulevard–Innes Avenue corridor west of the project site when traveling to and from the rest of the city and region, increasing traffic volumes at intersections along and near these streets. Although the proposed project or variant would increase vehicle traffic in the project area, it would also include signalization at key intersections and access points into and out of the project site along Innes Avenue, eliminating potential conflicts associated with project-generated traffic without introducing new traffic hazards.

Vehicle queues at the project's garage driveways extending into the public ROW could be a source of conflict for background traffic circulation, although these conflicts would generally be similar to those found at other driveways serving existing garages elsewhere and would not rise to the level of major traffic hazards.

Overall, potential impacts of the proposed project or variant related to causing a major traffic hazard would be *less than significant*. No mitigation measures are necessary.

Although the traffic hazard impacts of the proposed project or variant would be less than significant, a detailed intersection level of service (LOS) analysis conducted for informational and site planning purposes identified an opportunity for improving traffic conditions at the Jennings Street/Evans Avenue/Middle Point Road intersection under Baseline plus Project Conditions with the variant.

Automobile delay as measured by LOS is not relevant to the analysis of potential environmental impacts of the variant based on San Francisco's approach to transportation analysis, and the variant would not cause a major traffic hazard at this intersection. Nonetheless, minor changes to the intersection could be implemented to

improve intersection operations, given the magnitude of vehicle traffic generated by the variant and the associated circulation patterns, without negative secondary effects on traffic, transit, bicycle, or pedestrian circulation.

Specifically, implementation of Improvement Measure I-TR-2V would improve traffic circulation at the intersection and help to further reduce any less-than-significant traffic safety impacts. Adoption of Improvement Measure I-TR-2V may be recommended by City decision makers as a condition of project approval under the variant.

(It should be noted that there is no Improvement Measure I-TR-2P, as this improvement measure applies only to the variant. In this document, upper-case letters following improvement and mitigation measure numbers are used to indicate situations where the measure is applicable solely to the proposed project, identified with a "P," or the variant, identified with a "V." In cases where no letter is indicated, the measure is applicable to both the proposed project and the variant.)

> **Improvement Measure I-TR-2V: Reconfigure Southbound Approach at Jennings Street/ Evans Avenue/Middle Point Road under the Variant**
>
> *To improve vehicular mobility at the Jennings Street/Evans Avenue/Middle Point Road intersection under the variant, the project sponsors should fund, and SFMTA should implement, improvements to reconfigure the southbound Jennings Street approach of the Jennings Street/Evans Avenue/Middle Point Road intersection to include a 100-foot left-turn pocket. Adding this turn pocket to the intersection would require that SFMTA restrict parking along the west side of Jennings Street, resulting in the removal of approximately five parking spaces. The project sponsors should fund their fair-share cost of the design and implementation of this improvement.*
>
> *Responsibility for funding the implementation of the improvement measure under the variant would be based on the relative contribution of each of the four project site properties to the increase in traffic volumes at the intersection. At this location, 1 percent of the added vehicle-trips would be generated by the India Basin Shoreline Park property, 0 percent would be generated by the 900 Innes property, 1 percent would be generated by the India Basin Open Space property, and 98 percent would be generated by the 700 Innes property.*
>
> *FivePoint (developer of the Shipyard project) has committed to signalizing the intersection as part of the Shipyard project, and the improvements described above should be coordinated with this effort. Should the changes required at this location as part of the Shipyard project be completed before a decision to implement the proposed left-turn pocket, the project sponsors would be responsible for funding and implementing the improvement measure.*

In addition, the proposed project and variant would each be subject to the Planning Department's standard conditions of approval regarding queue abatement. Vehicle queues at garage driveways on the project site would result in less-than-significant impacts related to traffic hazards. However, the queue abatement standard conditions of approval (described in more detail in Improvement Measure I-TR-6 under Impact TR-6) would apply to garage driveways onto internal public streets (and the exits from Beach Street and Spring Street onto New Hudson Avenue). Implementing such conditions of approval would further reduce any less-than-significant traffic safety impacts associated with vehicle queuing at these locations.

Transit Impacts

Impact TR-3: The proposed project or variant would cause a substantial increase in transit demand that would not be accommodated by adjacent transit capacity, resulting in unacceptable levels of transit service. (*Less than Significant with Mitigation*)

Transit users traveling to and from the project site would use nearby Muni lines, BART, Caltrain, or regional bus and ferry service, and would transfer to and from other Muni bus and light rail lines as needed. The specific effects on ridership and capacity for Muni (downtown and localized screenlines) and regional transit (screenlines generally located either near Downtown or at the city and county limits) are described below. Impacts are described separately for the proposed project and the variant.

Proposed Project

The proposed project would generate 237 transit trips during the weekday a.m. peak hour and 302 transit trips during the weekday p.m. peak hour. Of these, approximately 39 trips during the weekday a.m. peak hour and 58 trips during the weekday p.m. peak hour would cross the downtown screenlines for Muni. The proposed project would also add approximately 44 trips during the weekday a.m. peak hour and 40 trips during the weekday p.m. peak hour on the regional transit screenlines.

Because of the project site's distance from downtown and because the downtown screenlines capture only a subset of transit services that directly serve downtown San Francisco, most of the proposed project's transit ridership would not pass through the downtown screenlines. These trips are instead captured in the localized screenline analysis of Muni routes within walking distance of the project site.

Muni Transit Capacity—Baseline plus Project (Proposed Project). Table 3.5-16 summarizes Muni ridership and capacity on the downtown screenlines under Baseline plus Project Conditions (Proposed Project). As described earlier, Baseline Conditions includes approved and expected land use development and approved and funded transportation changes in the vicinity of, or serving, the project site. In terms of transit service changes, Baseline Conditions includes service improvements in the CPHPS Transportation Plan that would be implemented by 2018 (namely, an extension of the 29 Sunset route along Gilman Avenue to Harney Way).

As shown in Table 3.5-16, adding transit ridership generated by the proposed project would not directly cause any Muni screenline or corridor to exceed the 85 percent capacity utilization threshold. One screenline (the Southwest screenline during the weekday a.m. peak hour) and three corridors (the Subway lines during the weekday a.m. peak hour and the Fulton/Hayes and Third Street corridors during the weekday p.m. peak hour) would already operate above the 85 percent capacity utilization threshold under Baseline Conditions, and would continue to do so under Baseline plus Project Conditions (Proposed Project). However, the proposed project's contribution to total ridership on these individual screenlines and corridors would be less than 5 percent. Therefore, the impact of the proposed project on Muni capacity on the downtown screenlines would be *less than significant.* No mitigation measures are necessary.

Table 3.5-16: Muni Downtown Screenlines—Baseline plus Project Conditions (Proposed Project)

Screenline	Baseline Conditions						Baseline plus Project Conditions (Proposed Project)					
	Weekday A.M. Peak Hour[1]			Weekday P.M. Peak Hour[1]			Weekday A.M. Peak Hour[1]			Weekday P.M. Peak Hour[1]		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization	Ridership Added	Ridership Total	Utilization	Ridership Added	Ridership Total	Utilization
Northeast Screenline												
Kearny/Stockton	2,211	3,050	72%	2,245	3,327	67%	3	2,214	73%	3	2,248	68%
Other lines	538	1,141	47%	683	1,078	63%	1	539	47%	1	684	63%
Total	*2,749*	*4,191*	*66%*	*2,928*	*4,405*	*66%*	*4*	*2,753*	*66%*	*4*	*2,932*	*67%*
Northwest Screenline												
Geary	1,821	2,490	73%	1,964	2,623	75%	2	1,823	73%	2	1,966	75%
California	1,610	2,010	80%	1,322	1,752	75%	1	1,611	80%	1	1,323	76%
Sutter/Clement	480	630	76%	425	630	67%	1	481	76%	1	426	68%
Fulton/Hayes	1,277	1,680	76%	1,184	1,323	**89%**	1	1,278	76%	1	1,185	**90%**
Balboa	758	1,019	74%	625	974	64%	1	759	74%	1	626	64%
Total	*5,946*	*7,829*	*76%*	*5,520*	*7,302*	*76%*	*6*	*5,952*	*76%*	*6*	*5,526*	*76%*
Southeast Screenline												
Third Street	359	793	45%	788	793	**99%**	22	381	48%	37	825	**104%**
Mission	1,643	2,509	65%	1,407	2,601	54%	0	1,643	65%	0	1,407	54%
San Bruno/Bayshore	1,690	2,134	79%	1,536	2,134	72%	2	1,692	79%	4	1,540	72%
Other lines	1,468	1,756	84%	1,085	1,675	65%	5	1,473	84%	9	1,094	65%
Total	*5,160*	*7,192*	*72%*	*4,816*	*7,203*	*67%*	*29*	*5,189*	*72%*	*50*	*4,866*	*68%*
Southwest Screenline												
Subway lines	6,330	6,205	**102%**	4,904	6,164	80%	0	6,330	**102%**	0	4,904	80%
Haight/Noriega	1,121	1,554	72%	977	1,554	63%	1	1,122	72%	1	978	63%
Other lines	465	700	66%	555	700	79%	0	465	66%	0	555	79%
Total	*7,916*	*8,459*	***94%***	*6,436*	*8,418*	*76%*	*1*	*7,917*	***94%***	*1*	*6,437*	*76%*

Notes:

Bold indicates capacity utilization of 85 percent or greater.

[1] Shows the a.m. peak hour as inbound (i.e., toward downtown) only and the p.m. peak hour as outbound (i.e., away from downtown) only.

Source: San Francisco, 2017.

Table 3.5-17 summarizes Muni ridership and capacity on the localized screenlines under Baseline plus Project Conditions (Proposed Project). As shown, the 44 O'Shaughnessy route would exceed the 85 percent capacity utilization threshold under Baseline plus Project Conditions (Proposed Project) in the outbound direction (from the project site) during the weekday a.m. peak hour and in the inbound direction (to the project site) during the weekday p.m. peak hour.

Table 3.5-17: Muni Localized Screenlines—Baseline plus Project Conditions (Proposed Project)

Direction/Route	Baseline Conditions						Baseline plus Project Conditions (Proposed Project)					
	Weekday A.M. Peak Hour			Weekday P.M. Peak Hour			Weekday A.M. Peak Hour			Weekday P.M. Peak Hour		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization	Ridership Added	Ridership Total	Utilization	Ridership Added	Ridership Total	Utilization
Inbound to Project Site[1]												
19 Polk (LMLP)	29	252	12%	69	252	27%	63	92	37%	106	175	69%
19 Polk (GMLP)	160	252	64%	170	252	67%	4	164	65%	6	176	70%
44 O'Shaughnessy (GMLP)	304	473	64%	377	420	**90%**	52	355	75%	88	467	**111%**
Outbound from Project Site[2]												
19 Polk (LMLP)	109	252	43%	64	252	25%	67	176	70%	57	121	48%
19 Polk (GMLP)	190	252	75%	181	252	72%	5	195	77%	4	185	73%
44 O'Shaughnessy (GMLP)	385	473	81%	248	420	59%	49	433	**92%**	42	291	69%

Notes:
GMLP = global maximum load point; LMLP = local maximum load point; MLP = maximum load point; Muni = San Francisco Municipal Railway
Bold indicates capacity utilization of 85 percent or greater.
[1] Corresponds to the "outbound" direction for these routes, as defined by Muni.
[2] Corresponds to the "inbound" direction for these routes, as defined by Muni.
Source: San Francisco, 2017.

Capacity utilization in the outbound direction for local routes during the weekday a.m. peak hour would be less than 85 percent under Baseline Conditions without the proposed project, but the proposed project would add sufficient transit ridership to cause capacity utilization to exceed 85 percent during the weekday a.m. peak hour for the 44 O'Shaughnessy route outbound from the project site. During the weekday p.m. peak hour, capacity utilization would already exceed 85 percent for the 44 O'Shaughnessy route inbound to the project site under Baseline Conditions without the proposed project, but the proposed project would contribute more than 5 percent of the total ridership. Therefore, these localized Muni capacity impacts would be significant.

These impacts could occur if buildout of the proposed project proceeds in such a fashion that the project would generate sufficient new transit riders on the 44 O'Shaughnessy route to cause crowding in excess of 85 percent capacity utilization before the remainder of the transit service improvements under the CPHPS Transportation Plan (i.e., all improvements except for the extension of the 29 Sunset to Harney Way) are in operation. Once the remaining transit service improvements under the CPHPS Transportation Plan are in operation, there would be sufficient capacity to address transit travel demand. As described in Section 3.5.4, "Cumulative Impacts," these improvements would include extensions of the 24 Divisadero, 28R 19th Avenue/Geneva Rapid, and 48 Quintara–24th Street (replacing the 19 Polk) and the establishment of two new express routes to better serve Candlestick Point and Hunters Point Shipyard.

Implementation of one of the two options described below under Mitigation Measure M-TR-3P for the proposed project, however, would reduce the proposed project's localized transit capacity impacts to less than significant.

Mitigation Measure M-TR-3P: Implement Transit Capacity Improvements (Proposed Project)

The project sponsors of the 700 Innes property shall fund and/or implement transit capacity improvements as described below. Implementation of one of the two options described below would mitigate the transit capacity impact of the proposed project to less than significant.

- ***Option 1—Fund Temporary Transit Service Improvements Until the Applicable Portion of the Candlestick Point/Hunters Point Shipyard Phase II Transportation Plan is in Operation***

  The project sponsors of the 700 Innes property shall fund, and SFMTA shall provide, temporary increased frequencies on the 44 O'Shaughnessy for the period of time until similar improvements required as part of the CPHPS Transportation Plan are in operation. Specifically, the frequency of the 44 O'Shaughnessy shall be increased from every 8 minutes to every 6.5 minutes in the a.m. peak period and from every 9 minutes to every 7.5 minutes in the p.m. peak period. This increased frequency is set at the level where project-generated transit trips would no longer result in a significant transit capacity impact. The project sponsors' funding contributions are based on the cost to serve the relative proportion of transit trips generated by each of the four properties that make up the project site, and would include the cost to requisition and operate any additional buses needed to increase the frequencies as specified. Under the project-level analysis for the proposed project, all transit trips generated at the project site result from the proposed development at the 700 Innes property.

  Under Option 1, the increased frequency on the 44 O'Shaughnessy would result in increased passenger capacity along the route (because more buses would be provided per hour), thereby lowering the average passenger load per bus below the 85 percent capacity utilization threshold.

  Mitigation Measure M-TR-3P, Option 1 would be implemented prior to the issuance of the building permits for the incremental amount of development at the 700 Innes property (20 transit trips outbound from the project site on the 44 O'Shaughnessy during the weekday a.m. peak hour or 18 transit trips inbound to the project site on the 44 O'Shaughnessy during the weekday p.m. peak hour) that would cause the significant impact. This incremental amount of development would be a subset of the first phase of construction.

- ***Option 2—Implement a Temporary Shuttle Service Until the Applicable Portion of the Candlestick Point–Hunters Point Shipyard Phase II Transportation Plan is in Operation***

  If for any reason SFMTA determines that providing increased transit frequency as described under Option 1 is not feasible at the time its implementation would be required, the project sponsors for the 700 Innes property shall implement a temporary shuttle service to supplement existing nearby transit service by providing connections to local and regional rail service. The shuttle would connect the project site (at a stop on Innes Avenue at Arelious Walker Drive or a stop on New Hudson Avenue/New Griffith Street near Innes Avenue) with Muni light rail (T Third Street), Caltrain, and BART.

  A shuttle service operating at 20-minute headways in the a.m. and p.m. peak periods (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., respectively) could accommodate the estimated demand, although a maximum headway of 15 minutes is recommended in order to provide an adequate level of service for urban commuters. Shuttle operations would be extended outside of these defined periods,

if necessary, to adequately serve the peak period of project travel demand. The shuttle would be required to operate only until the CPHPS Transportation Plan's transit service improvements are in place.

If Option 2 is implemented, the shuttle shall operate within all applicable SFMTA and City regulations and programs. The project sponsors for the 700 Innes property shall be required to monitor ridership on the shuttle annually and produce a report to SFMTA describing the level of service provided and associated ridership. If ridership on the overcrowded Muni route is more than 85 percent of overall service capacity as routinely monitored by the SFMTA, additional shuttle frequency shall be provided by the project sponsors for the 700 Innes property to reduce passenger loads to below 85 percent utilization on the corresponding Muni route.

Under Option 2, the shuttle service would supplement existing transit routes by providing sufficient capacity to accommodate the demand generated by the proposed project above the 85 percent utilization threshold, with a 20 percent contingency factor.

Mitigation Measure M-TR-3P, Option 2 would be implemented prior to the issuance of the Temporary Certificates of Occupancy (TCO) for the incremental amount of development at the 700 Innes property (20 transit trips outbound from the project site on the 44 O'Shaughnessy during the weekday a.m. peak hour or 18 transit trips inbound to the project site on the 44 O'Shaughnessy during the weekday p.m. peak hour) that would cause the significant impact. This incremental amount of development would be a subset of the first phase of construction.

Riders traveling to and from downtown San Francisco and the northern neighborhoods of San Francisco could use the shuttle to connect with Muni, Caltrain, or BART. Absent the shuttle, many of these transit trips would use the 19 Polk to get to/from downtown or to make transfers with the T Third Street to/from Mission Bay or downtown. The shuttle service would provide additional transit capacity along Evans Avenue to connect with the T Third Street, and provide an alternative route to and from downtown San Francisco via the connection to BART.

Riders traveling to and from the southern and western neighborhoods of San Francisco could transfer to the 48 Quintara–24th Street at BART's 24th Street/Mission Station or use the shuttle to connect with BART at 24th Street/Mission Station for destinations close to other BART stations to the southwest. Absent the shuttle, many of these transit trips would use the 44 O'Shaughnessy. The shuttle would provide a quicker, alternative option to the 44 O'Shaughnessy for connections with BART, as it would have fewer intermediate stops. It would therefore be an attractive option for these travelers and may attract trips from the 44 O'Shaughnessy, which would alleviate overcrowding on that route.

Implementing one of the options under Mitigation Measure M-TR-3P would reduce the impacts of the proposed project on transit capacity to *less than significant with mitigation*. With this mitigation measure, pedestrian, bicycle, parking, and emergency access impacts would be *less than significant*, because the proposed changes would only provide additional capacity for transit riders and would not physically change pedestrian or bikeway facilities, parking, or emergency access to the project site or surrounding area, nor create potentially hazardous conditions for bicyclists and pedestrians or otherwise interfere with bicycle and pedestrian accessibility to the site and adjoining areas. The shuttle service under Option 2 of the mitigation measure may be subject to the City's Commuter Shuttle Program Policy, which includes measures to minimize the effects of shuttle operations on

pedestrians and bicyclists. Furthermore, the mitigation measure would not require any construction, and no transportation-related construction impacts would occur.

Regional Transit Capacity—Baseline plus Project (Proposed Project). Table 3.5-18 summarizes ridership and capacity on the regional transit screenlines under Baseline plus Project Conditions (Proposed Project). As shown, adding transit ridership generated by the proposed project would not directly cause any regional transit screenline to exceed the 100 percent capacity utilization threshold. The East Bay screenline already operates above the 100 percent capacity utilization threshold during the weekday a.m. peak hour under Baseline Conditions. However, the proposed project would add only 10 trips to this screenline, less than the threshold of 5 percent of total ridership for screenlines exceeding the capacity utilization threshold under conditions without the project. Therefore, the impact of the proposed project on regional transit capacity would be *less than significant.* No mitigation measures are necessary.

Variant

The variant would generate 458 transit trips during the weekday a.m. peak hour and 517 transit trips during the weekday p.m. peak hour. Of these, approximately 60 trips during the weekday a.m. peak hour and 67 trips during the weekday p.m. peak hour would cross the downtown screenlines for Muni. The variant would also add approximately 140 trips during the weekday a.m. peak hour and 158 trips during the weekday p.m. peak hour on the regional transit screenlines. Similar to the proposed project, however, most of the variant's transit ridership would not pass through the downtown screenlines, and these trips are instead captured in the analysis of localized Muni screenlines.

Table 3.5-18: Regional Transit Screenlines—Baseline plus Project Conditions (Proposed Project)

Screenline	Baseline Conditions						Baseline plus Project Conditions (Proposed Project)					
	Weekday A.M. Peak Hour[1]			Weekday P.M. Peak Hour[1]			Weekday A.M. Peak Hour[1]			Weekday P.M. Peak Hour[1]		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization	Ridership Added	Ridership Total	Utilization	Ridership Added	Ridership Total	Utilization
East Bay Screenline												
BART	25,400	23,256	**109%**	24,490	22,784	**107%**	10	25,410	**109%**	9	24,499	**108%**
AC Transit	1,568	2,829	55%	2,256	3,926	57%	0	1,568	55%	0	2,256	57%
Ferries	810	1,170	69%	805	1,615	50%	0	810	69%	0	805	50%
Screenline Subtotal	*27,778*	*27,255*	***102%***	*27,551*	*28,325*	*97%*	*10*	*27,788*	***102%***	*9*	*27,560*	*97%*
North Bay Screenline												
GGT Buses	1,330	2,543	52%	1,384	2,817	49%	1	1,331	52%	1	1,385	49%
Ferries	1,082	1,959	55%	968	1,959	49%	0	1,082	55%	0	968	49%
Screenline Subtotal	*2,412*	*4,502*	*54%*	*2,352*	*4,776*	*49%*	*1*	*2,413*	*54%*	*1*	*2,353*	*49%*
South Bay Screenline												
BART	14,151	19,367	73%	13,502	18,900	71%	10	14,161	73%	9	13,511	71%
Caltrain	2,173	3,100	70%	2,381	3,100	77%	23	2,196	71%	21	2,404	78%
SamTrans	255	520	49%	141	320	44%	0	255	49%	0	141	44%
Screenline Subtotal	*16,579*	*22,987*	*72%*	*16,024*	*22,320*	*72%*	*33*	*16,612*	*72%*	*30*	*16,054*	*72%*
Total	*46,769*	*54,744*	*85%*	*45,927*	*55,421*	*83%*	*44*	*46,813*	*86%*	*40*	*45,967*	*83%*

Notes:
AC Transit = Alameda–Contra Costa County Transit District; BART = Bay Area Rapid Transit; GGT = Golden Gate Transit; SamTrans = San Mateo County Transit District

Bold indicates capacity utilization of 100 percent or greater.

[1] Shows the a.m. peak hour as inbound (i.e., toward downtown) only and the p.m. peak hour as outbound (i.e., away from downtown) only.
Source: San Francisco, 2017.

Muni Transit Capacity—Baseline plus Project (Variant). Table 3.5-19 summarizes Muni ridership and capacity on the downtown screenlines under Baseline plus Project Conditions (Variant). As shown, adding transit ridership generated by the variant would not directly cause any Muni screenline or corridor to exceed the 85 percent capacity utilization threshold. One screenline (the Southwest screenline during the weekday a.m. peak hour) and three corridors (the Subway lines during the weekday a.m. peak hour and the Fulton/Hayes and Third Street corridors during the weekday p.m. peak hour) would already operate above the 85 percent capacity utilization threshold under Baseline Conditions and would continue to do so under Baseline plus Project Conditions (Variant). However, the variant's contribution to total ridership on these individual screenlines and corridors would be less than 5 percent. Therefore, the impact of the variant on Muni capacity on the downtown screenlines would be *less than significant.* No mitigation measures are necessary.

Table 3.5-19: Muni Downtown Screenlines—Baseline plus Project Conditions (Variant)

Screenline	Baseline Conditions						Baseline plus Project Conditions (Variant)					
	Weekday A.M. Peak Hour[1]			Weekday P.M. Peak Hour[1]			Weekday A.M. Peak Hour[1]			Weekday P.M. Peak Hour[1]		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization	Ridership Added	Ridership Total	Utilization	Ridership Added	Ridership Total	Utilization
Northeast Screenline												
Kearny/Stockton	2,211	3,050	72%	2,245	3,327	67%	8	2,219	73%	8	2,253	68%
Other lines	538	1,141	47%	683	1,078	63%	3	541	47%	3	686	64%
Total	*2,749*	*4,191*	*66%*	*2,928*	*4,405*	*66%*	*11*	*2,760*	*66%*	*11*	*2,939*	*67%*
Northwest Screenline												
Geary	1,821	2,490	73%	1,964	2,623	75%	6	1,827	73%	6	1,970	75%
California	1,610	2,010	80%	1,322	1,752	75%	4	1,614	80%	5	1,327	76%
Sutter/Clement	480	630	76%	425	630	67%	4	484	77%	5	430	68%
Fulton/Hayes	1,277	1,680	76%	1,184	1,323	**89%**	3	1,280	76%	3	1,187	**90%**
Balboa	758	1,019	74%	625	974	64%	3	761	75%	3	628	64%
Total	*5,946*	*7,829*	*76%*	*5,520*	*7,302*	*76%*	*20*	*5,966*	*76%*	*22*	*5,542*	*76%*
Southeast Screenline												
Third Street	359	793	45%	788	793	**99%**	20	379	48%	23	811	**102%**
Mission	1,643	2,509	65%	1,407	2,601	54%	0	1,643	65%	0	1,407	54%
San Bruno/Bayshore	1,690	2,134	79%	1,536	2,134	72%	2	1,692	79%	2	1,538	72%
Other lines	1,468	1,756	84%	1,085	1,675	65%	5	1,473	84%	5	1,090	65%
Total	*5,160*	*7,192*	*72%*	*4,816*	*7,203*	*67%*	*27*	*5,187*	*72%*	*30*	*4,846*	*67%*
Southwest Screenline												
Subway lines	6,330	6,205	**102%**	4,904	6,164	80%	1	6,331	**102%**	1	4,905	80%
Haight/Noriega	1,121	1,554	72%	977	1,554	63%	2	1,123	72%	3	980	63%
Other lines	465	700	66%	555	700	79%	0	465	66%	0	555	79%
Total	*7,916*	*8,459*	***94%***	*6,436*	*8,418*	*76%*	*3*	*7,919*	***94%***	*4*	*6,440*	*77%*

Notes:

Bold indicates capacity utilization of 85 percent or greater.

[1] Shows the a.m. peak hour as inbound (i.e., toward downtown) only and the p.m. peak hour as outbound (i.e., away from downtown) only.

Source: San Francisco, 2017.

Table 3.5-20 summarizes Muni ridership and capacity on the localized screenlines under Baseline plus Project Conditions (Variant). As shown, the 19 Polk route (at the LMLP) would exceed the 85 percent capacity utilization threshold under Baseline plus Project Conditions (Variant) in the inbound direction (to the project site) during the weekday a.m. peak hour and in the outbound direction (from the project site) during the weekday p.m. peak hour. The 44 O'Shaughnessy route would also exceed the 85 percent capacity utilization threshold under Baseline plus Project Conditions (Proposed Project) in both directions during both the weekday a.m. and p.m. peak hours.

Table 3.5-20: Muni Localized Screenlines—Baseline plus Project Conditions (Variant)

Direction/Route	Baseline Conditions						Baseline plus Project Conditions (Variant)					
	Weekday A.M. Peak Hour			Weekday P.M. Peak Hour			Weekday A.M. Peak Hour			Weekday P.M. Peak Hour		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization	Ridership Added	Ridership Total	Utilization	Ridership Added	Ridership Total	Utilization
Inbound to Project Site[1]												
19 Polk (LMLP)	29	252	12%	69	252	27%	195	224	**89%**	68	137	54%
19 Polk (GMLP)	160	252	64%	170	252	67%	14	175	69%	5	175	69%
44 O'Shaughnessy (GMLP)	304	473	64%	377	420	**90%**	149	453	**96%**	52	431	**103%**
Outbound from Project Site[2]												
19 Polk (LMLP)	109	252	43%	64	252	25%	58	167	66%	221	285	**113%**
19 Polk (GMLP)	190	252	75%	181	252	72%	4	194	77%	16	197	78%
44 O'Shaughnessy (GMLP)	385	473	81%	248	420	59%	42	427	**90%**	162	412	**98%**

Notes:
GMLP = global maximum load point; LMLP = local maximum load point; MLP = maximum load point; Muni = San Francisco Municipal Railway
Bold indicates capacity utilization of 85 percent or greater.
[1] Corresponds to the "outbound" direction for these routes, as defined by Muni.
[2] Corresponds to the "inbound" direction for these routes, as defined by Muni.
Source: San Francisco, 2017.

For several direction, route, and peak hour combinations, capacity utilization would be less than 85 percent under Baseline Conditions without the variant, but the variant would generate sufficient transit ridership to cause capacity utilization to exceed 85 percent. These include the following:

- Inbound to Project Site:
  - 19 Polk (LMLP): weekday a.m. peak hour
  - 44 O'Shaughnessy (GMLP): weekday a.m. peak hour
- Outbound from Project Site:
  - 19 Polk (LMLP): weekday p.m. peak hour
  - 44 O'Shaughnessy (GMLP): weekday a.m. and p.m. peak hours

For the following additional direction, route, and peak hour combination, capacity utilization would already exceed 85 percent Baseline Conditions without the variant, but the variant would contribute more than 5 percent of the total ridership:

- Inbound to Project Site:
  - 44 O'Shaughnessy (GMLP): weekday p.m. peak hour

Therefore, these localized transit capacity impacts identified above would be significant.

These impacts could occur if buildout of the variant proceeds in such a fashion that the variant would generate sufficient new transit riders on the 19 Polk and 44 O'Shaughnessy routes to cause crowding in excess of 85

percent capacity utilization before the remainder of the transit service improvements under the CPHPS Transportation Plan are in operation.

Mitigation Measure M-TR-3V, however, would reduce the variant's localized transit capacity impacts.

Mitigation Measure M-TR-3V: Implement Transit Capacity Improvements (Variant)

The project sponsors of the 700 Innes property shall fund and/or implement transit capacity improvements as described below. Implementation of one of the two options described would mitigate the transit capacity impact of the variant to less than significant.

- ***Option 1—Fund Temporary Transit Service Improvements Until the Applicable Portion of the Candlestick Point–Hunters Point Shipyard Phase II Transportation Plan is in Operation***

  The project sponsors of the 700 Innes property shall fund, and SFMTA shall provide, temporary increased frequencies on the 44 O'Shaughnessy and 48 Quintara–24th Street (which will replace the 19 Polk's route along Evans Avenue, Hunters Point Boulevard, and Innes Avenue) for the period of time until similar improvements required as part of the CPHPS Transportation Plan are in operation. Specifically, the frequency of the 44 O'Shaughnessy shall be increased from every 8 minutes to every 6.5 minutes in the a.m. peak period and from every 9 minutes to every 7.5 minutes in the p.m. peak period. The frequency of the 48 Quintara–24th Street shall be increased from every 15 minutes to every 10 minutes during both the a.m. and p.m. peak periods. These increased frequencies are set at the level where project-generated transit trips would no longer result in a significant transit capacity impact. The project sponsors' funding contributions are based on the cost to serve the relative proportion of transit trips generated by each of the four properties that make up the project site, and would include the cost to requisition and operate any additional buses needed to increase the frequencies as specified. Under the project-level analysis for the variant, all transit trips generated at the project site result from the proposed development at the 700 Innes property.

  Under Option 1, the increased frequency on the 44 O'Shaughnessy and 48 Quintara–24th Street would result in increased passenger capacity along these routes (because more buses would be provided per hour), thereby lowering the average passenger load per bus below the 85 percent capacity utilization threshold.

  Mitigation Measure M-TR-3V, Option 1 would be implemented prior to the issuance of building permits for the incremental amount of development at the 700 Innes property (187 transit trips inbound to the project site on the 19 Polk during the weekday a.m. peak hour, 152 transit trips outbound from the project site on the 19 Polk during the weekday p.m. peak hour, 20 transit trips outbound from the project site on the 44 O'Shaughnessy during the weekday a.m. peak hour, or 18 transit trips inbound to the project site on the 44 O'Shaughnessy during the weekday p.m. peak hour) that would cause the significant impact. This incremental amount of development would be a subset of the first phase of construction.

- ***Option 2—Implement a Temporary Shuttle Service Until the Applicable Portion of the Candlestick Point–Hunters Point Shipyard Phase II Transportation Plan is in Operation***

  If for any reason SFMTA determines that providing increased transit frequency as described under Option 1 is not feasible at the time its implementation would be required,, the project sponsors for the

700 Innes property shall implement a temporary shuttle service to supplement existing nearby transit service by providing connections to local and regional rail service. The shuttle would connect the project site (at a stop on Innes Avenue at Arelious Walker Drive or a stop on New Hudson Avenue/New Griffith Street near Innes Avenue) with Muni light rail (T Third Street), Caltrain, and BART.

A shuttle service operating at 20-minute headways in the a.m. and p.m. peak periods (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., respectively) could accommodate the estimated demand, although a maximum headway of 15 minutes is recommended in order to provide an adequate level of service for urban commuters. Shuttle operations would be extended outside of these defined periods, if necessary, to adequately serve the peak period of project travel demand. The shuttle would be required to operate only until the CPHPS Transportation Plan's transit service improvements are in place.

If Option 2 is implemented, the shuttle shall operate within all applicable SFMTA and City regulations and programs. The project sponsors for the 700 Innes property shall be required to monitor ridership on the shuttle annually and produce a report to SFMTA describing the level of service provided and associated ridership. If ridership on the overcrowded Muni routes is more than 85 percent of overall service capacity as routinely monitored by the SFMTA, additional shuttle frequency shall be provided by the project sponsors of the 700 Innes property to reduce passenger loads to below 85 percent utilization on the corresponding Muni routes.

Under Option 2, the shuttle service would supplement existing transit routes by providing sufficient capacity to accommodate the demand generated by the variant above the 85 percent utilization threshold, with a 20 percent contingency factor.

Mitigation Measure M-TR-3V, Option 2 would be implemented prior to the issuance of the Temporary Certificates of Occupancy (TCO) for the incremental amount of development at the 700 Innes property (187 transit trips inbound to the project site on the 19 Polk during the weekday a.m. peak hour, 152 transit trips outbound from the project site on the 19 Polk during the weekday p.m. peak hour, 20 transit trips outbound from the project site on the 44 O'Shaughnessy during the weekday a.m. peak hour, or 18 transit trips inbound to the project site on the 44 O'Shaughnessy during the weekday p.m. peak hour) that would cause the significant impact. This incremental amount of development would be a subset of the first phase of construction.

Riders traveling to and from downtown San Francisco and the northern neighborhoods of San Francisco could use the shuttle to connect with Muni, Caltrain, or BART. Absent the shuttle, many of these transit trips would use the 19 Polk to get to and from downtown or to make transfers with the T Third Street to and from Mission Bay or downtown. The shuttle service would provide additional transit capacity along Evans Avenue to connect with the T Third Street and provide an alternative route to and from downtown San Francisco via the connection to BART.

Riders traveling to and from the southern and western neighborhoods of San Francisco could transfer to the 48 Quintara–24th Street at BART's 24th Street/Mission Station or use the shuttle to connect with BART at 24th Street/Mission Station for destinations close to other BART stations to the southwest. Absent the shuttle, many of these transit trips would use the 44 O'Shaughnessy. The shuttle would provide a quicker, alternative option to the 44 O'Shaughnessy for connections with BART, as it would have fewer intermediate stops. It would therefore be

an attractive option for these travelers and may attract trips from the 44 O'Shaughnessy, which would alleviate overcrowding on that route.

Implementing one of the options under Mitigation Measure M-TR-3V would reduce the impacts of the variant on transit capacity to *less than-significant with mitigation*. With this mitigation measure, pedestrian, bicycle, parking, and emergency access impacts would be *less than significant* because the proposed changes would only provide additional capacity for transit riders and would not physically change pedestrian or bikeway facilities, parking, or emergency access to the project site or surrounding area, nor create potentially hazardous conditions for bicyclists and pedestrians or otherwise interfere with bicycle and pedestrian accessibility to the site and adjoining areas. The shuttle service under Option 2 of the mitigation measure may be subject to the City's Commuter Shuttle Program Policy, which includes measures to minimize the effects of shuttle operations on pedestrians and bicyclists. Furthermore, the mitigation measure would not require any construction, and no transportation-related construction impacts would occur.

Regional Transit Capacity—Baseline plus Project (Variant). Table 3.5-21 summarizes ridership and capacity on the regional transit screenlines under Baseline plus Project Conditions (Variant). As shown, adding transit ridership generated by the variant would not directly cause any regional transit screenline to exceed the 100 percent capacity utilization threshold. The East Bay screenline already operates above the 100 percent capacity utilization threshold during the weekday a.m. peak hour under Baseline Conditions. However, the variant would add only 32 trips to this screenline, less than the threshold of 5 percent of total ridership for screenlines exceeding the capacity utilization threshold under conditions without the project. Therefore, the impact of the variant on regional transit capacity would be *less than significant.* No mitigation measures are necessary.

Table 3.5-21: Regional Transit Screenlines—Baseline plus Project Conditions (Variant)

Screenline	Baseline Conditions						Baseline plus Project Conditions (Variant)					
	Weekday A.M. Peak Hour[1]			Weekday P.M. Peak Hour[1]			Weekday A.M. Peak Hour[1]			Weekday P.M. Peak Hour[1]		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization	Ridership Added	Ridership Total	Utilization	Ridership Added	Ridership Total	Utilization
East Bay Screenline												
BART	25,400	23,256	**109%**	24,490	22,784	**107%**	32	25,432	**109%**	37	24,527	**108%**
AC Transit	1,568	2,829	55%	2,256	3,926	57%	0	1,568	55%	0	2,256	57%
Ferries	810	1,170	69%	805	1,615	50%	0	810	69%	0	805	50%
Screenline Subtotal	*27,778*	*27,255*	***102%***	*27,551*	*28,325*	*97%*	*32*	*27,810*	***102%***	*37*	*27,588*	*97%*
North Bay Screenline												
GGT Buses	1,330	2,543	52%	1,384	2,817	49%	4	1,334	52%	4	1,388	49%
Ferries	1,082	1,959	55%	968	1,959	49%	1	1083	55%	1	969	49%
Subtotal	*2,412*	*4,502*	*54%*	*2,352*	*4,776*	*49%*	*5*	*2,417*	*54%*	*5*	*2,357*	*49%*
South Bay Screenline												
BART	14,151	19,367	73%	13,502	18,900	71%	31	14,182	73%	35	13,537	72%
Caltrain	2,173	3,100	70%	2,381	3,100	77%	72	2,245	72%	81	2,462	79%
SamTrans	255	520	49%	141	320	44%	0	255	49%	0	141	44%
Screenline Subtotal	*16,579*	*22,987*	*72%*	*16,024*	*22,320*	*72%*	*103*	*16,682*	*73%*	*116*	*16,140*	*72%*
Total	*46,769*	*54,744*	*85%*	*45,927*	*55,421*	*83%*	*140*	*46,909*	*86%*	*158*	*46,085*	*83%*

Notes:

AC Transit = Alameda–Contra Costa County Transit District; BART = Bay Area Rapid Transit; GGT = Golden Gate Transit; SamTrans = San Mateo County Transit District

Bold indicates capacity utilization of 100 percent or greater.

[1] Shows the a.m. peak hour as inbound (i.e., toward downtown) only and the p.m. peak hour as outbound (i.e., away from downtown) only.

Source: San Francisco, 2017.

Impact TR-4: The proposed project or variant would not cause a substantial increase in delays or operating costs such that significant adverse impacts in transit service levels could result. (*Less than Significant*)

A quantitative analysis of transit delays is prompted by a number of distinctive factors of the proposed project and variant:

- the large size of the project and associated trips the proposed project or variant would generate (more than 2,000 vehicle-trips for the proposed project or more than 2,600 vehicle-trips for the variant in a typical peak hour),
- the constrained site circulation and access (i.e., a singular access route to the west), and
- the presence of transit service along the Innes Avenue corridor.

As described in Section 3.5.3 under "Significance Thresholds," the proposed project or variant was assumed to have a transit delay impact if it would cause an increase in delay of at least half of a headway in the round-trip travel time for a particular transit route (San Francisco, 2017). The half-headway threshold represents the tipping point at which investment in an additional vehicle would be required to counterbalance degradation in transit

travel times and maintain headways. The delay caused by the proposed project or variant is calculated by summing the congestion delay caused by project-generated vehicle traffic and the additional dwell time at bus stops to accommodate boardings and alightings for project-generated ridership.

The Evans Avenue–Hunters Point Boulevard–Innes Avenue corridor between Third Street and Donahue Street, measuring approximately 1.4 miles long, was selected as the study area for this transit-delay analysis. Although no one unique route would travel the extent of the study corridor under Baseline Conditions, different routes would overlap to serve the entire corridor as individual components of the CPHPS Transportation Plan are implemented. Therefore, transit delay impacts are presented for the entire corridor, and are not specific to individual routes.

A mitigation measure to provide transit-only lanes along Evans Avenue between Third Street and Jennings Street/Middle Point Road was included as part of the project approvals for the CPHPS development, but is not expected to be triggered until after 2022, and was therefore not assumed to be in place under Baseline Conditions. Thus, transit service in the study corridor under Baseline Conditions would remain unchanged from what currently exists. The 44 O'Shaughnessy route would remain the highest frequency route in the corridor (although it does not serve the project site directly), with frequencies of every 8 minutes and every 9 minutes during the weekday a.m. and p.m. peak periods, respectively. The 19 Polk, which provides direct service to the project site, would operate with a frequency of every 15 minutes during both periods.

Therefore, the half-headway significance threshold corresponds to an increase in round-trip travel times of 4 minutes or more during the weekday a.m. peak period and 4½ minutes or more during the weekday p.m. peak period for the 44 O'Shaughnessy, or 7½ minutes or more during both periods for the 19 Polk. Congestion delay caused by the proposed project or variant was estimated using a macroscopic intersection LOS analysis, comparing intersection delays for Baseline Conditions and Baseline plus Project Conditions to identify the increase specifically attributable to the proposed project or variant. Added dwell time attributable to the proposed project or variant was estimated based on the transit ridership forecasts and an assumed dwell time penalty of 2 seconds per added passenger. These delay components were then summed across both directions of each route to estimate the total transit delay increase associated with the proposed project or variant.

Table 3.5-22 summarizes the change in travel time for transit vehicles in the study corridor under Buildout (Year 2022) Conditions.

As shown in Table 3.5-22, both the proposed project and the variant would increase round-trip travel times for transit vehicles in the corridor during the weekday a.m. and p.m. peak hours, although neither would cause a transit delay increase in excess of the respective half-headway threshold for each route. Therefore, the impacts of the proposed project or variant on would be *less than significant.* No mitigation measures are necessary.

Table 3.5-22: Transit Delay Impacts—Baseline plus Project Conditions

Delay (seconds)	Proposed Project				Variant			
	Weekday A.M. Peak Hour		Weekday P.M. Peak Hour		Weekday A.M. Peak Hour		Weekday P.M. Peak Hour	
	19P	44O	19P	44O	19P	44O	19P	44O
Added intersection delay	22	15	31	14	45	18	9	27
Added dwell time	65	27	82	40	123	54	143	66
Total	86	42	113	54	168	72	192	93
Significance threshold	450	240	450	270	450	240	450	270

Notes:
19P = 19 Polk; 44O = 44 O'Shaughnessy
Travel delays shown represent the sum across the eastbound and westbound directions of the corridor, as the significance threshold is based on round-trip travel time.
Source: San Francisco, 2017.

Bicycle Impacts

Impact TR-5: The proposed project or variant would not create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the site or adjoining areas. (*Less than Significant*)

The proposed project or variant would provide bicycle parking in compliance with the requirements of the Planning Code; would not increase bicycle traffic to a level that would adversely affect bicycle facilities in the area; would not create a new hazard or substantial conflict for bicycling; and would not adversely affect bicycle accessibility to the project site or adjoining areas. Thus, the impacts of the proposed project or variant on bicycle facilities and circulation would be *less than significant.* No mitigation measures are necessary. Additional discussion of the impacts of the proposed project and variant related to bicycle facilities and circulation is provided in the following subsections.

Planning Code Requirements

Based on the bicycle parking requirements described in Section 155.2 of the Planning Code, the proposed project would be required to provide 1,369 Class 1 spaces and 162 Class 2 spaces, while the variant would be required to provide 771 Class 1 spaces and 185 Class 2 spaces. Table 3.5-23 summarizes specific requirements for bicycle parking by use.

As detailed in Chapter 2.0, "Project Description," both the proposed project and the variant would provide Class 1 and Class 2 spaces in compliance with the requirements specified by the Planning Code. Therefore, this impact would be *less than significant.* No mitigation measures are necessary.

Bicycle Activity and Circulation

Both the proposed project and the variant are expected to increase bicycle activity in the area. The proposed project would generate approximately 101 and 103 bicycle trips, respectively, during the weekday a.m. and weekday p.m. peak hours. The variant would generate approximately 138 and 131 bicycle trips, respectively, during the weekday a.m. and weekday p.m. peak hours.

Table 3.5-23: Bicycle Parking Requirements

Land Use	Proposed Project		Variant	
	Class 1 Spaces	Class 2 Spaces	Class 1 Spaces	Class 2 Spaces
Dwelling Units[1]	1,240	62	500	25
Office	35	6	172	20
Retail (including supermarket)[2]	9	27	13	60
Restaurant	5	47	6	60
School[3]	80	20	80	20
Open Space	–	–	–	–
Total	1,369	162	771	185

Notes:
[1] The Class 1 bicycle parking requirement for dwelling units decreases in buildings with more than 100 units. This calculation conservatively assumes that no single building in the development would have more than 100 dwelling units.
[2] The Class 2 bicycle parking requirement for retail decreases in buildings with more than 50,000 square feet. This calculation conservatively assumes that no single building in the development would have more than 50,000 square feet of retail use.
[3] The San Francisco Planning Code specifies different requirements for elementary schools and for secondary schools. The analysis assumes that 67 percent of the 20 classrooms are for elementary school (grades kindergarten through 5th grade) and the remaining 33 percent of the classrooms are for secondary school (grades 6–8).
Source: San Francisco, 2017.

As described under "Bikeway Network" in Section 3.5.1, "Environmental Setting," several bicycle facilities serve the project area, including a mixture of Class I bikeways (bicycle paths), Class II bikeways (bicycle lanes), Class III bikeways (bicycle routes), and Class IV bikeways (separated bikeways). In the immediate project vicinity, these facilities include mixed Class II/III bikeways along Evans Avenue–Hunters Point Boulevard–Innes Avenue, a Class IV bikeway along Cargo Way, and a Class I bikeway on portions of the Bay Trail.

Under the proposed project or variant, additional bikeways would be established and bicycle access would be improved from Baseline Conditions. Within the project site, either the proposed project or the variant would include a Class IV bikeway (cycle track) along New Hudson Avenue and would complete the segment of the Bay Trail/Blue Greenway that runs along the India Basin shoreline, providing new east–west connections through the area with a high level of protection for bicyclists. Spring Lane, Fairfax Lane, and Beach Lane, which form a loop to access the buildings north of New Hudson Avenue, would also be designated with Class III bikeways. Recreational paths would provide connections between these facilities and the Bay Trail at the intersections of Spring Lane/Fairfax Lane and Fairfax Lane/Beach Lane. Two additional recreational paths would provide a connection between New Hudson Avenue/Hudson Avenue and the Bay Trail on either side of Earl Street, while Earl Street would also be designated with Class III bikeways. Together, the proposed facilities would provide a robust bikeway network within the site to connect to nearby existing and planned facilities and reduce hazards to bicyclists by providing bikeways with a high level of protection and reducing bicycle/vehicle conflicts.

The eastern terminus of the project-funded Class IV bikeway along New Hudson Avenue on the project site would be located at the intersection with Earl Street. FivePoint, developer of the adjacent Shipyard project, which includes the future Northside Park across Earl Street from the project site, has tentatively agreed to fund the continuation of the bikeway through Northside Park, although no formal commitments have been made and the planned park's design is still in progress.

In terms of access to and from the project site, terrain and grade changes limit north–south connectivity for bicyclists in the project vicinity, but the project site is within convenient bicycling distance (approximately

3 miles or less) of office and retail buildings in Bayview/Hunters Point, Dogpatch, and Potrero Hill. Therefore, a substantial portion of the nonmotorized trips generated by the project could be bicycle trips.

Bicyclists heading to or from the north, south, or west would connect to one of the existing bicycle facilities in the area. Class III bikeways are located on Third Street/Phelps Street (Route 7), Third Street (Route 5), and Silver Avenue/Palou Avenue (Route 70). Class II bikeways are available on Cesar Chavez Street (Route 60), Illinois Street (Route 5), and Oakdale Avenue (Route 170). Bicyclists heading to or from areas to the east such as Hunters Point would have the option of using the Bay Trail.

At the west end of the project site, a connection would be made to the Class II bikeways (bicycle lanes) in both directions of Evans Avenue–Hunters Point Boulevard. No bikeways would be provided along Hunters Point Boulevard–Innes Avenue between Hawes Street and Earl Street, as the proposed project or variant would provide a Class IV bikeway (cycle track) through the project site, running parallel to Innes Avenue along Hudson Avenue/New Hudson Avenue. Together, these improvements would provide a continuous mixed Class IV/II connection between Jennings Street and the future Northside Park adjacent to the Shipyard project. Although this would involve removing the Class II bikeways along Hunters Point Boulevard and Innes Avenue, the proposed Class IV bikeway would be a general improvement for bicyclists traveling east–west through the project area.

Conditions in the areas surrounding the project site generally present limited hazards to bicyclists. No corridors adjacent to the site have been designated as Vision Zero High Injury Corridors, and no bicyclist injuries or fatalities were recorded in this area between 2007 and 2011. The streets serving the project site generally have low potential for conflicts, as there are few locations where vehicles cross bicyclists' path of travel (e.g., driveways or intersections).

Given these considerations, either the proposed project or the variant would provide adequate accommodations for cyclists both on the project site and in the surrounding area. The project would not create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility within the project site and the surrounding area. Impacts of the proposed project or variant on bicycle circulation would be *less than significant.* No mitigation measures are necessary.

Pedestrian Impacts

Impact TR-6: The proposed project or variant would not 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. (*Less than Significant*)

Pedestrian activity generated by the proposed project or variant would include walk trips to and from transit services and some trips to and from nearby complementary land uses. The proposed project would generate 478 and 947 walk trips, respectively, during the weekday a.m. and weekday p.m. peak hours. The variant would generate 461 and 1,013 walk trips, respectively, during the weekday a.m. and weekday p.m. peak hours.

In addition to walk trips between the project site and other uses, project-generated transit trips would begin or end as pedestrian trips to or from the corresponding transit stop. Residents and employees traveling to or from the site by transit would typically use Muni's 19 Polk route along Innes Avenue or 44 O'Shaughnessy route along Hunters Point Boulevard. Some pedestrians may also walk to or from the 54 Felton route along Northridge Road,

although this includes an elevation change of 950 feet along an existing stairway, which may be inconvenient for many pedestrians.

Pedestrian changes included in the project would provide adequate access along Innes Avenue to and from the 19 Polk and 44 O'Shaughnessy routes. The project would fill in existing gaps in the sidewalk network on the north side of the street along the project frontage and improve pedestrian crossings across Innes Avenue by restriping crosswalks and signalizing intersections so that vehicles must stop while pedestrians have ROW to cross. Proposed crosswalks and sidewalk infill under the Baseline Conditions scenario without the project would also provide adequate pedestrian access to existing stairways to reach the nearest 54 Felton bus stops on Northridge Road.

Under the proposed project or variant, the project site would be accessible on Hudson Avenue from Hunters Point Boulevard to the west, from Earl Street and Northside Park to the east, and from five pedestrian routes into the site from Innes Avenue to the south. Pedestrians would access the site from Innes Avenue at Griffith Street, Arelious Walker Drive, and Earl Street, and from pedestrian paths between Griffith Street and Arelious Walker Drive and between Arelious Walker Drive and Earl Street. The access points along Innes Avenue would be signalized as part of either the proposed project or the variant, and would include pedestrian phases for the proposed crosswalks at each of these locations. These pedestrian phases would provide a safe crossing environment for pedestrians, particularly given the higher speeds, higher automobile volumes, and wider ROW along Innes Avenue (relative to the streets internal to the project site).

As described previously, the proposed project or variant would involve constructing pedestrian facilities along each new internal street and improving the pedestrian realm along the north side of Innes Avenue and Hunters Point Boulevard in the project vicinity. The sidewalk dimensions for all streets on the project site would meet ADA and Better Streets Plan requirements. Sidewalks external to the project site along Hunters Point Boulevard and the south side of Innes Avenue would meet ADA requirements. Table 3.5-24 summarizes sidewalk dimensions and associated requirements for all internal streets and key external streets connecting to the project site.

All internal roadways would be two-lane roadways, some with on-street parking, which would likely result in lower travel speeds (25 mph or less). The proposed project or variant would also include a "shared street" treatment on Spring Lane, Fairfax Lane, and Beach Lane, with curbless streets designed to prioritize pedestrian travel. These streets would use pedestrian activity, roadway design, and other cues to implicitly slow traffic speeds (to approximately 5–15 mph) or divert vehicle traffic. For these streets, the project proposes a sidewalk throughway measuring 6.5 to 9 feet in width, in addition to a 20-foot ROW to be shared by all roadway users. The intent of shared streets is to increase driver awareness of other road users and to encourage greater care and lower travel speeds.

Table 3.5-24: Sidewalk Widths

Street	Better Streets Plan			Existing Width (ft)	Baseline plus Project Conditions Width (ft)
	Street Type	Minimum Width (ft)	Recommended Width (ft)		
External to Project Site					
Hunters Point Boulevard	Commercial Throughway	12	15	6–9	**8–10**
Innes Avenue					
Between Hunters Point Boulevard and Griffith Street	Commercial Throughway	12	15	7	**7**
Between Griffith Street and Arelious Walker Drive				0–8	**5–7**
Between Arelious Walker Drive and Earl Street	Residential Throughway				
Between Earl Street and Donohue Street				0–9	
Internal to Project Site					
New Hudson Avenue	Neighborhood Commercial	12	15	–	15
Arelious Walker Drive				6	22–23
Earl Street				0–11	15
Griffith Street				–	13–15
Spring Lane	Shared Public Way	–	–	–	6½–91
Fairfax Lane					
Beach Lane					

Notes:
ft = feet
Bold indicates that Baseline plus Project Conditions sidewalk width is less than the Better Streets Plan minimum width.

[1] Spring Lane, Fairfax Lane, and Beach Lane would be designated for shared use by motorists, bicyclists, and pedestrians. These facilities would feature a sidewalk throughway measuring 6½ to 9 feet in width, plus a 20-foot right-of-way to be shared by all users.

Source: San Francisco, 2017.

The India Basin Design Guidelines and Standards include a "Public Realm" section, focused on the interior of the project site. This document, currently being developed by BUILD (a draft version was released in January 2017), explains how various City regulations apply to specific features of the project design, such as parking requirements. All street and sidewalk designs have undergone preliminary review by SFPW's Disabled Access Coordinator, and the plans will be submitted to the City for final approval with the project's subdivision map application. Final designs are subject to approval by SFMTA, SFFD, and SFPW to ensure that the streets are designed consistent with ADA requirements, City policies such as the Better Streets Plan and Vision Zero, and the India Basin Design Standards and Guidelines, which are anticipated to be adopted at the time of project approvals.

Either the proposed project or the variant would also make improvements to (and fill existing gaps in) the Bay Trail, which runs along the shoreline of the Bay on the north side of the project site. The proposed project or variant would also include path/trail improvements through the India Basin Shoreline Park and India Basin Open Space properties to connect to adjacent properties on the project site and to other pedestrian facilities.

Intersections would be designed to meet ADA requirements and would feature curb ramps with truncated domes. In addition, intersection design would prioritize pedestrian safety in terms of intersection control and would include marked crosswalks (and, if signalized, pedestrian countdown timers). All new intersections would be

designed to City standards, and should generally be as compact as possible (given design vehicle requirements for turning) for a pedestrian-friendly design. All new crosswalks on public streets would be compliant with the Better Streets Plan, which recommends a continental striping pattern for high visibility.

External to the project site, the Baseline Conditions scenario includes reconstruction of the existing sidewalks along Hunters Point Boulevard and Innes Avenue and construction of new sidewalks along the south side of Innes Avenue where no sidewalks are currently present. The proposed sidewalk network under the Baseline Conditions scenario would be consistent with ADA requirements.

Pedestrian travel to and from nearby land uses would occur along the Blue Greenway, a dedicated bicycle/pedestrian path through the project site, or along Innes Avenue. Pedestrians would likely use the sidewalk on the north side (as opposed to the south side) of Innes Avenue, because of its adjacency and proximity to the project site, a more active land use mix, and the generally greater sidewalk width. Pedestrian travel to transit stops along Innes Avenue would similarly involve exiting the project site via internal streets, then traveling along and crossing Innes Avenue.

Some of the pedestrian facilities included in the Baseline Conditions scenario would not meet the minimum desired width specified in the Better Streets Plan. However, those facilities would still meet ADA requirements and would generally represent a net improvement from current conditions (where sidewalks are narrow or nonexistent). Compared to most other areas in San Francisco, existing pedestrian activity in the project vicinity is generally low, partially because of the relatively remote location of the site. Combining the existing pedestrian activity with additional foot traffic from development projects that would be completed and occupied under the Baseline Conditions scenario, the amount of pedestrian activity added by the proposed project or variant would not exceed the capacity of the proposed pedestrian facilities within and adjacent to the project site. Furthermore, none of the proposed pedestrian facilities would create potentially hazardous conditions for pedestrians or interfere with pedestrian accessibility to the site or adjoining areas.

The proposed project or variant would include three parking garages:

- Cove Parking Garage would have one driveway on New Hudson Avenue.
- Flats Parking Garage would have one driveway on Arelious Walker Drive and one driveway on Earl Street.
- Hillside Parking Garage would have one driveway on Spring Lane and one driveway on Beach Lane.

Each driveway would present an opportunity for vehicle–pedestrian conflicts. However, the potential for such conflicts would be similar to those for driveways that serve existing off-street parking facilities in other neighborhoods of the City and would not rise to the level of hazardous conditions for pedestrians. Internal streets and driveways would be designed to keep vehicle speeds low, and audible and visual warning devices would be installed at project driveways to notify pedestrians of oncoming vehicles exiting garages at these locations.

Primary pedestrian entry to the proposed school site would be located off of Earl Street, next to the auxiliary yard. This entry would be immediately adjacent to a proposed passenger loading zone on Earl Street. A public walkway would run along the school's western frontage, and sidewalks would be installed along the proposed school's northern and eastern frontages (along New Hudson Avenue and Earl Street, respectively). Near the school, crosswalks are planned across Earl Street at New Hudson Avenue and at Innes Avenue, across Innes Avenue at Earl Street, and across New Hudson Avenue at Earl Street. Students and faculty/staff accessing the school by

transit would likely alight along Innes Avenue at either Arelious Walker Drive or Earl Street, depending on the route. Continuous sidewalks would be provided from either location to the main school entrance.

Generally, pedestrian access under the proposed project or variant would be adequate to accommodate the expected demand. The proposed project or variant would not increase pedestrian activity to a level that would adversely affect pedestrian facilities in the area; would not create a new hazard or substantial conflict for pedestrians; and would not adversely affect pedestrian accessibility to the project site or adjoining areas. Thus, the impact of the proposed project or variant on pedestrian facilities and circulation would be *less than significant*.

Although the impact of either the proposed project or the variant would be less than significant, implementation of Improvement Measure I-TR-6 would ensure that queues at driveways serving the project's three parking garages would not adversely affect pedestrian circulation, and thus would further reduce the less-than-significant impact of the proposed project or variant on pedestrian facilities and circulation. Adoption of Improvement Measure I-TR-6 may be recommended by City decision makers as a condition of project approval under either the proposed project or the variant.

As an improvement measure to minimize vehicle queues at driveways for garages serving the project, the project could be subject to the Planning Department's conditions of approval for vehicle queue abatement, reproduced below for reference.[10] All of the project's parking garages would be located on the 700 Innes property; therefore, the project sponsor for the 700 Innes property would be solely responsible for implementing this improvement measure.

Improvement Measure I-TR-6: Implement Queue Abatement Strategies

It should be the responsibility of the owner/operator of any off-street parking facility located on the 700 Innes property with more than 20 parking spaces (excluding loading and carshare spaces) to ensure that recurring vehicle queues do not occur regularly on the public right-of-way. A vehicle queue is defined as one or more vehicles (destined to the parking facility) blocking any portion of any public street, alley, or sidewalk for a consecutive period of three minutes or longer on a daily or weekly basis.

If a recurring queue occurs, the owner/operator of the parking facility should employ abatement methods as needed to abate the queue. Appropriate abatement methods will vary depending on the characteristics and causes of the recurring queue, as well as the characteristics of the parking facility, the street(s) to which the facility connects, and the associated land uses (if applicable). Suggested abatement methods include, but are not limited to, the following: redesign of facility to improve vehicle circulation and/or on-site queue capacity; employment of parking attendants; installation of "LOT FULL" signs with active management by parking attendants; use of valet parking or other space-efficient parking techniques; use of off-site parking facilities or shared parking with nearby uses; use of parking occupancy sensors and signage directing drivers to available spaces; travel demand management strategies such as additional bicycle parking, customer shuttles, or delivery services; and/or parking demand management strategies such as parking time limits, paid parking, time-of-day parking surcharge, or validated parking.

[10] The queue abatement Conditions of Approval were established in a Memo to the Planning Commission, *Condition of Approval to address vehicle queues*, dated November 23, 2010.

If the Planning Director, or his or her designee, reasonably believes that a recurring queue is present, the Planning Department should notify the property owner in writing. The Property Owner would have no less than 45 days to take reasonable measures to abate the queues. If, after 45 days, the Planning Director, or his or her designee, reasonably believes, upon further examination, that the abatement measures have not been effective, then the Planning Director may suggest additional measures or may request that the owner/operator hire a qualified transportation consultant to evaluate the conditions at the site for no less than 7 days. The consultant would prepare a monitoring report to be submitted to the Planning Department for review. If the Planning Department determines that a recurring queue does exist, the facility owner/operator would have 90 days from the date of the written determination to implement measures to abate the queue.

Loading Impacts

Impact TR-7: Except for the passenger loading activities associated with the proposed school, the proposed project or variant, would result in a loading demand during the peak hour of loading activities that would be accommodated within proposed on-site loading facilities or within convenient on-street loading zones, and would not create potentially hazardous conditions affecting traffic, transit, bicycles, or pedestrians or significant delays affecting transit. (*Less than Significant*)

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

The open space uses under the proposed project and variant would not specifically require loading spaces. Loading demand for the open spaces is expected to be low, but the proposed project or variant would include two 30-foot on-street loading zones for the India Basin Shoreline Park and 900 Innes properties to allow loading activities to take place in designated areas. One loading zone would be located along the east side of Hunters Point Boulevard immediately north of the intersection with Hawes Street and Hudson Avenue. The other would be along the north side of Innes Avenue, west of the intersection with Griffith Street and adjacent to the Overlook Building. The project sponsors would apply to SFMTA for final authorization for these on-street loading zones.

These loading zones would be located near the main picnic and gathering areas to minimize walking distances for groups and families, and to facilitate loading and unloading of passengers and goods for events at the park. The proposed zones would be adequate to meet the expected loading demand at these properties. They would provide dedicated curb space for loading activities, discouraging motorists from double-parking or otherwise parking illegally to conduct these activities.

Overall, loading impacts for the India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties would be *less than significant.* No mitigation measures are necessary.

700 Innes Property

Commercial/Freight Loading for Proposed Uses (including the Proposed School)

The proposed off-street loading spaces would each be at least 35 feet long and 12 feet wide, and the overall building designs for the proposed parking garages would provide a 14-foot vertical clearance for all spaces. These dimensions would meet the requirements of the Planning Code.

Residential loading demand at the 700 Innes property would typically be generated when tenants move in and out of buildings and would require parking permits if they involve parking large moving trucks on-street. Given the large number of proposed dwelling units, move-in/move-out activity would be a relatively frequent occurrence, potentially taking place as often as several times a week. Parcel delivery vehicles (e.g., UPS) would also arrive at the buildings, but these deliveries are usually completed quickly and would not substantially affect conditions around the site. The four on-street dual-use loading spaces (i.e., shared by both commercial and passenger loading) proposed by the proposed project or variant could accommodate brief commercial loading activities (e.g., mail and parcel delivery) and residential move-in and move-out activities for which parking permits may be required. The preliminary locations for these four dual-use on-street loading zones have been identified on the 700 Innes property (one zone on Earl Street, one zone on Arelious Walker Drive, and two zones on Fairfax Lane), but the final locations are yet to be determined. The project sponsors would coordinate with SFMTA for final authorization for these on-street loading spaces.

Commercial loading demand would typically be generated by trucks delivering goods to businesses, such as restaurants and retail tenants. These deliveries would primarily occur in the off-street loading spaces (14 spaces under the proposed project and 23 spaces under the variant) located in the underground parking garages, which would be used for commercial loading only. Some commercial loading, typically parcel deliveries and other deliveries featuring smaller vehicles, would occur in the four on-street dual-use loading zones on the 700 Innes property.

The proposed school use would generate a delivery/service vehicle loading demand of up to one space during the average hour and peak hour. These loading activities would typically be associated with food delivery trucks, parcel delivery vehicles, and other short-term services, and would be accommodated at an off-street loading space located in a garage near the school, though it may not be on the school property.

To estimate the adequacy of proposed freight loading accommodations, use of the four on-street dual-use loading zones on the 700 Innes property was assumed to be split evenly between commercial loading and passenger loading during the peak-demand hour. In other words, half (two) of the spaces would be available for commercial loading, while the other half (two) of the spaces would be available for passenger loading. The proposed passenger loading zone for the school is not a dual-use zone and was not considered available to accommodate commercial loading activities as part of this analysis.

The proposed project would generate a total freight/service vehicle demand of approximately 12 spaces and 16 spaces during the average hour and peak hour, respectively. The proposed supply of 16 spaces under the proposed project (14 off-street loading spaces and two on-street spaces) would meet the estimated freight/service vehicle demand during the peak hour. Overall, the impact of the proposed project related to commercial/freight loading for proposed uses on the 700 Innes property would be *less than significant.* No mitigation measures are necessary.

The variant would generate a total freight/service vehicle demand of approximately 20 spaces and 25 spaces during the average hour and peak hour, respectively. The proposed supply of 25 spaces under the variant (23 off-street loading spaces and two on-street spaces) would meet the estimated freight/service vehicle demand during the peak hour. Overall, the impact of the variant related to commercial/freight loading for proposed uses on the 700 Innes property would be *less than significant.* No mitigation measures are necessary.

Although the proposed supply of freight loading spaces for the 700 Innes property would be sufficient to meet the estimated freight/service vehicle demand under both the proposed project and the variant, the following improvement measure has been recommended to further reduce any less-than-significant impacts associated with freight loading activities at the project site. Adoption of Improvement Measure I-TR-7 for the 700 Innes property may be recommended by City decision makers as a condition of project approval under the proposed project or variant.

Improvement Measure I-TR-7: Implement an Active Loading Management Plan

If the project sponsor for the 700 Innes property proposes to provide fewer loading spaces than required under the Special Use District (SUD) for the proposed project or variant, the project sponsor should, at their discretion, develop an develop an Active Loading Management Plan for review and approval by the Planning Department to address operational loading activities. The Active Loading Management Plan would facilitate efficient use of loading spaces and may incorporate the following ongoing actions to address potential ongoing loading issues:

- *Direct residential and commercial tenants to schedule all move-in and move-out activities and deliveries of large items (e.g., furniture) with the management for their respective building(s).*
- *Direct commercial and retail tenants to schedule deliveries, to the extent feasible.*
- *Reduce illegal stopping of delivery vehicles by directing building lobby attendants and retail tenants to notify any illegally stopped delivery personnel (i.e., in the red zones) that delivery vehicles should be parked in the on-street commercial loading spaces.*
- *Design the loading areas to include sufficient storage space for deliveries to be consolidated for coordinated deliveries internal to project facilities (i.e., retail and residential).*
- *Design the loading areas to allow for unassisted delivery systems (i.e., a range of delivery systems that eliminate the need for human intervention at the receiving end), particularly for use when the receiver site (e.g., retail space) is not in operation. Examples include the receiver site providing a key or electronic fob to loading vehicle operators, which enables the loading vehicle operator to deposit the goods inside the business, or in a secured area that is separated from the business but accessible from a public ROW.*

A draft Active Loading Management Plan should be included as part of the Design Guidelines and Standards document for the project site. A final Active Loading Management Plan and all subsequent revisions, if implemented, would be reviewed and approved by the Planning Department. The Final Active Loading Management Plan would be approved prior to receipt of the first Certificate of Occupancy for the first parking/loading garage.

The Draft and Final Active Loading Management Plans (if implemented) would be evaluated by a qualified transportation professional, retained by the project sponsors and approved by the Planning Department, after the combined occupancy of the commercial and residential uses reaches 50 percent and once a year going forward until the Planning Department determines that the evaluation is no longer necessary or may be done at less frequent intervals. The content of the evaluation report would be determined by Planning Department staff, in consultation with SFMTA, and generally may include an

assessment of on-site and on-street loading conditions, including actual loading demand, observations of loading operations, and an assessment of how the project meets this improvement measure.

The evaluation report would be reviewed by Planning Department staff, who would make the final determination whether there are conflicts associated with loading activities. In the event of such conflicts, the project sponsors may propose modifications to the above Final Active Loading Management Plan requirements to reduce conflicts and improve performance under the Plan (such as hour and day restrictions or restrictions on the number of loading vehicle operations permitted during certain hours). The project sponsors would submit any proposed modifications to the Plan for review and approval by the Planning Department.

Commercial/Freight Loading for Existing Uses to Remain

Demand for on-street loading accommodations by the existing commercial and residential land uses along Innes Avenue that would remain after completion of the project is generally expected to remain unchanged. For existing residential uses nearby, on-street loading demand would primarily be associated with occasional move-in/move-out events. Special permits can be obtained from SFMTA to reserve nearby on-street parking spaces for this purpose.

All existing commercial uses nearby currently use off-street loading into their garages and warehouse spaces, as there are currently no designated on-street loading spaces. Some commercial uses may use nearby on-street parking spaces for occasional goods loading; however, off-street parking would remain available on each side of Innes Avenue, for each block containing existing businesses, to accommodate these activities, even after completion of the project. These existing uses would generally continue to be able to conduct loading as they currently do.

Neither the proposed project nor the variant would affect loading accommodations for these existing uses such that existing loading activities, in combination with the land use development and transportation changes under the proposed project or variant, would result in potentially hazardous conditions for traffic, transit, bicycles, or pedestrians or substantial delays affecting transit.

The existing Hudson Avenue ROW at the southwest corner of India Basin Shoreline Park is proposed for removal, but local vehicular access would be maintained for the privately owned properties immediately south of this ROW outside of the project site boundaries, unless alternative access for these properties along Hunters Point Boulevard or Innes Avenue is feasible without creating substantial conflicts with traffic, bicycle, and pedestrian circulation. RPD is also considering maintaining public access along this ROW to facilitate adjoining development that would activate and complement India Basin Shoreline Park.

Given these considerations, impacts associated with loading for existing uses would be *less than significant.* No mitigation measures are necessary.

Impact TR-8: Under either the proposed project or variant, passenger loading demand associated with the school during the peak hour of loading activities would not be accommodated within proposed on-site passenger loading facilities or within convenient on-street loading zones, and would create potentially hazardous conditions affecting traffic, transit, bicycles, or pedestrians or significant delays affecting transit. (*Less than Significant with Mitigation*)

Based on the proposed enrollment of the school in comparison to other comparable schools, the school should have a passenger loading zone measuring approximately 185 feet in length (San Francisco, 2017). Although a preliminary location for an on-street drop-off/pick-up zone to serve the school has been identified along Earl Street, the location and size of the zone are conceptual at this stage, and will be developed further and reviewed for safety by SFMTA before being finalized. SFMTA must approve the final design of the zone before construction of the school.

The school would generate a high level of passenger loading activity during its peak (much higher than any of the other proposed uses because of the limited time periods for drop-off and pick-up activities) and the design of the proposed passenger loading zone is not yet finalized. Therefore, impacts related to passenger loading activities generated by the school would be significant. Mitigation Measure M-TR-8, however, would reduce these impacts to less than significant.

> **Mitigation Measure M-TR-8: Implement Passenger Loading Strategies for the School**
>
> *Once school enrollment reaches 22 students, the school proposed for the 700 Innes property shall provide and enforce a pick-up/drop-off plan subject to review and approval by SFMTA to minimize disruptions to traffic, bicycle, and pedestrian circulation associated with school pick-up/drop-off activities and ensure safety for all modes. This plan shall include elements such as the size and location of loading zone(s), parking monitors, staggered drop-offs, a number system for cars, one-way circulation, encouragement of carpools/ride-sharing, and a safety education program. The safety education program shall be targeted at school students, guardians, and staff, as well as residents and businesses near the school site. Informational materials targeted to guardians and nearby residents and employees shall focus on the importance of vehicular safety, locations of school crossings, and school zone speed limits and hours.*

Implementing Mitigation Measure M-TR-8 would reduce the impact of passenger loading activities associated with the school under either the proposed project or variant to *less than significant with mitigation*.

Passenger loading activities associated with the proposed childcare facility would be similar to those associated with the proposed school, but with a much lower intensity because the expected daily enrollment would be much lower than for the school. A specific location for the childcare facility has not been identified, but it would meet City requirements (such as *Planning Code* requirements for adjacent open space) and would be accompanied by a passenger loading zone with sufficient proximity and capacity to meet City standards and safely accommodate the expected passenger loading demand (based on the projected enrollment). The final details of the proposed passenger loading zone would also be subject to review and approval by the City as part of development phase applications for the project. Therefore, impacts related to passenger loading activities associated with the childcare facility would be *less than significant*. No mitigation measures are necessary.

Emergency Vehicle Access Impacts

Impact TR-9: The proposed project or variant would not result in inadequate emergency access to the project site or adjoining areas. (*Less than Significant*)

Emergency vehicle access to the site would be provided off of Innes Avenue along Arelious Walker Drive, Hudson Avenue, New Hudson Avenue, Earl Street, Spring Lane, Fairfax Lane, and Beach Lane. In addition, the project sponsors have worked with SFFD to develop preliminary street designs for the internal roadway network that meet emergency access requirements. As part of the project's approval process, SFFD would review and sign off on the project's subdivision map and final street design.

Emergency vehicles traveling between the project site and nearby fire stations, police stations, and medical centers would likely access the project site and other nearby parcels via Third Street, Evans Avenue, Hunters Point Boulevard, Innes Avenue, and Ingalls Street. The proposed streetscape changes under the proposed project or variant would maintain a sufficient ROW for emergency vehicles and would not preclude or inhibit emergency vehicle access.

Specifically, the shared ways along Spring Lane, Fairfax Lane, and Beach Lane would include 20-foot-wide clearance for emergency vehicle access around the loop, with most areas having a 26-foot-wide staging area for emergency vehicles. These proposed widths are greater than or equal to the acceptable minimum widths for emergency vehicle access. Final roadway designs would need to be approved by SFFD before construction, but all roadways have been designed to accommodate a standard fire truck. Therefore, the impact of the proposed project or variant on emergency access with respect to all four project site properties would be *less than significant.* No mitigation measures are necessary.

Construction Impacts

Impact TR-10: The duration and magnitude of temporary construction activities would not result in substantial interference with pedestrian, bicycle, or vehicle circulation and accessibility to adjoining areas, thereby resulting in potentially hazardous conditions. (*Less than Significant*)

For all four project site properties, construction-related trucks would enter and exit the site throughout all construction phases. An average of 50–100 construction trucks per day would travel to the site during the demolition, site preparation, and grading/excavation phases. The largest number of construction trips would occur during the grading/excavation phase, with an average of 85 trucks and up to 250 trucks per day. Between 30 and 60 construction workers per day would be present at the site during the demolition, site preparation, grading/excavation, and drainage/utilities/subgrade phases of construction. This number would increase to up to 200–250 workers per day during the building construction and architectural coating phases. Given the larger size, slower acceleration, and larger turning radii of trucks, the presence of construction truck traffic would temporarily lessen the capacities of local streets, which could temporarily affect traffic and transit operations and increase conflicts with traffic, pedestrians, and bicycles near the project site.

Truck traffic to and from the site would be routed along major arterials and freight routes, as designated in the San Francisco General Plan. Construction vehicles would typically use I-280 and U.S. 101 as their primary routes. Major surface arterials such as Evans Avenue, Cargo Way, Cesar Chavez Street, and Third Street would provide

access between the project site and freeway on- and off-ramps. All of these streets have two or more travel lanes in each direction and are designed to handle truck traffic.

Estimating the trip distribution and mode split of construction workers at this stage would be speculative. However, it is anticipated that the worker-related vehicle-trips and transit person-trips would not substantially affect transportation conditions, because impacts would be temporary and would be much less than those of project operation (i.e., completion and full occupancy). Construction workers who drive to the site and potential temporary parking restrictions along the building frontage would cause a temporary increase in parking demand and a decrease in supply. Construction workers would need to park either on the street or in parking facilities that currently have availability during the day. Parking shortfalls would be temporary, however, and are not considered a CEQA environmental impact.

The project sponsors and their contractor(s) would be required to meet with SFPW and SFMTA before construction to develop and review truck routing plans for demolition, disposal of excavated materials, and materials delivery and storage, and for construction vehicle staging. In general, lane and sidewalk closures or diversions are subject to review and approval by the City's Transportation Advisory Staff Committee, which consists of representatives from SFFD, the San Francisco Police Department, SFMTA's Traffic Engineering Division, and SFPW.

The construction contractor(s) would be required to follow SFMTA's *Regulations for Working in San Francisco Streets* (Blue Book) for any activities affecting the public right-of-way, and would meet with SFMTA staff to determine whether any special traffic permits would be required for the project's construction activities. The contractor(s) also must comply with all City, State, and federal codes, rules, and regulations. Conflicts with transit operations are not anticipated. Nonetheless, the contractor(s) would be required to coordinate with Muni's Street Operations and Special Events Office to coordinate construction activities and reduce any potential impacts on transit operations.

Buildout of the proposed project or variant is anticipated to occur in two major phases, and for purposes of conservatively estimating potential impacts, buildout has been assumed to take place over an approximately 5-year period. Infrastructure would be constructed in tandem with new buildings and open space. Construction impacts would generally be the same for the proposed project or variant.

Construction activities would generally occur Monday through Saturday, between 7:00 a.m. and 8:00 p.m. The typical work shift for most construction workers would be from 7:00 a.m. to approximately 3:30 p.m. on weekdays. Construction is not anticipated to occur on Sundays or major legal holidays, but it may occur as needed if approved by the Department of Building Inspection. The hours of construction would be stipulated by the Department of Building Inspection, and the contractor(s) would be required to comply with the San Francisco Noise Ordinance.

Overall, construction-related transportation impacts of the proposed project or variant would be *less than significant.* No mitigation measures are necessary.

Although the impact of either the proposed project or the variant would be less than significant, the following improvement measure has been recommended to further reduce the less-than-significant impacts of any conflicts between construction activities and pedestrians, bicyclists, transit, and vehicular traffic, and between construction

and nearby businesses and residents. Adoption of Improvement Measure I-TR-10 may be recommended by City decision makers as a condition of project approval under either the proposed project or the variant.

Improvement Measure I-TR-10: Implement Construction Management Strategies

As an improvement measure to further reduce impacts of project construction activities, the project sponsors should implement the following measures:

- ***Prepare a Traffic Control Plan for Construction.*** *To reduce potential conflicts between construction activities and pedestrians, transit, and automobiles during construction activities, the project sponsors should require that the construction contractor(s) prepare a traffic control plan for major phases of construction (e.g., demolition, construction, or renovation of individual buildings). The project sponsors and their construction contractor(s) should meet with relevant City agencies to coordinate feasible measures to reduce traffic congestion during major construction phases, including temporary relocation of transit stops and other measures to reduce potential traffic and transit disruption and to ensure bicycle and pedestrian safety in the immediate vicinity of the project site. For any work within the public right-of-way, the contractor would be required to comply with SFMTA's* Regulations for Working in San Francisco Streets, *which establish rules and permit requirements to assure that construction activities are completed safely and with the least possible interference with pedestrians, bicyclists, transit, and vehicular traffic.*

  The construction time frames of the major phases may overlap with those of other development projects adjacent to the project site. Should overlapping occur, the project sponsors should coordinate with City agencies through the Transportation Advisory Staff Committee and the adjacent developer(s) to minimize the severity of any disruption to adjacent land uses and transportation facilities by overlapping construction-related transportation impacts. The project sponsors, in conjunction with the adjacent developer(s), could propose a construction traffic control plan that includes measures to reduce potential construction traffic conflicts to the extent feasible and commercially reasonable in light of noise regulations, labor and contract requirements, available daylight hours, and critical-path construction schedules. The plan could include measures such as coordinating material drop-offs and offering collective worker parking and transit to the job site.

- ***Reduce Single-Occupant-Vehicle Mode Share for Construction Workers.*** *To minimize parking demand and vehicle-trips by construction workers, the project sponsors should require that the construction contractor include methods in the construction traffic control plan to encourage workers to walk, bicycle, carpool, or use transit to access the project site.*

- ***Provide Project Construction Updates to Adjacent Residents and Businesses.*** *To minimize construction impacts on access for nearby residences, institutions, and businesses, the project sponsors should provide regular updates on project construction to nearby residents and adjacent businesses via a newsletter and/or website. The updates could describe construction activities, peak construction vehicle activities (e.g., concrete pours), and travel lane closures.*

Parking Impacts

Impact TR-11: The proposed project or variant would not result in a substantial parking deficit that could create hazardous conditions affecting traffic, transit, bicycles, or pedestrians or significant delays affecting transit, where particular characteristics of the project or its site demonstrably render use of other modes infeasible. (*Less than Significant*)

Parking conditions are not static. Parking supply and demand varies 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.

Although parking conditions change over time, a substantial deficit in parking caused by a project that creates hazardous conditions affecting traffic, transit, bicycles, or pedestrians or significant delays affecting transit could adversely affect the physical environment. Whether a deficit in parking creates such conditions depends on the magnitude of the shortfall and the ability of drivers to change travel patterns or switch to other travel modes. If a substantial parking deficit caused by a project creates such conditions, these conditions could also result in secondary physical environmental impacts (e.g., air quality or noise impacts caused by congestion), depending on the project and its setting.

The absence of a ready supply of parking spaces, combined with available alternatives to auto travel (e.g., transit service, taxis, bicycles, or travel by foot) 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 General Plan policies, including those in the Transportation Element. The City's Transit First Policy, established in the City's Charter in Article 8A, Section 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 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 the project site and then seek parking farther away if convenient parking were unavailable. The secondary effects of drivers searching for parking are typically offset by a reduction in vehicle-trips attributable to other people who are aware of constrained parking conditions in a given area, and thus choose to reach their destinations by other modes (walking, biking, transit, or taxi). If this scenario occurs, any secondary environmental impacts of a shortfall in parking in the project vicinity would be minor. The traffic assignments used in the transportation analysis, and in the associated air quality, noise, and pedestrian safety analyses, would reasonably address those potential secondary effects.

The project site is currently located within Light Industrial (M-1), Heavy Industrial (M-2), Public (P), and Small Scale Neighborhood Commercial (NC-2) zoning districts, but the project would rezone the site to add a new India Basin Special Use District. The provisions of the India Basin Special Use District, to be set forth in the Planning Code, would establish parking requirements for the project.

Table 166 of the Planning Code specifies that newly constructed residential buildings with more than 201 residential units require two carshare spaces, plus one additional space for every 200 dwelling units over 200.

As a result, the proposed project would require seven carshare spaces, and the variant would require three carshare spaces.

Under Existing Conditions, the Innes Avenue corridor between Hunters Point Boulevard and Donahue Street has approximately 209 on-street parking spaces (for the portions of the street network within a 5- to 10-minute walk from the project site, approximately 1,300–2,600 feet). There are no on-street parking spaces, either existing or proposed, along Hunters Point Boulevard. An additional 113 on-street spaces are available along Arelious Walker Drive within the 700 Innes property and along Hawes Street within the India Basin Shoreline Park property, for a total of 322 spaces. Under the Baseline Conditions scenario, there would be no specific changes to the on-street parking supply in these areas.

Under Baseline plus Project Conditions, however, the project would include left-turn pockets at three intersections along Innes Avenue, reducing the number of on-street parking spaces by an estimated 36 spaces. The project would also reduce on-street parking on the 700 Innes property by 75 spaces and increase on-street parking on the India Basin Shoreline Park property by seven spaces,[11] resulting in a net decrease in the on-street parking supply of 104 spaces.

The proposed project would generate peak demands for 2,553 and 2,439 spaces, respectively, during the weekday midday and weekday evening periods (Table 3.5-14). The variant would generate peak demands for 3,624 and 1,800 spaces, respectively, during the weekday midday and weekday evening periods (Table 3.5-14).

The proposed project would provide 1,800 off-street parking spaces, of which 1,230 would be private and 570 would be public. The variant would provide 1,912 off-street parking spaces, of which 1,412 would be private and 500 would be public. Under both the proposed project and the variant, reserved parking for school staff and faculty would be provided in the Hillside parking garage, located adjacent to the school.

As described in Section 3.5.1, "Environmental Setting," field observations found the midday occupancy of on-street parking in the parking study area to be 35 percent (188 of 533 spaces occupied), with 345 unoccupied spaces available for use. Evening occupancy of on-street parking in the parking study area was 31 percent (164 of 533 spaces occupied), with 369 unoccupied spaces available for use. The analysis of parking demand and supply for the project assumes that residents of the project site would use available parking spaces in off-street parking facilities first, then would park in on-street spaces as parking demand continues.

Table 3.5-25 summarizes the project's overall parking supply and demand and the resulting net surplus or shortfall for both the proposed project and variant. As shown, the proposed project consists primarily of residential uses and would generate greater parking demands during the evening and overnight than the variant, which has more nonresidential uses and would generate greater parking demands at midday.

During the weekday midday peak period, parking demand under either the proposed project or variant would exceed the combined on- and off-street parking supply. During the weekday evening peak period, parking demand under the proposed project would exceed the combined on- and off-street parking supply, but the supply of on- and off-street parking under the variant would meet the parking demand.

[11] The existing surface parking at India Basin Shoreline Park would be redesigned to feature 12 parallel spaces along Hawes Street and 13 head-in spaces at a remodeled turnaround, for a total of 25 spaces (a net increase of seven from the current layout of 18 spaces). No parking is proposed for the 900 Innes or India Basin Open Space properties.

The analysis forecasts parking shortfalls during at least one of the peak parking periods for both the proposed project and variant. However, both the proposed project and the variant would implement a robust set of TDM measures to encourage the use of transit, walking, bicycling, and other modes and discourage the use of automobiles (single-occupancy or otherwise). These TDM measures were not specifically accounted for in the travel demand forecast process, and they would likely result in a substantial shift in mode share away from automobiles and reduce the demand for parking. Therefore, the estimates of parking demand exclude these TDM-related vehicle-trip reductions and should be considered conservative.

In addition, the project site is well-served by public transit and bicycle facilities. The planned improvements under Baseline Conditions would further enhance the attractiveness and convenience of travel options not involving use of a private automobile. Because of the anticipated mode shift away from automobiles, any unmet parking demand associated with the project would not be substantial.

Table 3.5-25: Parking Supply and Demand

Scenario	Existing				Proposed		Estimated Peak Demand		Net Surplus (+) or Shortfall (-)	
	Midday		Evening		Off-Street Supply	Change in On-Street Supply				
	Off-Street Surplus	On-Street Surplus	Off-Street Surplus	On-Street Surplus			Midday	Evening	Midday	Evening
Proposed Project	0	345	0	369	1,800	-104	2,553	2,439	-512	-374
Variant					1,912		3,624	1,800	-1,471	377

Source: San Francisco, 2017.

Overall, the proposed project or variant would not result in a substantial parking deficit. Therefore, the impact of the proposed project or variant related to parking would be *less than significant.* No mitigation measures are necessary.

3.5.4 Cumulative Impacts

The Cumulative Conditions analysis accounts for general background growth, as well as reasonably foreseeable development projects (listed in Table 3-1) and transportation network changes, including but not limited to the projects described below.

- *San Francisco Bicycle Plan:* The 2009 Bicycle Plan does not include any long-term changes for the streets adjacent to the project site that have not already been completed.
- *Muni Forward:* As described under "Transit Service Changes" in Section 3.5.3, "Impacts and Mitigation Measures," changes to Muni routes in the vicinity of the project site are planned under Muni Forward. The Cumulative Conditions analysis assumes changes to the capacity of the lines as identified by the route changes and headway changes planned in Muni Forward.
- *Eastern Neighborhoods Rezoning and Area Plans:* The Eastern Neighborhoods rezoning and area plans include changes in zoning controls and General Plan amendments for an approximately 2,200-acre area on the east side of the City. These changes and amendments are intended to encourage new housing while maintaining or creating cohesive neighborhoods.

- *Candlestick Point–Hunters Point Shipyard Phase II Development:* The approved CPHPS development includes 10,500 housing units, 134,500 square feet (sq. ft.) of office, 3 million sq. ft. of R&D, a 1,200-seat film arts center, a 4,400-seat performance venue, 220 hotel rooms, 256,000 sq. ft. of neighborhood-serving retail, 635,000 sq. ft. of regional-serving retail, 255,000 sq. ft. of studio/art center space, and 100,000 sq. ft. of community facilities.
- *Southeast Treatment Plant construction projects:* The San Francisco Public Utilities Commission (SFPUC) plans to implement upgrades to its large wastewater treatment plant, located along Phelps Street between Jerrold Avenue and Evans Avenue, with new biosolids digesters and headworks facilities. These projects are not included in the cumulative SF-CHAMP forecast because they are not substantial trip generators (would not substantially change operations at either facility), but they are addressed in the evaluation of construction impacts under Cumulative Conditions, as the construction activities would likely overlap with those of the proposed project or variant.
- *Blue Greenway/Bay Trail:* This is a planned 13-mile network of connected parks, trails, and green open space along San Francisco's southeastern waterfront.
- *Hunters View:* This project includes approximately 800 new residential units on the former site of 267 public housing units along West Point Road. Of the 800 total units, 350 will be rental units, all of which will be affordable (and 267 of which will directly replace the 267 existing units), and up to 450 units will be for sale, approximately 10–15 percent of which will be affordable.
- *Executive Park:* This project involves construction of 964 housing units north of Executive Park Boulevard North and Crescent Way. Existing office park buildings within Executive Park will be redeveloped as a predominantly residential area to include 1,600 housing units and 73,000 sq. ft. of retail.
- *Visitacion Valley/Schlage Lock Redevelopment:* This project consists of redevelopment of the former Schlage Lock factory along the east side of Bayshore Boulevard in Visitacion Valley with 2,014 housing units, 72,700 sq. ft. of neighborhood-serving commercial establishments, and 25,000 sq. ft. of cultural uses.

Cumulative Conditions also include full implementation of the transit service improvements described in the CPHPS Transportation Plan:

- *19 Polk:* Discontinuation of the route south of 24th Street (i.e., in the vicinity of the project site), with service replaced by the 48 Quintara–24th Street. Approximate implementation in 2019.
- *24 Divisadero:* Extension along Palou Avenue, Crisp Road, and Spear Avenue to the Hunters Point Shipyard Transit Center. Approximate implementation in 2019.
- *23 Monterey:* Extension to the Hunters Point Shipyard Transit Center to provide interim service before the extension of the 24 Divisadero. Once the 24 Divisadero is extended, the 23 Monterey would resume providing service along its previous route.
- *28R 19th Avenue/Geneva Rapid:* Extension along Geneva Avenue through Candlestick Point to the Hunters Point Shipyard. Conversion to Bus Rapid Transit, with streetscape modifications along Geneva Avenue. Approximate implementation in 2023.
- *29 Sunset:* Extension along Gilman Avenue to Harney Way. Approximate implementation concurrent with the retail center planned for the CPHPS development.

- *44 O'Shaughnessy:* Extension along Innes Avenue to Hunters Point Shipyard Transit Center. Approximate implementation in 2023.
- *48 Quintara–24th Street:* Extension to the Hunters Point Shipyard Transit Center. Approximate implementation in 2019.
- *Candlestick Point Express:* New express bus service between Candlestick Point and downtown San Francisco. Approximate implementation in 2020.
- *Hunters Point Express (HPX):* New express bus service between the Hunters Point Shipyard and downtown San Francisco. Approximate implementation in 2023.

Cumulative Conditions also assumes major service changes for the T Third Street, including increased frequency and capacity and an extension to Chinatown via the Central Subway (currently under construction and scheduled to open in late 2019).

In 2015, one of the project sponsors, BUILD, led the *India Basin Transportation Action Plan* (IBTAP), a planning study focused on streets adjacent to and near the project site. FivePoint (developer for the Shipyard and CPHPS projects), as well as City agencies such as SFMTA, SFPW, RPD, the Office of Community Investment and Infrastructure, and the Planning Department, were also involved. The 2015 draft of the IBTAP is a vision for streetscape and mobility improvements for the India Basin transportation corridor along Jennings Street, Evans Avenue, Hunters Point Boulevard, and Innes Avenue. The IBTAP integrates work documented in the following plans:

- the *India Basin Neighborhood Association Vision Plan*;
- the *Bayview Transportation and Infrastructure Plan*;
- the CPHPS Transportation and Infrastructure plans;
- PG&E's power plant site streetscape improvements; and
- the development plans for the project site, including plans for the India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties and the 700 Innes property.

While not yet approved, the IBTAP represents an evolution of design intentions for the corridor building off of the CPHPS Transportation Plan, and has therefore been included in the Cumulative Conditions analysis as a reasonably foreseeable project. Some of the improvements identified in the IBTAP, however, would be implemented immediately by the project or variant and have already been analyzed together with the project under Baseline plus Project Conditions, separate from the rest of the IBTAP improvements. Those components are described under "Project Features". The remainder of the IBTAP improvements have not been approved yet and may require further environmental review before implementation.

To fully analyze project impacts, three separate cumulative scenarios, each with distinct assumptions regarding streetscape and circulation improvements, have been considered:

- **Cumulative Conditions.** Streetscape design as described in the CPHPS Transportation Plan, equivalent to the network changes in the Jennings Street–Evans Avenue–Hunters Point Boulevard–Innes Avenue corridor assumed under Baseline Conditions. The changes are sourced from the 2010 CPHPS Transportation Plan and the CPHPS Infrastructure Plan (both of which are approved and funded), except for the section between

Earl Street and Donahue Street, which is revised from the Infrastructure Plan recommendations based on a more detailed engineering feasibility study and an agreement between FivePoint and the City. (This exception is also assumed under Baseline Conditions.) There have been no changes to the CPHPS Infrastructure Plan since 2010 that would affect circulation along Hunters Point Boulevard and Innes Avenue.

- **Cumulative Conditions with IBTAP Subvariant A.** Streetscape design as described in the CPHPS Transportation Plan for Jennings Street between Cargo Way and Evans Avenue, and in the IBTAP for Evans Avenue–Hunters Point Boulevard–Innes Avenue between Jennings Street and Donohue Street. This scenario replaces the streetscape proposals in the CPHPS Transportation Plan with the "recommended" improvements described in the IBTAP for the segment of the corridor between Jennings Street and Donohue Street. The proposed streetscape design in the remainder of the corridor would be as shown in the CPHPS Transportation Plan. FivePoint would be obligated to implement the improvements along Evans Avenue, Hunters Point Boulevard, and Innes Avenue. Funding has not yet been identified for proposed improvements along Jennings Street.
- **Cumulative Conditions with IBTAP Subvariant B.** Streetscape design between Cargo Way and Donohue Street as described in the IBTAP. This scenario replaces the streetscape proposals in the CPHPS Transportation Plan with the "recommended" improvements described in the IBTAP for the entire length of the corridor between Cargo Way and Donohue Street. FivePoint would be obligated to implement the improvements along Evans Avenue, Hunters Point Boulevard, and Innes Avenue. Funding has not yet been identified for proposed improvements along Jennings Street.

All three cumulative scenarios would involve adding the Class I bikeway through Northside Park to connect the project site with the Shipyard development. The only difference between the two IBTAP subvariant scenarios is in the configuration of Jennings Street between Cargo Way and Evans Avenue. Thus, impacts can be analyzed separately for a scenario with only the extent of the corridor that FivePoint is obligated to construct (Subvariant A) and a scenario with the full extent of the IBTAP (Subvariant B).

The Cumulative Conditions scenario is evaluated for all modes and topics. The two IBTAP subvariant scenarios are analyzed for traffic hazards and bicycle, pedestrian, and parking impacts because these are the specific elements that would be affected by IBTAP.

Table 3.5-26 provides a summary of streetscape proposals under all three cumulative scenarios.

Table 3.5-26: Cumulative Street Network Changes

Street	Segment	Scenario	Travel Lanes	Parking	Bikeways	Sidewalks
Jennings Street	Cargo Way to Evans Avenue	CC	Two lanes, one in each direction, 12 feet	*East side:* 12 feet *West side:* 12 feet	None	*East side:* 16 feet *West side:* 8 feet
		CC+A				
		CC+B		*West side:* 8 feet	*East side:* 11-foot two-way cycle track	
Evans Avenue	Jennings Street to Hunters Point Boulevard	CC	Four lanes, two in each direction: *Outer:* 11-foot shared bus/auto *Inner:* 10-foot general-purpose	*South side:* 9 feet	Bicycle lanes *North side:* 6 feet *South side:* 6 feet	*North side:* 10 feet *South side:* 8 feet
		CC+A	Four lanes, two in each direction: *Outer:* 12-foot shared bus/auto *Inner:* 10-foot general-purpose	None	*North side:* 11-foot two-way cycle track	*North side:* 10 feet *South side:* 10 feet
		CC+B				
Hunters Point Boulevard	Evans Avenue to Hudson Avenue	CC	Four lanes, two in each direction: *Outer:* 11-foot shared bus/auto *Inner:* 10-foot general-purpose	*South side:* 8 feet	Bicycle lanes *East side:* 6 feet *West side:* 6 feet	*East side:* 10 feet *West side:* 8 feet
		CC+A	Four lanes, two in each direction: *Outer:* 12-foot shared bus/auto *Inner:* 10-foot general-purpose	None	*East side:* 11-foot two-way cycle track	*East side:* 10 feet *West side:* 10 feet
		CC+B				
	Hudson Avenue to Innes Avenue	CC	Four lanes, two in each direction: *Outer:* 11-foot shared bus/auto *Inner:* 10-foot general-purpose	None	Bicycle lanes[1] *East side:* 5 feet *West side:* 5 feet	*East side:* 10 feet *West side:* 8 feet
		CC+A	Four lanes, two in each direction: *Outer:* 12-foot shared bus/auto *Inner:* 10-foot general-purpose	None	*East side:* 11-foot two-way cycle track	
		CC+B				
Innes Avenue	Hunters Point Boulevard to Griffith Street	CC	Four lanes, two in each direction, 10 feet	*North side:* 8 feet *South side:* 8 feet	Bicycle lanes[1] *North side:* 5 feet *South side:* 5 feet	*North side:* 7 feet *South side:* 7 feet
		CC+A	Four lanes, two in each direction: *Outer:* 12-foot shared bus/auto *Inner:* 10-foot general-purpose	Intermittent bays *North side:* 8 feet *South side:* 8 feet	None	*North side:* 10 feet *South side:* 10 feet
		CC+B				
	Griffith Street to Arelious Walker Drive	CC	Four lanes, two in each direction: *Outer eastbound:* 11-foot shared bus/auto *All other:* 10-foot general-purpose	*North side:* 8 feet *South side:* 7 feet	*North side:* 5-foot bicycle lane[1] *South side:* Sharrows[1]	*North side:* 7 feet *South side:* 5 feet
		CC+A	Four lanes, two in each direction: *Outer:* 12-foot shared bus/auto *Inner:* 10-foot general-purpose	Intermittent bays *North side:* 8 feet	None	*North side:* 10 feet *South side:* 8 feet
		CC+B				
	Arelious Walker Drive to Earl Street	CC	Four lanes, two in each direction: *Outer eastbound:* 11-foot shared bus/auto *All other:* 10-foot general-purpose	*North side:* 8 feet *South side:* 7 feet	*North side:* 5-foot bicycle lane[1] *South side:* Sharrows[1]	*North side:* 7 feet *South side:* 5 feet
		CC+A	Four lanes, two in each direction: *Outer:* 12-foot shared bus/auto *Inner:* 10-foot general-purpose	Intermittent bays *North side:* 8 feet	None	*North side:* 10 feet *South side:* 8 feet
		CC+B				
	Earl Street to Donohue Street	CC	Four lanes, two in each direction: *Outer:* 12-foot shared bus/auto *Inner:* 10-foot general-purpose	*North side:* 8 feet *South side:* 8 feet	None	*North side:* 13 feet *South side:* 12 feet
		CC+A				
		CC+B				

Notes: CC = Cumulative Conditions; CC+A = Cumulative Conditions with *India Basin Transportation Action Plan* (IBTAP) Subvariant A; CC+B = Cumulative Conditions with IBTAP Subvariant B

[1] The proposed project or variant would remove these bikeway facilities and replace them with a parallel Class IV bikeway along Hudson Avenue.

Source: San Francisco, 2017.

Impact C-TR-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would not substantially contribute to cumulative impacts related to transportation and circulation for VMT, traffic hazards, transit capacity, pedestrians, bicycles, loading, emergency access, or construction transportation. (*Less than Significant*)

Vehicle Miles Traveled Impacts

VMT per capita and per employee in the study area would likely change between Baseline Conditions and Cumulative Conditions because of the land use and transportation network changes described above. An SF-CHAMP model run for Cumulative Conditions (representing a horizon year of 2040) was used to estimate VMT by private automobiles and taxis for different land use types. Table 3.5-27 summarizes average daily VMT per capita under Cumulative Conditions by land use, for both the Bay Area and the TAZ containing the project site (TAZ 446).

Table 3.5-27: Average Daily Vehicle Miles Traveled Per Capita—Cumulative Conditions

Land Use	Average VMT per Capita		
	San Francisco Bay Area		TAZ 446
	Regional Average	Regional Average minus 15%	
Residential (per resident)	15.8	13.7	8.9
Office (per employee)	16.7	14.5	13.4
Retail (per employee)	14.3	12.4	8.8

Notes: TAZ = transportation analysis zone; VMT = vehicle miles traveled
Source: San Francisco, 2017.

As shown in Table 3.5-27, the average VMT per capita under Cumulative Conditions for the TAZ containing the project site (TAZ 446) is less than the existing regional-average VMT per capita. Under Cumulative Conditions for residential use, the average daily VMT per capita in TAZ 446 is 8.9, which is 44 percent less than the corresponding regional average daily VMT of 15.8. Under Cumulative Conditions for office use, the average daily VMT per office employee in TAZ 446 is 13.4, which is 20 percent less than the corresponding regional average daily VMT of 16.7. Under Cumulative Conditions for retail use, the average daily VMT per retail employee in TAZ 446 is 8.8, which is 39 percent less than the corresponding regional average daily VMT of 14.3. The project site is located in an area where VMT per capita for the proposed uses under Cumulative Conditions would be less than the corresponding regional-average VMT per capita minus 15 percent. Furthermore, the proposed project and the variant would each meet the screening criterion for proximity to transit stations. Therefore, implementing the proposed project or the variant would not result in substantial additional VMT.

As discussed for Baseline plus Project Conditions, the project is not a transportation project but would include features that would alter the transportation network. These features fit within the general types of projects that would not substantially induce automobile travel (Planning Department, 2016).

Overall, cumulative VMT impacts would be *less than significant*. No mitigation measures are necessary.

Traffic Impacts

As discussed for Baseline plus Project Conditions, the project would add vehicle-trips to the surrounding roadways, but a general increase in traffic alone would not be considered a traffic hazard. Project-generated vehicle traffic, in combination with future traffic growth in the area as a result of land use development and other changes, would result in increased traffic congestion on the surrounding roadway network. The project would increase vehicle traffic in the project area, but would also include signalization at key intersections and access points into and out of the project site along Innes Avenue. Thus, the project would eliminate potential conflicts associated with project-generated traffic without introducing new traffic hazards under any of the three cumulative streetscape scenarios (Cumulative Conditions, Cumulative Conditions with IBTAP Subvariant A, and Cumulative Conditions with IBTAP Subvariant B).

Vehicle queues at garage driveways extending into the public ROW under the proposed project or variant would be subject to the Planning Department's conditions of approval for vehicle queue abatement as described in Improvement Measure I-TR-6. Final layouts for the internal street network have not been finalized and are subject to approval by the City. The draft designs would generally be capable of accommodating the largest design vehicles that would be expected to visit the site regularly (SU-30 trucks, fire trucks, and WB-40 trucks) and would not create major traffic hazards, as discussed for Baseline plus Project Conditions.

Therefore, cumulative impacts related to major traffic hazards under either the proposed project or the variant would be *less than significant*. No mitigation measures are necessary.

Although the cumulative impacts with the proposed project or variant would be less than significant, a detailed analysis of intersection LOS conducted for informational and site planning purposes identified an opportunity to improve traffic conditions at the Jennings Street/Evans Avenue/Middle Point Road intersection under Cumulative Conditions. Automobile delay as measured by LOS is not relevant to the analysis of potential environmental impacts of the project, and neither the proposed project nor the variant would cause a major traffic hazard at this intersection. Nonetheless, minor changes to the intersection could be implemented, given the magnitude of vehicle traffic generated by the project and the associated circulation patterns, without negative secondary effects on traffic, transit, bicycle, or pedestrian circulation.

Specifically, implementing Improvement Measure I-C-TR-1 would improve traffic circulation at the intersection and help to further reduce any less-than-significant traffic safety impacts. Adoption of Improvement Measure I-C-TR-1 may be recommended by City decision makers as a condition of project approval under the proposed project or the variant.

> **Improvement Measure I-C-TR-1: Reconfigure Eastbound Approach at Jennings Street/Evans Avenue/Middle Point Road**
>
> *To improve vehicular mobility at the Jennings Street/Evans Avenue/Middle Point Road intersection under either the proposed project or the variant, the project sponsors should fund, and SFMTA should implement, improvements to reconfigure the eastbound Evans Avenue approach of the Jennings Street/Evans Avenue/Middle Point Road intersection from one 100-foot left-turn pocket, one shared through/left lane, and one shared through/right lane to one 100-foot left turn pocket, one through lane, and one shared through/right lane. No additional right-of-way would be required to implement this*

improvement. The project sponsors should fund their fair-share cost of the design and implementation of this improvement.

Responsibility for funding the implementation of this improvement measure would be based on the relative contribution of each of the four properties to the increase in traffic volumes at the intersection. At this location, 1 percent of the added vehicle-trips would be generated by the India Basin Shoreline Park property, 0 percent would be generated by the 900 Innes property, 1 percent would be generated by the India Basin Open Space property, and 98 percent would be generated by the 700 Innes property.

This improvement is feasible pending endorsement and subsequent funding commitment from SFMTA.

Transit Impacts

Transit Capacity

Future-year (2040) ridership projects were developed based on information provided by the Planning Department and ridership forecasts from the SF-CHAMP model. Because the SF-CHAMP model already accounts for some growth in the TAZ that contains the project site, the screenline analyses presented here for local and regional transit should be considered a conservative assessment of the potential impacts of the proposed project or variant on transit capacity.

Proposed Project

Muni Transit Capacity—Cumulative Conditions (Proposed Project). Table 3.5-28 summarizes Muni ridership and capacity on the downtown screenlines under Cumulative Conditions (Proposed Project). As shown, the following screenline and corridors would operate above the 85 percent capacity utilization threshold during the weekday a.m. peak hour:

- Southwest screenline
- California and Fulton/Hayes corridors in the Northwest screenline
- Mission and San Bruno/Bayshore corridors and Other lines in the Southeast screenline
- Subway lines and Haight/Noriega corridor in the Southwest screenline

During the weekday p.m. peak hour, the following screenline and corridors would operate above the 85 percent capacity utilization threshold:

- Northwest screenline
- California, Sutter/Clement, and Fulton/Hayes corridors in the Northwest screenline
- Mission and San Bruno/Bayshore corridors in the Southeast screenline

All of these cases would constitute a *significant* cumulative transit capacity impact.

As shown in Table 3.5-28, however, the proposed project would contribute less than 5 percent to the total ridership on these individual screenlines and corridors, so the contribution of the proposed project to this significant impact would not be *cumulatively considerable*. No mitigation measures are necessary.

Table 3.5-28: Muni Downtown Screenlines—Cumulative Conditions (Proposed Project)

Screenline	Weekday A.M. Peak Hour[1]					Weekday P.M. Peak Hour[1]				
	Ridership	Capacity	Utilization	Proposed Project		Ridership	Capacity	Utilization	Proposed Project	
				Added Trips	Contribution				Added Trips	Contribution
Northeast Screenline										
Kearny/Stockton	7,394	9,473	78%	4	0.1%	6,295	8,329	76%	6	0.1%
Other lines	758	1,785	42%	2	0.3%	1,229	2,065	60%	2	0.2%
Subtotal	*8,152*	*11,258*	*72%*	*6*	*0.1%*	*7,524*	*10,394*	*72%*	*8*	*0.1%*
Northwest Screenline										
Geary	2,673	3,763	71%	3	0.1%	2,996	3,621	83%	4	0.1%
California	1,989	2,306	**86%**	3	0.2%	2,766	2,021	**137%**	3	0.1%
Sutter/Clement	581	756	77%	3	0.5%	749	756	**99%**	3	0.4%
Fulton/Hayes	1,962	1,977	**99%**	2	0.1%	2,762	1,878	**147%**	2	0.1%
Balboa	690	1,008	68%	2	0.3%	776	974	80%	2	0.3%
Subtotal	*7,895*	*9,810*	*80%*	*13*	*0.2%*	*8,049*	*9,250*	***87%***	*14*	*0.2%*
Southeast Screenline										
Third Street	2,442	5,712	43%	17	0.7%	2,300	5,712	40%	29	1.3%
Mission	3,117	3,008	**104%**	0	0.0%	2,673	3,008	**89%**	0	0.0%
San Bruno/Bayshore	1,952	2,197	**89%**	5	0.3%	1,817	2,134	**85%**	8	0.4%
Other lines	1,795	2,027	**89%**	10	0.6%	1,582	1,927	82%	17	1.1%
Subtotal	*9,286*	*12,944*	*72%*	*32*	*0.4%*	*8,372*	*12,781*	*66%*	*54*	*0.6%*
Southwest Screenline										
Subway lines	6,314	7,020	**90%**	1	0.0%	5,692	6,804	84%	1	0.0%
Haight/Noriega	1,415	1,596	**89%**	1	0.1%	1,265	1,596	79%	2	0.2%
Other lines	175	560	31%	0	0.0%	380	840	45%	0	0.0%
Subtotal	*7,904*	*9,176*	***86%***	*2*	*0.0%*	*7,337*	*9,240*	*79%*	*3*	*0.0%*

Notes:
Muni = San Francisco Municipal Railway

Bold indicates capacity utilization of 85 percent or greater.

[1] Shows the a.m. peak hour as inbound (i.e., toward downtown) only and the p.m. peak hour as outbound (i.e., away from downtown) only.

Source: San Francisco, 2017.

A project-specific cordon analysis was also conducted for Cumulative Conditions to assess crowding on routes that directly serve the project site. This analysis includes two routes that would connect directly to the T Third Street line: the 44 O'Shaughnessy and the 48 Quintara–24th Street. Crowding on these local routes is a concern, particularly because they will be used as feeder services for the T Third Street by residents and employees of (and guests and visitors to) both the India Basin and Hunters Point Shipyard areas. In particular, the future extension of the 44 O'Shaughnessy to the Hunters Point Shipyard Transit Center would afford project-generated transit riders transferring to/from the T Third Street an additional option for the first-mile/last-mile connection between Evans Station (at Third Street/Evans Avenue) and the project site. Therefore, the cordon analysis groups the 44 O'Shaughnessy and 48 Quintara–24th Street together, by direction. The project-specific cordon analysis also separately considers the HPX, a new route that would be implemented in conjunction with the CPHPS development to connect Hunters Point Shipyard and the India Basin area with downtown.

Peak-hour ridership on these lines was estimated from the SF-CHAMP model runs for Cumulative Conditions. For the 44 O'Shaughnessy and the 48 Quintara–24th Street, the cordon is placed at the LMLP, between the project site and Third Street; for the HPX, the cordon is placed between the project site and downtown (the express, nonstop segment of the HPX route would begin and terminate in the India Basin area).

Table 3.5-29 summarizes ridership and capacity on the project-specific cordons under Cumulative Conditions (Proposed Project). As shown, transit service through the cordons would operate below the established capacity utilization threshold of 85 percent, and cumulative impacts would be *less than significant*. No mitigation measures are necessary.

Table 3.5-29: Project-Specific Cordon—Cumulative Conditions (Proposed Project)

Direction or Route	Weekday A.M. Peak Hour					Weekday P.M. Peak Hour				
	Ridership	Capacity	Utilization	Proposed Project		Ridership	Capacity	Utilization	Proposed Project	
				Added Trips	Contribution				Added Trips	Contribution
44 and 48 (westbound)	646	1,016	64%	52	8.1%	611	1,016	60%	76	12.4%
44 and 48 (eastbound)	515	1,016	51%	96	18.6%	684	1,016	67%	86	12.6%
HPX[1]	128	270	49%	25	19.5%	181	270	67%	41	22.6%

Notes:
HPX = Hunters Point Express

[1] HPX is evaluated only for the peak direction during each peak hour (inbound toward downtown during the weekday a.m. peak hour and outbound away from downtown during the weekday p.m. peak hour).

Source: San Francisco, 2017.

Regional Transit Capacity—Cumulative Conditions (Proposed Project). Table 3.5-30 summarizes ridership and capacity on the regional transit screenlines under Cumulative Conditions (Proposed Project). As shown, BART service to and from the East Bay would exceed the established capacity utilization threshold of 100 percent during both the weekday a.m. and p.m. peak hours, which would constitute a *significant* cumulative impact. As shown in Table 3.5-30, however, the proposed project would contribute less than 5 percent to the total ridership, so the contribution of the proposed project to this significant impact would not be cumulatively considerable. Thus, the cumulative impact would be *less than significant*. No mitigation measures are necessary.

Table 3.5-30: Regional Transit Screenlines—Cumulative Conditions (Proposed Project)

Screenline	Weekday A.M. Peak Hour[1]					Weekday P.M. Peak Hour[1]				
	Ridership	Capacity	Utilization	Proposed Project		Ridership	Capacity	Utilization	Proposed Project	
				Added Trips	Contribution				Added Trips	Contribution
East Bay Screenline										
BART	38,000	32,100	**118.4%**	20	0.1%	36,000	32,100	**112.1%**	24	0.1%
AC Transit	7,000	12,000	58.3%	0	0.0%	7,000	12,000	58.3%	0	0.0%
Ferries	4,682	5,940	78.8%	0	0.0%	5,319	5,940	89.5%	0	0.0%
Screenline Subtotal	*49,682*	*50,040*	*99.3%*	*20*	*0.0%*	*48,319*	*50,040*	*96.6%*	*24*	*0.1%*
North Bay Screenline										
Golden Gate Transit Buses	1,990	2,543	78.3%	2	0.1%	2,070	2,817	73.5%	3	0.1%
Ferries	1,619	1,959	82.6%	1	0.1%	1,619	1,959	82.6%	1	0.1%
Screenline Subtotal	*3,609*	*4,502*	*80.2%*	*3*	*0.1%*	*3,689*	*4,776*	*77.2%*	*4*	*0.1%*
South Bay Screenline										
BART	21,000	28,808	72.9%	23	0.2%	20,000	28,808	69.4%	24	0.2%
Caltrain	2,310	3,600	64.2%	53	2.3%	2,529	3,600	70.3%	56	2.2%
SamTrans	271	520	52.1%	0	0.0%	150	320	46.9%	0	0.0%
Ferries	59	200	29.5%	0	0.0%	59	200	29.5%	0	0.0%
Screenline Subtotal	*23,640*	*33,128*	*71.4%*	*76*	*0.3%*	*22,738*	*32,928*	*69.1%*	*80*	*0.5%*
Total	*76,931*	*87,670*	*87.8%*	*99*	*0.1%*	*74,746*	*87,744*	*85.2%*	*108*	*0.2%*

Notes:
AC Transit = Alameda–Contra Costa County Transit District; BART = Bay Area Rapid Transit; SamTrans = San Mateo County Transit District
Bold indicates capacity utilization of 100 percent or greater.
[1] Shows the a.m. peak hour as inbound (i.e., toward downtown) only and the p.m. peak hour as outbound (i.e., away from downtown) only.
Source: San Francisco, 2017.

Variant

Muni Transit Capacity—Cumulative Conditions (Variant). Table 3.5-31 summarizes Muni ridership and capacity on the downtown screenlines under Cumulative Conditions (Variant). As shown, the following screenline and corridors would operate above the 85 percent capacity utilization threshold during the weekday a.m. peak hour:

- Southwest screenline
- California and Fulton/Hayes corridors in the Northwest screenline
- Mission and San Bruno/Bayshore corridors and Other lines in the Southeast screenline
- Subway lines and Haight/Noriega corridor in the Southwest screenline

During the weekday p.m. peak hour, the following screenline and corridors would operate above the 85 percent capacity utilization threshold:

- Northwest screenline
- California, Sutter/Clement, and Fulton/Hayes corridors in the Northwest screenline

- Mission and San Bruno/Bayshore corridors in the Southeast screenline

All of these cases would constitute *significant* cumulative impacts.

As shown in Table 3.5-31, however, the variant would contribute less than 5 percent to the total ridership on these individual screenlines and corridors, so the contribution of the variant to these significant impacts would not be *cumulatively considerable.* No mitigation measures are necessary.

Table 3.5-31: Muni Downtown Screenlines—Cumulative Conditions (Variant)

Screenline	Weekday A.M. Peak Hour[1]					Weekday P.M. Peak Hour[1]				
	Ridership	Capacity	Utilization	Variant		Ridership	Capacity	Utilization	Variant	
				Added Trips	Contribution				Added Trips	Contribution
Northeast Screenline										
Kearny/Stockton	7,394	9,473	78%	12	0.2%	6,295	8,329	76%	15	0.2%
Other lines	758	1,785	42%	5	0.7%	1,229	2,065	60%	6	0.5%
Screenline Subtotal	*8,152*	*11,258*	*72%*	*17*	*0.2%*	*7,524*	*10,394*	*72%*	*21*	*0.3%*
Northwest Screenline										
Geary	2,673	3,763	71%	9	0.3%	2,996	3,621	83%	11	0.4%
California	1,989	2,306	**86%**	7	0.4%	2,766	2,021	**137%**	8	0.3%
Sutter/Clement	581	756	77%	7	1.2%	749	756	**99%**	8	1.1%
Fulton/Hayes	1,962	1,977	**99%**	5	0.3%	2,762	1,878	**147%**	6	0.2%
Balboa	690	1,008	68%	5	0.7%	776	974	80%	6	0.8%
Screenline Subtotal	*7,895*	*9,810*	*80%*	*33*	*0.4%*	*8,049*	*9,250*	***87%***	*39*	*0.5%*
Southeast Screenline										
Third Street	2,442	5,712	43%	15	0.6%	2,300	5,712	40%	21	0.9%
Mission	3,117	3,008	**104%**	0	0.0%	2,673	3,008	**89%**	0	0.0%
San Bruno/Bayshore	1,952	2,197	**89%**	4	0.2%	1,817	2,134	**85%**	5	0.3%
Other lines	1,795	2,027	**89%**	9	0.5%	1,582	1,927	82%	11	0.7%
Screenline Subtotal	*9,286*	*12,944*	*72%*	*28*	*0.3%*	*8,372*	*12,781*	*66%*	*37*	*0.5%*
Southwest Screenline										
Subway lines	6,314	7,020	**90%**	2	0.0%	5,692	6,804	84%	2	0.0%
Haight/Noriega	1,415	1,596	**89%**	4	0.3%	1,265	1,596	79%	5	0.4%
Other lines	175	560	31%	0	0.0%	380	840	45%	0	0.0%
Screenline Subtotal	*7,904*	*9,176*	***86%***	*6*	*0.1%*	*7,337*	*9,240*	*79%*	*7*	*0.1%*

Notes:
Muni = San Francisco Municipal Railway

Bold indicates capacity utilization of 85 percent or greater.

[1] Shows the a.m. peak hour as inbound (i.e., toward downtown) only and the p.m. peak hour as outbound (i.e., away from downtown) only.

Source: San Francisco, 2017.

Table 3.5-32 summarizes ridership and capacity on the project-specific cordons under Cumulative Conditions (Variant). As shown, transit service through the cordons would operate below the established capacity utilization threshold of 85 percent, and cumulative impacts would be *less than significant*. No mitigation measures are necessary.

Table 3.5-32: Project-Specific Cordon—Cumulative Conditions (Variant)

Direction or Route	Weekday A.M. Peak Hour					Weekday P.M. Peak Hour				
	Ridership	Capacity	Utilization	Variant		Ridership	Capacity	Utilization	Variant	
				Added Trips	Contribution				Added Trips	Contribution
44 and 48 (westbound)	636	1,016	63%	42	6.6%	711	1,016	70%	176	24.7%
44 and 48 (eastbound)	599	1,016	59%	180	30.0%	662	1,016	65%	64	9.7%
HPX[1]	128	270	47%	20	15.6%	181	270	67%	30	16.6%

Notes:
HPX = Hunters Point Express
[1] HPX is evaluated only for the peak direction during each peak hour (inbound toward downtown during the weekday a.m. peak hour and outbound away from downtown during the weekday p.m. peak hour).
Source: San Francisco, 2017.

Regional Transit Capacity—Cumulative Conditions (Variant). Table 3.5-33 summarizes ridership and capacity on the regional transit screenlines under Cumulative Conditions (Variant). As shown, BART service to and from the East Bay would exceed the established capacity utilization threshold of 100 percent during both the weekday a.m. and p.m. peak hours, which would constitute a *significant* cumulative impact. As shown in Table 3.5-33, however, the variant would contribute less than 5 percent to the total ridership, so the contribution of the variant to this significant impact would not be cumulatively considerable. Thus, the cumulative impact would be *less than significant.* No mitigation measures are necessary.

Table 3.5-33: Regional Transit Screenlines—Cumulative Conditions (Variant)

Screenline	Weekday A.M. Peak Hour[1]					Weekday P.M. Peak Hour[1]				
	Ridership	Capacity	Utilization	Variant		Ridership	Capacity	Utilization	Variant	
				Added Trips	Contribution				Added Trips	Contribution
East Bay Screenline										
BART	38,000	32,100	**118.4%**	54	0.1%	36,000	32,100	**112.1%**	64	0.2%
AC Transit	7,000	12,000	58.3%	0	0.0%	7,000	12,000	58.3%	0	0.0%
Ferries	4,682	5,940	78.8%	0	0.0%	5,319	5,940	89.5%	0	0.0%
Screenline Subtotal	*49,682*	*50,040*	*99.3%*	*54*	*0.1%*	*48,319*	*50,040*	*96.6%*	*64*	*0.1%*
North Bay Screenline										
Golden Gate Transit Buses	1,990	2,543	78.3%	7	0.4%	2,070	2,817	73.5%	8	0.4%
Ferries	1,619	1,959	82.6%	2	0.1%	1,619	1,959	82.6%	3	0.2%
Screenline Subtotal	*3,609*	*4,502*	*80.2%*	*9*	*0.2%*	*3,689*	*4,776*	*77.2%*	*11*	*0.3%*
South Bay Screenline										
BART	21,000	28,808	72.9%	55	0.4%	20,000	28,808	69.4%	62	0.3%
Caltrain	2,310	3,600	64.2%	127	5.5%	2,529	3,600	70.3%	144	5.7%
SamTrans	271	520	52.1%	0	0.0%	150	320	46.9%	0	0.0%
Ferries	59	200	29.5%	0	0.0%	59	200	29.5%	0	0.0%
Screenline Subtotal	*23,640*	*33,128*	*71.4%*	*182*	*0.8%*	*22,738*	*32,928*	*69.1%*	*206*	*0.9%*
Total	*76,931*	*87,670*	*87.8%*	*245*	*0.3%*	*74,746*	*87,744*	*85.2%*	*281*	*0.4%*

Notes:
AC Transit = Alameda–Contra Costa County Transit District; BART = Bay Area Rapid Transit; SamTrans = San Mateo County Transit District
Bold indicates capacity utilization of 100 percent or greater.
[1] Shows the a.m. peak hour as inbound (i.e., toward downtown) only and the p.m. peak hour as outbound (i.e., away from downtown) only.
Source: San Francisco, 2017.

Bicycle Impacts

Bicycle and vehicle activity in the area may increase under Cumulative Conditions because of the area's general growth; growth specifically attributable to recently constructed, proposed, and/or approved nearby projects (including the Shipyard and CPHPS developments); and growth associated with development of the proposed project or variant.

Similar to the discussion of Baseline Plus Project (or Variant) Conditions in Section 3.5.3, "Impacts and Mitigation Measures," however, off-site bikeways planned for other projects and on-site bikeways proposed for either the proposed project or the variant would enhance the overall capacity and connectivity of the bikeway network under Cumulative Conditions. These changes would include streetscape improvements under the CPHPS Transportation Plan and/or the IBTAP and the changes under the proposed project or variant, including a Class IV bikeway through the project site that would run parallel to and north of Innes Avenue and connect to other bikeway facilities such as the regional Blue Greenway/Bay Trail network. As a result, a high-quality bikeway network would also be available throughout the project area under Cumulative Conditions.

The IBTAP streetscape proposals would result in bicycle circulation conditions that would be similar to or better than those resulting from the streetscape designs proposed in the CPHPS Transportation Plan.

Therefore, the proposed project or variant, in combination with past, present, and reasonably foreseeable development in San Francisco, would not create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the project site or adjoining areas. Cumulative impact on bicycle facilities and circulation under any of the Cumulative Conditions scenarios described above would be *less than significant.* No mitigation measures are necessary.

Pedestrian Impacts

Pedestrian and vehicle activity in the area may increase under Cumulative Conditions because of the area's general growth; growth specifically attributable to recently constructed, proposed, and/or approved nearby projects (including the Shipyard and CPHPS developments); and growth associated with development of the proposed project or variant.

Similar to the discussion of Baseline Plus Project (or Variant) Conditions in Section 3.5.3, "Impacts and Mitigation Measures," however, the proposed project or variant combined with other nearby projects would provide new facilities in the study area that would enhance the overall capacity and connectivity of the pedestrian network under Cumulative Conditions. These changes would include features such as:

- curb extensions to increase pedestrian visibility, shorten crossing distances, and decrease vehicle speeds;
- new sidewalks and the removal of gaps or deficiencies in the existing network of sidewalks;
- new marked crosswalks and crossing locations;
- new pedestrian routes and connections through the project site (such as the Blue Greenway/Bay Trail and pedestrian-friendly shared streets; and
- improved compliance with ADA requirements.

Furthermore, future development sites in the surrounding area would contribute to the creation of a high-quality pedestrian network in the project area, but would not be located close enough to one another or to the project site that any pedestrian activities generated would overlap and result in substantial overcrowding of pedestrian facilities.

The IBTAP streetscape proposals would result in pedestrian circulation conditions that would be similar to or better than those resulting from the streetscape designs proposed in the CPHPS Transportation Plan.

Therefore, the proposed project or variant, in combination with past, present, and reasonably foreseeable development in San Francisco, would not 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. Cumulative impact on pedestrian facilities and circulation under any of the Cumulative Conditions scenarios described above would be *less than significant.* No mitigation measures are necessary.

Loading Impacts

By their nature, loading impacts are generally localized and site-specific, and they would not contribute to impacts from other development projects near the project site. This statement is not necessarily true for all projects that propose to accommodate some or all of their loading demand within the public ROW in a densely developed area; however, it applies to the proposed project and variant, given the site conditions and conditions in the surrounding area (e.g., steep hillside along the south side of Innes Avenue with minimal development).

As discussed in Section 3.5.3, "Impacts and Mitigation Measures," the proposed project and variant would each provide adequate loading facilities to satisfy the corresponding anticipated demands. In addition, most existing uses and businesses along Innes Avenue that would be retained with construction of the project currently use off-street loading accommodations or on-street parking spaces to conduct loading activities, and this arrangement is expected to continue after completion of the project, as discussed under Baseline plus Project Conditions.

Neither the proposed project nor the variant would affect loading accommodations for these existing uses such that existing loading activities, in combination with land use development and transportation changes under the proposed project or variant, could result in potentially hazardous conditions for traffic, transit, bicycles, or pedestrians or substantial delays affecting transit. Therefore, neither the proposed project nor the variant would contribute to significant cumulative impacts related to loading. No mitigation measures are necessary.

Emergency Vehicle Access Impacts

A general increase in automobile traffic is expected to occur between the completion of the proposed project or variant and Cumulative Conditions. As discussed in Section 3.5.3, "Impacts and Mitigation Measures," however, the project would not result in inadequate emergency access to the project site or adjoining areas. Furthermore, even with expected increases in traffic volumes in the area, if Mitigation Measure M-C-TR-2 were implemented, emergency vehicles would be able to travel in the transit-only lanes, which should be free of congestion. However, even without implementation of Mitigation Measure M-C-TR-2, emergency vehicle access is expected to be adequate because emergency vehicles are permitted to move into the opposing traffic lanes to maneuver around congestion during emergencies, and all other vehicles are required to move to the curb to allow emergency

vehicles to pass. Therefore, the cumulative impact of the proposed project or variant on emergency access would be *less than significant.* No mitigation measures are necessary.

Construction Impacts

Construction of the proposed project or variant may overlap with the construction of other projects, including the land use and transportation network changes assumed under Cumulative Conditions as described above. The CPHPS development project will be under construction for the next several years, and the proposed project or variant would also take several years to be completed. As a result, construction activities for these two projects near the project site will likely take place simultaneously over an extended period of time.

Construction at SFPUC's Southeast Treatment Plant (approximately one mile to the west of the project site on the south side of Evans Avenue between Phelps Street and Rankin Street) would also involve staging activity at Piers 94 and 96, near the project site, and would generate construction-related truck traffic along Evans Avenue traveling between the plant and the staging area. Specifically, construction for the Biosolids Digester Facilities Project would take place between August 2018 and May 2024, and would generate 60 daily delivery truck trips and 142 daily construction truck trips during the peak month of construction. In conjunction with these activities, SFPUC would prepare and implement a traffic control plan to minimize impacts on local streets. Construction for the Headworks Replacement Project would take place between August 2017 and December 2023, with daily truck trips varying by construction phase but reaching a maximum of 24 daily truck trips during the improvements to the Bruce Flynn Pump Station between January 2018 and January 2019.

Localized cumulative construction-related effects on transportation could occur as a result of cumulative projects that generate increased traffic at the same time and on the same roadways as the proposed project or variant, particularly if these projects are in close proximity to each other.

As described under Baseline plus Project Conditions, however, construction activities are temporary. The project sponsors and their contractor(s) would coordinate with various City departments such as SFMTA and SFPW, through the City's Transportation Advisory Staff Committee, to develop coordinated plans to address routing of construction vehicles, traffic control, and pedestrian movements adjacent to the project site for the duration of the construction activities. The proposed project or variant and other construction activities in the project vicinity would also be subject to SFMTA's Blue Book and all other applicable City regulations. In some cases (such as the Southeast Treatment Plant projects), the construction site would also be located some distance away from the Project site such that any potential overlap in construction-related effects is not expected to cause substantial interference with pedestrian, bicycle, or vehicle circulation and accessibility to adjoining areas such that it would result in potentially hazardous conditions.

Therefore, the contribution of the proposed project or variant to cumulative impacts related to construction would be *less than significant.* No mitigation measures are necessary.

Parking Impacts

On-street parking supply under Cumulative Conditions would be similar to Baseline plus Project Conditions. Approximately 218 on-street parking spaces would be available in the parking study area, generally covering the portions of the street network within a 5- to 10-minute walk (approximately 1,300–2,600 feet) from the project

site. Under either Cumulative Conditions with IBTAP Subvariant A or Cumulative Conditions with IBTAP Subvariant B, there would be an additional reduction of on-street parking in the study area of 127 spaces (to a net supply of 91 spaces) compared to Cumulative Conditions.[12]

The proposed project or variant represents the only substantial new development in the India Basin area. The project's robust set of TDM measures to encourage the use of transit, walking, bicycling, and other modes and discourage the use of automobiles (single-occupancy or otherwise) would be expected to reduce new parking demand by project residents and employees. Furthermore, existing on-street parking in the area is generally underutilized, as discussed in Section 3.5.1, "Environmental Setting."

The proposed project or variant, in combination with other foreseeable land use development and transportation improvement projects, would also implement substantial improvements to the transit, bikeway, and pedestrian networks serving the project site. As discussed in Section 3.5.3, "Impacts and Mitigation Measures," the absence of a ready supply of parking spaces, combined with available alternatives to auto travel 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.

Therefore, the proposed project or variant would not result in a substantial parking deficit under any of the three cumulative streetscape scenarios: Cumulative Conditions, Cumulative Conditions with IBTAP Subvariant A, and Cumulative Conditions with IBTAP Subvariant B. Cumulative impacts related to parking would be *less than significant.* No mitigation measures are necessary.

Impact C-TR-2: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would substantially contribute to significant cumulative impacts related to transportation and circulation for transit delay. (Significant and Unavoidable with Mitigation)

Transit Delay

An analysis of transit delay was conducted for Cumulative Conditions similar to the analysis conducted for Baseline plus Project Conditions. Under Cumulative Conditions, the 44 O'Shaughnessy line would have the highest peak-period frequency (6.5 minutes), so the threshold for significance under this cumulative conditions scenario is 3¼ minutes (195 seconds) over the round-trip travel time.

A mitigation measure to provide transit-only lanes along Evans Avenue between Napoleon Street (west of Third Street) and Jennings Street/Middle Point Road was included as part of approvals for the CPHPS development. Therefore, the cumulative transit-delay analysis assumes that this mitigation measure is in place under Cumulative Conditions, and that average travel speeds in this segment of the corridor would double, from a systemwide average of 8 mph to 16 mph. Between Jennings Street and Donohue Street, buses would travel in mixed-flow lanes, and travel time for transit vehicles was estimated based on the average travel speed calculated from a microsimulation analysis of this segment of the corridor.

[12] Separately, IBTAP Subvariant B would also include the loss of approximately 45 additional spaces because of the removal of a parking lane on Jennings Street between Cargo Way and Evans Avenue, although this would be located outside the parking study area.

Table 3.5-34 summarizes the change in travel time for transit vehicles in the study corridor under Cumulative Conditions.

Table 3.5-34: Transit Travel Time (Cumulative Conditions)

Scenario	Travel Time (min:sec)	Average Speed (mph)	Change	
			Travel Time (min:sec)	Average Speed (mph)
Weekday A.M. Peak Hour				
Cumulative Conditions (No Project)	10:44	16.0	–	–
Cumulative plus Project Conditions				
Proposed Project	18:52	9.1	+ 8:08	- 6.9
Variant	21:42	7.9	+ 10:58	- 8.1
Weekday P.M. Peak Hour				
Cumulative Conditions (No Project)	11:09	15.4	–	–
Cumulative plus Project Conditions				
Proposed Project	26:30	6.5	+ 15:21	- 8.9
Variant	27:23	6.3	+ 16:14	- 9.1

Notes:
min:sec = minutes and seconds; mph = miles per hour
Travel times shown represent the average across the eastbound and westbound directions of the corridor, as scheduling requirements are based on round-trip travel time.
Source: San Francisco, 2017.

As shown in Table 3.5-34, either the proposed project or the variant would result in an increase in the round-trip travel time that would exceed the half-headway threshold of 3 ¼ minutes during the weekday a.m. and p.m. peak hours. Therefore, these cumulative transit impacts would be *significant*, and the contributions of the proposed project or the variant to the respective impacts would be cumulatively considerable. However, Mitigation Measure M-C-TR-2 would reduce these cumulative transit-delay impacts.

Mitigation Measure M-C-TR-2: Implement Transit-Only Lanes

SFMTA shall convert one of the two travel lanes in each direction of the Evans Avenue–Hunters Point Boulevard–Innes Avenue–Donohue Avenue corridor from a mixed-flow lane to a transit-only lane between the Jennings Street/Evans Avenue/Middle Point Road and Donahue Street/Robinson Street intersections. The transit-only lanes would be located in the curbside lanes, similar to those identified for Evans Avenue between Third Street and Jennings Street as part of the CPHPS EIR, and would improve bus travel speed and travel time reliability along the corridor.

The project sponsors shall fund, and the SFMTA shall implement, this measure prior to the time the proposed project or variant would result in an increase in transit travel time to 18 minutes, 14 seconds during the weekday a.m. peak hour or 18 minutes, 39 seconds during the weekday p.m. peak hour, whichever comes first. The SFMTA shall monitor transit service and travel time along the corridor to assess when this threshold is met and the project sponsors shall pay their respective fair share amounts after invoicing by SFMTA.

The project sponsors' fair-share portion of this cumulative mitigation measure under either the proposed project or the variant shall be based on the relative proportion of vehicle-trips contributed by the

proposed project or the variant to cumulative traffic conditions such that mitigation would be needed. In this case, the fair share was determined by calculating the ratio of the total trips added by the project at the three study intersections adjacent to the 700 Innes property to the sum of eastbound and westbound through traffic without the project. Since the impact would occur during both the weekday a.m. and p.m. peak periods, the higher of the ratios for each individual peak period was conservatively selected to determine the fair-share contribution. This fair-share contribution would be 38 percent for the proposed project and 50 percent for the variant.

Responsibility among the project sponsors for the four properties would then be further subdivided based on the relative proportion of vehicle-trips generated by each of the four properties. In this case, 1 percent of the vehicle-trips would be generated by the India Basin Shoreline Park property, 0 percent would be generated by the 900 Innes property, 1 percent would be generated by the India Basin Open Space property, and 98 percent would be generated by the 700 Innes property.

Implementing Mitigation Measure M-C-TR-2 would reduce the cumulative contribution of the proposed project or variant to transit-delay impacts to less than significant. Because SFMTA cannot commit to implement these improvements at this time, however, the impact would be *significant and unavoidable with mitigation*.

If the mitigation measure is implemented, pedestrian, bicycle, and parking impacts would be *less than significant*, because the proposed changes would only involve restriping the mixed-flow travel lanes, and therefore would not change pedestrian or bikeway facilities or parking conditions. Any temporary sidewalk, parking, or traffic lane closures required for construction under the mitigation measure would be coordinated with City agencies, so construction impacts would be *less than significant*. Secondary impacts on emergency access would also be less than significant, because the transit-only lanes would be available to emergency vehicles and would therefore provide more rapid emergency access along the corridor.

In general, the mitigation measure would result in an increase in traffic delays for vehicles traveling in the general travel lane adjacent to the transit-only lane (i.e., worsening LOS) along the Innes Avenue corridor because lane capacity would be reduced from two lanes to one lane in each direction, but it would not result in major traffic hazards given the road would be designed to current design standards. Therefore, impacts related to traffic hazards would also be *less than significant*.

Implementation of a transit-only lane would qualify as an "active transportation, rightsizing (aka road diet), and transit project" or "other minor transportation project" as defined in the screening criteria in the draft guidelines prepared by OPR pursuant to Section 21099 of the Public Resources Code, and adopted by the City in Planning Commission Resolution 19579. Therefore, a detailed VMT analysis is not required for the proposed mitigation measure, and VMT impacts are presumed to be *less than significant*.

Overall Cumulative Impacts Conclusion

The overall cumulative impact of the proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would be *significant and unavoidable with mitigation*.

3.5.5 References

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3.6 NOISE

This section describes the existing environmental and regulatory setting related to noise and vibration and addresses the potential impacts of the proposed project and variant. Further information supporting the noise analysis is provided in Appendix E of this EIR. Comments regarding potential noise impacts of soil excavation and transportation during project construction and the potential noise impacts of cumulative projects were received during the public scoping period in response to the Notice of Preparation. These comments are addressed in this section.

3.6.1 Environmental Setting

Fundamentals

Acoustics

Noise is generally defined as unwanted or objectionable sound. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and in the extreme, hearing impairment. Noise effects can be caused by pitch or loudness. *Pitch* is the number of complete vibrations or cycles per second of a wave that result in the range of tone from high to low; higher-pitched sounds are louder to humans than lower-pitched sounds. *Loudness* is the intensity or amplitude of sound. The sound pressure level (SPL) is the descriptor most commonly used to characterize the loudness of a sound level. Because sound pressure can vary enormously within the range of human hearing, the logarithmic decibel scale (dB) is used to quantify sound levels.

The human ear is not equally sensitive to all frequencies within the audible sound spectrum, so SPL measurements can be weighted to better represent frequency-based sensitivity of average healthy human hearing. One such specific "filtering" of sound is called "A-weighting." Because humans are less sensitive to low-frequency sound than they are to high-frequency sound, A-weighted decibel (dBA) levels deemphasize low-frequency sound energy. A logarithmic scale is used to quantify sound intensity that approximates the range of sensitivity of the human ear that normally extends from 0 dBA to about 140 dBA. A 10 dBA increase in the level of continuous noise represents a perceived doubling of loudness. With respect to traffic noise, increases of 3 dBA are barely perceptible to people, while a 5 dBA increase is readily noticeable.

Different descriptors for sound-level measurements are used to characterize the time-varying nature of sound. Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that noise effects are dependent on the total acoustical energy content and the time and duration of occurrence. Table 3.6-1 briefly defines these measurement descriptors and other acoustical terminology used in this section. Table 3.6-2 provides examples of various sound levels in numerous outdoor and indoor environments, with the descriptions placed corresponding to their typical sound levels along a vertical scale of increasing dBA.

In a typical environment, the day-night level (DNL or L_{dn}) and community noise equivalent level (CNEL) noise descriptors rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered equivalent, and they are treated as such in this section. For a stationary point source of sound, sound typically attenuates at a rate of 6 dB per doubling of distance (dB/DD) (i.e., 6 dB at 50 feet, 12 dB at 100 feet, 18 dB at

200 feet). For a line source of sound such as free-flowing traffic on a freeway, sound attenuates at a rate of approximately 3 dB/DD (i.e., 3 dB at 50 feet, 6 dB at 100 feet, 9 dB at 200 feet).

Atmospheric conditions such as wind, temperature gradients, and humidity can change how sound propagates over distance and can 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 traveling over an acoustically absorptive surface such as grass attenuates at a greater rate than sound traveling over a hard surface such as pavement. The increased attenuation caused by acoustical air and ground absorption is typically in the range of 1–2 dB/DD. Barriers such as buildings and topography that block the line of sight between a source and receiver also increase the attenuation of sound over distance.

Table 3.6-1: Acoustical Terminology

Term	Definition
Sound	A vibratory disturbance created by a vibrating object which, when transmitted by pressure waves through a medium such as air, can be detected by a receiving mechanism such as the human ear or a microphone.
Noise	Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
Ambient Noise	The composite of noise from all sources near and far in a given environment.
Decibel (dB)	A unitless measure of sound on a logarithmic scale, which represents the squared ratio of sound-pressure amplitude to a reference sound pressure. The reference pressure is 20 micro-Pascals, representing the threshold of human hearing (0 dB).
A-Weighted Decibel (dBA)	An overall frequency-weighted sound level that approximates the frequency response of the human ear.
Equivalent Noise Level (L_{eq})	The average sound energy occurring over a specified time period. In effect, L_{eq} is the steady-state sound level that in a stated period would contain the same acoustical energy as the time-varying sound that actually occurs during the same period.
Maximum and Minimum Noise Levels (L_{max} and L_{min})	The maximum or minimum instantaneous sound level measured during a measurement period.
Day-Night Level (DNL or L_{dn})	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring between 10 p.m. and 7 a.m. (nighttime).
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 A-weighted sound levels occurring between 7 p.m. and 10 p.m. and 10 dB added to the A-weighted sound levels occurring between 10 p.m. and 7 a.m.

Source: Data compiled by AECOM in 2016

Table 3.6-2: Typical Sound Levels

Common Outdoor Activities	Noise Levels, dBA	Common Indoor Activities
	110	Rock Band
Jet Fly-Over at 1,000 feet		
	100	
Gas Lawn Mower at 3 feet		
	90	
Diesel Truck at 50 feet at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
Gas Lawn Mower at 100 feet	**70**	Vacuum Cleaner at 10 feet
Commercial Area		Normal Speech at 3 feet
Heavy Traffic at 300 feet	**60**	
		Large Business Office
Quiet Urban Daytime	**50**	Dishwasher in Next Room
Quiet Urban Nighttime	**40**	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio (background)
	10	
Lowest Threshold of Human Hearing	**0**	Lowest Threshold of Human Hearing

Source: Caltrans, 2013a

Noise from Multiple Sources

Because sound pressure levels in decibels are based on a logarithmic scale, they cannot be added or subtracted in the usual arithmetical way. Therefore, sound pressure levels in decibels are logarithmically added on an energy summation basis. In other words, adding a new noise source to an existing noise source, both producing noise at the same level, will not double the noise level. Instead, if the difference between two noise sources is 10 dBA or more, the louder noise source will dominate and the resultant noise level will be equal to the noise level of the louder source. In general, if the difference between two noise sources is 0–1 dBA, the resultant noise level will be 3 dBA higher than the louder noise source, or both sources if they are equal. If the difference between two noise sources is 2–3 dBA, the resultant noise level will be 2 dBA above the louder noise source. If the difference between two noise sources is 4–10 dBA, the resultant noise level will be 1 dBA higher than the louder noise source.

Health Effects of Environmental Noise

The U.S. Environmental Protection Agency (EPA) all but eliminated its noise investigation and control program in the 1970s, but European nations have continued to study noise and its health effects; therefore, the World Health Organization (WHO) is perhaps one of the best sources of current knowledge regarding health impacts of noise.[1] According to the WHO, sleep disturbance can occur when continuous indoor noise levels exceed 30 dBA L_{eq}, or when intermittent interior noise levels reach 45 dBA L_{max}, particularly if background noise is low (WHO, 1999).

The WHO criteria suggest that when a bedroom window is slightly open (a 15-dB reduction from outside to inside noise levels), exterior continuous (ambient) nighttime noise levels in residential areas should be 45 dBA L_{eq} or below, particularly in areas with older housing stock, and that short-term events should not generate noise exceeding 60 dBA (Harris, 1997; Wyle Laboratories, 1994; OPR, 2003).[2] An acoustically well-insulated building with windows and doors closed can provide 30–35 dB of noise attenuation. More conventional residential construction provides 20–25 dB of noise reduction with windows closed and only about 15 dB of noise reduction when windows are open.

Other potential health effects of noise identified by the WHO include decreased performance on complex cognitive tasks, such as reading, attention, problem solving, and memorization; physiological effects such as hypertension and heart disease (after many years of constant exposure, often by workers, to high noise levels); and hearing impairment (again, generally after long-term occupational exposure, although shorter-term exposure to very high noise levels, such as concert noise at 100 dBA several times a year, can also cause hearing impairment).

Noise can also disrupt speech intelligibility at relatively low levels. For example, in a classroom setting, a noise level as low as 35 dBA can disrupt clear understanding. Finally, noise can cause annoyance and can trigger emotional reactions like anger, depression, and anxiety. The WHO reports that during daytime hours, few people are seriously annoyed by activities with noise levels below 55 dBA, or moderately annoyed by noise levels below 50 dBA (WHO, 1999).

Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. The peak particle velocity (PPV) and root-mean-square (RMS) velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is the metric often used to describe blasting vibration and other vibration sources that may result in structural stresses in buildings (FTA, 2006).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response to ground vibrations. It takes some time for the human body to respond to vibration signals; therefore, average vibration amplitude (the RMS velocity) is the most appropriate descriptor for gauging

[1] The *San Francisco General Plan* Land Use Compatibility Guidelines for Community Noise, presented in Figure IV.E-3, were created during the same era.

[2] Note that these noise levels represent ambient noise and are not comparable to the day-night noise level, L_{dn}, which, as noted above, adds a 10-dB "penalty" to nighttime noise. Thus, for example, the L_{dn} calculated for two 24-hour noise measurements in the plan area was 7–8 dBA higher than the measured nighttime noise level.

human response to the typical ground vibration. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a period of 1 second. As with airborne sound, the RMS velocity is often expressed in dB notation as vibration dB (VdB), which serves to compress the range of numbers required to describe vibration (FTA, 2006). This VdB scale is based on a reference value of 1 microinch per second. The background vibration-velocity level typical of residential areas is approximately 50 VdB (FTA, 2006).

Groundborne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels. Table 3.6-3 summarizes the general human response to different levels of groundborne vibration.

Table 3.6-3: Human Response to Different Levels of Groundborne Vibration

Vibration-Velocity Level (VdB)	Human Reaction
65	Approximate threshold of perception.
75	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85	Vibration acceptable only if there is an infrequent number of events per day.

Note:
VdB = vibration decibels referenced to 1 microinch per second and based on the root-mean-square vibration velocity.
Source: FTA, 2006

Existing Noise Environment

The noise study area includes existing representative noise-sensitive land uses (aka receptors) located within 500 feet of the project site and along roadway segments within the project's transportation study area. The current ambient noise environment in the project vicinity is controlled primarily by vehicular traffic on local roadways, including Innes Avenue and Hunters Point Boulevard, and nearby commercial activities. The existing ambient noise environment on the project site properties and off-site has been measured and is summarized below.

Existing Noise-Sensitive Land Uses

Noise-sensitive land uses generally consist of those uses where exposure to noise would result in adverse effects, as well as uses for which quiet is an essential element of their intended purpose. Residential dwellings are of primary concern, because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other noise-sensitive land uses include hospitals, convalescent facilities, hotels, churches, libraries, and other uses where low noise levels are essential.

The nearest noise-sensitive land uses to the project site include:

- the cluster of residential uses along the north and south sides of Innes Avenue between Griffith Street and Earl Street;
- Our Lady of Lourdes Catholic Church at the northwest corner of Innes Avenue and Hawes Street;
- public housing (Hunters View, Hunters Point East/West, and Westbrook) to the west;
- Malcolm X Academy located at 350 Harbor Road;

- Wu Yee Child Development Center located at 729 Kirkwood Avenue; and
- the Candlestick Point–Hunters Point Phase I Shipyard Development Plan area to the east (east of Donahue Street).

Existing structures adjacent to the project site along Innes Avenue are mostly single-story commercial/industrial buildings and low-rise (four stories or less) residential buildings. In addition, several buildings on the project site are eligible for listing in the California Register of Historical Resources, including the Shipwright's Cottage (900 Innes Avenue) and 702 Earl Street.

Noise-Level Measurements

Ambient noise measurements were conducted on July 11, 2016, at six selected locations representing the existing noise-sensitive land uses on the project site and in the vicinity (Table 3.6-4 and Figure 3.6-1). These measurements were performed using a Larson Davis Model 870 integrated sound level meter, which is a Type 1 standard instrument as defined in American National Standards Institute S1.4. All instruments were calibrated and operated according to the manufacturer's specifications. The noise sensor device (microphone) was placed approximately 5 feet above the local grade. Two 15-minute measurements were conducted at the location of each off-site receptor, one measurement each during the daytime and nighttime hours.

Table 3.6-4 lists the measured short-term ambient noise levels. Based on field observation and measured sound data, the current ambient noise environment in the project vicinity is controlled primarily by vehicular traffic on local roadways. The existing ambient noise environment on the project site properties and off-site is summarized below.

Table 3.6-4: Existing Ambient Noise Levels on and near the Project Site

			Measured Noise Levels A-Weighted Sound Level (dBA)		
Location	**Description**	**Measurement Time**	**L_{eq}**	**L_{min}**	**L_{max}**
1	Project site—India Basin Shoreline Park	12:01 to 12:16 p.m.	53.1	47.4	63.8
		10:00 to 10:15 p.m.	53.5	47.6	64.6
2	Off-site residential use on Innes Avenue west of Hawes Street	12:23 to 12:38 p.m.	61.9	48.1	80.4
		10:19 to 10:34 p.m.	54.9	43.9	74.9
3	Off-site residential use on Innes Avenue at Griffith Street	12:46 to 1:01 p.m.	66.4	48.6	84.3
		10:36 to 10:51 p.m.	61.5	47.2	74.5
4	Project site—700 Innes (south side of Arelious Walker Drive)	1:08 to 1:23 p.m.	52.8	47.5	64.3
		10:54 to 11:09 p.m.	50.0	43.7	63.6
5	Project site—700 Innes (near the cul-de-sac of Earl Street)	1:26 to 1:41 p.m.	55.0	47.0	68.9
		11:12 to 11:27 p.m.	49.5	43.0	62.8
6	Off-site residential use at the cul-de-sac of Cleo Rand Lane	1:49 to 2:04 p.m.	54.2	47.9	63.5
		11:30 to 11:45 p.m.	46.1	42.1	54.9

Notes:
dBA = A-weighted decibels; L_{eq} = equivalent noise level; L_{max} = maximum noise level; L_{min} = minimum noise level
Monitoring locations correspond to those depicted in Figure 3.6-1.
Source: Data collected by AECOM in 2016

Source: Data compiled by AECOM in 2016

Figure 3.6-1: Noise Measurement Locations

India Basin Shoreline Park Property

Based on the noise measurement at Location 1, short-term ambient noise levels at this property range from 53.1 dBA equivalent noise level (L_{eq}) during the daytime hour to 53.5 dBA L_{eq} during the nighttime hour.

900 Innes Property

Based on the noise measurement at Location 3 (because the dominant noise source is from Innes Avenue), short-term ambient noise levels at this property range from 61.5 dBA L_{eq} during the nighttime hour to 66.4 dBA L_{eq} during the daytime hour.

India Basin Open Space Property

Based on the measured ambient noise levels at Locations 4 and 5 (because this property is set back from Innes Avenue, the existing main roadway), short-term ambient noise levels at this property range from 49.5 dBA L_{eq} during the nighttime hour to 55.0 dBA L_{eq} during the daytime hour.

700 Innes Property

Short-term ambient noise levels at this property range from 49.5 dBA L_{eq} during the nighttime hour for the northern portion of the site away from Innes Avenue (as measured at Location 5) to 66.4 dBA L_{eq} during the daytime hour along Innes Avenue (as measured at Location 3).

Off-Site Noise-Sensitive Receptors

Short-term ambient noise levels at off-site sensitive receptors range from 46.1 dBA L_{eq} during the nighttime hour (as measured at Location 6) to 66.4 dBA L_{eq} during the daytime hour (as measured at Location 3).

Existing Traffic Noise

In addition to the ambient noise measurements, existing traffic noise on local roadways in the areas surrounding the project site was calculated to quantify the 24-hour L_{dn} noise levels, based on the existing traffic volumes as provided in the project's transportation impact analysis (San Francisco, 2017). Traffic noise levels along local roadways were calculated based on daily volumes and their distribution, using the roadway noise calculation procedures provided in the California Department of Transportation (Caltrans) *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (TeNS) (Caltrans, 2013a), which is based on the roadway noise prediction methodologies in the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (RD-77-108).

Table 3.6-5 lists the calculated traffic noise levels for the analyzed local roadway segments based on existing traffic volumes. As shown, the existing L_{dn} attributable only to surface-street traffic volumes ranged from 50.1 dBA L_{dn} along Arelious Walker Drive north of Innes Avenue to 67.1 dBA L_{dn} along Third Street north of Evans Avenue. Based on the modeled existing traffic noise levels, traffic noise on the project site properties and off-site can be characterized as indicated below.

Table 3.6-5: Predicted Existing Roadway Traffic Noise Levels

Roadway Segment	Approximate Distance to Roadway Centerline, feet	Calculated Traffic Noise Levels,[1] dBA L_{dn}	Adjacent Land Uses	Existing Noise Exposure Compatibility Category[2]
Evans Street				
West of Third Street	40	65.8	Industrial	1
Between Third Street and Jennings Street	50	64.5	Commercial, School	2
Hunters Point Boulevard				
Between Jennings Street and Innes Avenue	50	61.9	Parks	1
Innes Avenue				
West of Hunters Point Boulevard	35	57.0	Residential	1
Between Hunters Point Boulevard and Griffith Street	35	61.9	Residential	2
Between Griffith Street and Arelious Walker Drive	35	62.0	Residential	2
Between Arelious Walker Drive and Earl Street	35	61.6	Residential	2
East of Earl Street	30	62.1	Residential	2
Arelious Walker Drive				
North of Innes Avenue	30	50.1	Residential, Open Space	1
Third Street				
North of Evans Avenue	50	67.1	Commercial	1
South of Evans Avenue	50	65.7	Commercial	1
Jennings Street				
North of Evans Avenue	35	56.7	Industrial	1
South of Evans Avenue (Middle Point Road)	30	62.9	Residential	2

Notes:
dBA = A-weighted decibels; L_{dn} = day-night level

[1] Predicted traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.

[2] The indicated noise exposure compatibility is based on the most stringent land use category, pursuant to the *San Francisco General Plan* Land Use Compatibility Chart, as follows:
1: Satisfactory, with no special insulation requirements.
2: 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.
3: 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.
4: New construction or development should generally not be undertaken.

Source: Data modeled by AECOM in 2017

India Basin Shoreline Park Property

This property is adjacent to Hunters Point Boulevard, which is exposed to an existing traffic noise level of 61.9 dBA L_{dn}.

900 Innes Property

This property faces Innes Avenue, which is currently exposed to traffic noise levels of 61.6 to 62.0 dBA L_{dn}.

India Basin Open Space Property

This property is currently exposed to traffic noise of 50.1 dBA L_{dn}, based on the modeled traffic noise levels along Arelious Walker Drive.

700 Innes Property

Like the 900 Innes property, the 700 Innes property faces Innes Avenue, which is currently exposed to traffic noise levels of 61.6 to 62.0 dBA L_{dn}.

3.6.2 Regulatory Framework

Federal

Noise Control Act

The EPA Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. The federal Noise Control Act of 1972 set programs and guidelines to identify and address the effects of noise on public health and welfare, and the environment. Although primary responsibility for regulating noise was transferred to State and local governments in 1982, EPA provided guidelines for noise levels that would be considered safe for community exposure without the risk of adverse health or welfare effects. EPA found that to prevent hearing loss over the lifetime of a receptor, the yearly average L_{eq} should not exceed 70 dBA, and the L_{dn} should not exceed 55 dBA in outdoor activity areas or 45 dBA indoors to prevent interference and annoyance.

Federal Transit Administration Standards and Guidelines

The City currently does not have quantitative vibration standards or limits; instead, it uses the groundborne vibration standards and guidelines from the Federal Transit Administration (FTA). FTA's technical manual *Transit Noise and Vibration Impact Assessment* provides guidelines for analyzing impacts of construction noise and groundborne vibration with respect to building damage occurring during construction activities (FTA, 2006). Table 3.6-6 summarizes FTA's general assessment criteria for construction noise. The City uses these criteria to assess the significance of construction noise that occurs during the daytime hours, when construction noise is exempt from the standards of the City's Noise Ordinance (see discussion below under "Local").

FTA recommends the guidelines specified in Table 3.6-6 for a general assessment of construction noise. If the combined noise level in 1 hour from the two noisiest pieces of equipment exceeds these criteria, an adverse community reaction may result.

Table 3.6-6: Federal Transit Administration General Assessment Criteria for Construction Noise

	1-Hour L_{eq} (dBA)	
Land Use	**Day**	**Night**
Residential	90	80
Commercial	100	100
Industrial	100	100

Notes: dBA = A-weighted decibels; L_{eq} = equivalent noise level
Source: FTA, 2006

FTA also provides guidelines that are applicable to various building categories for evaluating potential damage from groundborne vibration. Table 3.6-7 presents FTA's recommended vibration-damage criteria for construction activities: 0.20 in/sec PPV (94 VdB) for nonengineered timber and masonry buildings and 0.50 in/sec (102 VdB) for structures or buildings constructed of reinforced concrete, steel, or timber.

Table 3.6-7: Federal Transit Administration–Recommended Vibration-Damage Criteria

Building Category	PPV (in/sec)	Approximate VdB[1]
Reinforced concrete, steel, or timber (no plaster)	0.50	102
Engineered concrete and masonry (no plaster)	0.30	98
Nonengineered timber and masonry buildings	0.20	94
Buildings extremely susceptible to vibration damage	0.12	90

Notes:
in/sec = inch per second; PPV = peak particle velocity; VdB = vibration decibels
[1] Root-mean-square velocity in decibels (i.e., VdB) referenced to 1 microinch per second.
Source: FTA, 2006

In addition, FTA has guidelines for maximum-acceptable vibration criteria for different types of land uses. These criteria, based on the frequency of an event, are applied to specific land use types to address the human response to groundborne vibration (FTA, 2006). Table 3.6-8 presents the FTA-recommended criteria for groundborne vibration impacts for various land uses. As shown, FTA recommends a maximum vibration level of 80 VdB for residential uses and buildings where people normally sleep and 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, offices) (FTA, 2006).

State

State of California General Plan Guidelines

The State of California has adopted noise compatibility guidelines for general land use planning. The types of land uses addressed by the State standards and the acceptable noise categories for each land use are included in Appendix C, "Noise Element Guidelines," of the *State of California General Plan Guidelines* (OPR, 2003), published and updated by the Governor's Office of Planning and Research. The level of acceptability of the noise environment depends on the activity associated with each particular land use. According to the State guidelines, an exterior noise environment up to 65 dBA L_{dn}/CNEL is considered normally acceptable for residential use; up to 70 dBA L_{dn}/CNEL is considered normally acceptable for school, office, and commercial uses.

Table 3.6-8: Federal Transit Administration–Recommended Criteria for Groundborne Vibration Impacts

Land Use Category	Impact Levels (VdB)		
	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]
Category 1: Buildings where vibration would interfere with interior operations	65[4]	65[4]	65[4]
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime uses	75	78	83

Notes:
VdB = vibration level in decibels, referenced to 1 microinch per second.
[1] Defined as more than 70 vibration events of the same source per day. Most rapid-transit projects fall into this category.
[2] Defined as 30–70 vibration events of the same source per day. Most commuter trunk lines have this many operations.
[3] Defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.
[4] This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the heating, ventilation, and air conditioning systems and stiffened floors.
Source: FTA, 2006

California Building Standards Code

The State of California has established noise insulation standards for new multifamily residential units, hotels, and motels that would be subject to relatively high levels of transportation-related noise. These requirements are collectively known as the California Noise Insulation Standards (California Code of Regulations, Title 24, Part 2). The Noise Insulation Standards are provided in the 2013 California Building Standards Code (CBC) (Section 1207). As provided in the CBC, the noise insulation standards set forth an interior standard of 45 dBA L_{dn}/CNEL in any habitable room. The CBC requires an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than 60 dBA L_{dn}/CNEL. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

California Green Building Standards Code

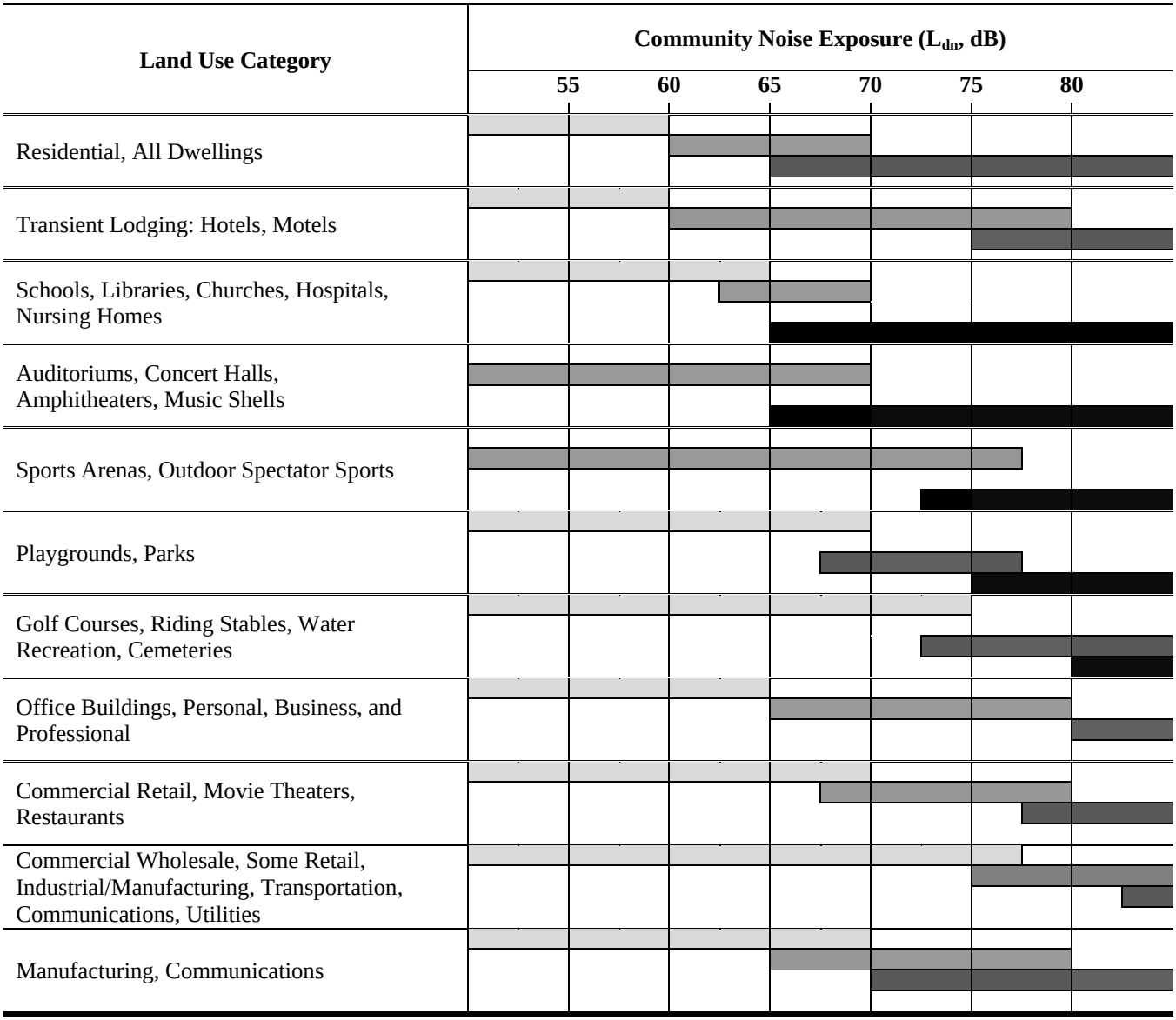
In addition to the noise insulation standards for residential/hotel uses, the State of California has established noise insulation standards for nonresidential uses, provided in the 2013 California Green Building Standards Code, (California Code of Regulations, Title 24, Part 11, Section 5.507). The noise insulation standards in the California Green Building Standards Code set forth an interior standard of 50 dBA 1-hour L_{eq} in occupied areas during hours of operation.

Local

San Francisco General Plan

The *San Francisco General Plan* focuses on the effect on the community of noise from ground-transportation noise sources and includes a land use compatibility chart for community noise. This chart (Table 3.6-9) identifies a range of noise levels considered generally compatible or incompatible with various land uses.

Table 3.6-9: San Francisco Land Use Compatibility Chart for Community Noise



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 requirement must be made and needed noise insulation features included in the design.

New construction or development should generally not be undertaken.

Notes: dB = decibels; L_{dn} = day-night noise level
Source: San Francisco, 2004:Policy 11.1

The chart also indicates when to consider or analyze special noise reduction requirements, such as providing sound insulation for affected properties. Residential and hotel uses are considered compatible (satisfactory) in areas where the noise level is 60 dBA L_{dn} or less; schools, classrooms, libraries, churches, and hospitals are compatible in areas where the noise level is 65 dBA L_{dn} or less; and playgrounds, parks, offices, retail commercial uses, and noise-sensitive manufacturing and communication uses are considered compatible in areas where the noise level is 70 dBA L_{dn} or less.

San Francisco Noise Control Ordinance

The San Francisco Noise Control Ordinance (Noise Control Ordinance) regulates sources of both construction noise and stationary-source noise within the City limits, such as transportation, construction, mechanical equipment, entertainment, and human or animal behavior. Found in Article 29, "Regulation of Noise," of the San Francisco Police Code, the ordinance addresses noise from construction equipment, nighttime construction work, and stationary mechanical equipment and waste processing activities. The sections of the Noise Control Ordinance described below are applicable to the project.

Section 2907, "Construction Equipment," and Section 2908, "Construction Work at Night"

These sections of the Noise Control Ordinance establish noise levels for construction equipment. Section 2907(a) limits noise levels from construction equipment as specified under the ordinance to 80 dBA at 100 feet (or other equivalent noise level at another distance) between 7 a.m. and 8 p.m. According to Section 2908, construction work at night (from 8 p.m. to 7 a.m.) may not exceed the ambient level by 5 dB at the nearest property plane unless the Director of Public Works or the Director of Building Inspection grants a special permit before the start of such work.

The provisions of Section 2907(a) do not apply to impact tools and equipment that have intake and exhaust mufflers as recommended by the manufacturers and that are approved by the Director of Public Works or the Director of Building Inspection as accomplishing maximum noise attenuation. The noise exemption also applies to pavement breakers and jackhammers that are equipped with acoustically attenuating shields or shrouds as recommended by the manufacturers, and that are approved by the Director of Public Works or the Director of Building Inspection as accomplishing maximum noise attenuation.

Section 2909, "Noise Limits"

This section of the Noise Control Ordinance regulates noise from on-site stationary noise sources (e.g., stationary mechanical and electrical equipment) within specific land uses. Section 2909 states that the noise levels from equipment operating on the project property shall not exceed the ambient noise levels at the property line by:

- 5 dBA if the noise source is on a residential property,
- 8 dBA if the noise source is on a commercial or industrial property, and
- 10 dBA if the noise source is on a public property.

In addition, Section 2909 states that no fixed (permanent) noise source, as defined by the ordinance, may cause the noise level inside any sleeping or living room in a residential dwelling unit to exceed 45 dB between 10 p.m.

and 7 a.m. or 55 dB between 7 a.m. and 10 p.m. when windows are open, except where building ventilation is achieved through mechanical systems that allow windows to remain closed.

3.6.3 Impact Evaluation

Significance Thresholds

The thresholds for determining the significance of impacts in this analysis are consistent with the environmental checklist in Appendix G of the State CEQA Guidelines, which has been modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the proposed project or the variant would result in a significant impact related to Noise and Vibration. Implementation of the proposed project or the variant would have a significant effect on Noise and Vibration if the proposed project or variant would::

- result in 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 exposure of persons to or generation of excessive groundborne vibration or groundborne 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;
- for a project located within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; or
- for a project located in the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

Approach to Analysis

The project site is not located within 2 miles of a public airport or public-use airport. The nearest public airports to the site are Oakland International Airport and San Francisco International Airport. The project site is not located in the vicinity of a private airstrip. Therefore, the proposed development would not expose people to excessive noise levels associated with aircraft operation, and this topic is not evaluated further in the EIR.

In *California Building Industry Association v. Bay Area Air Quality Management District*, decided in 2015,[3] the California Supreme Court held that CEQA does not generally require lead agencies to consider how existing environmental conditions might affect a project's users or residents, except when the project would significantly exacerbate an existing environmental condition.

Thus, the analysis below evaluates noise or vibration caused by operation of the project or variant on on-site users and residents and nearby off-site sensitive receptors. It also evaluates noise or vibration caused by construction of the project or variant on off-site sensitive receptors and on-site users and residents of Phase 1, assuming that such

[3] *California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal.4th 369. Opinion filed December 17, 2015.

on-site users or residents are residing on the project site during Phase 2 construction. An impact would be significant if implementation of the proposed project or variant would significantly exacerbate existing or future noise levels (i.e., result in noise levels that would exceed those that would occur without the project).

Construction Noise Impacts

For the purposes of this EIR and to be conservative and anticipate the maximum impacts possible during buildout, construction phasing assumed that the RPD development (India Basin Shoreline Park and 900 Innes) would be completed in two phases over 2 years and the BUILD development (700 Innes and Indian Basin Open Space) would be completed in two large phases over 5 years. Overall construction could begin as early as spring 2018; however, given the phases, construction would most likely not be continual. The timing of construction would depend on approval and funding considerations.[4] The India Basin Open Space property would be developed in conjunction with the phasing and construction of the 700 Innes property and the SFPW-owned ROW parcels intersecting and adjacent to the 700 Innes property, because the redesign of the India Basin Open Space property would be integrated with the proposed new publicly accessible open space in the BUILD development.

Project-generated construction noise levels were estimated with calculations using noise emission levels and procedures included in FHWA's Roadway Construction Noise Model (FHWA, 2006). The noise levels of specific construction equipment were calculated along with the resulting noise levels at the locations of nearby sensitive receptors. The construction noise analysis used the anticipated inventory of equipment for the construction phases. Construction noise levels were calculated for the sensitive receptors' locations based on the standard noise-distance attenuation factor for point sources, 6.0 dBA/DD.

Construction activities for the proposed project and the variant would utilize a similar mix of construction equipment (types and quantity) and similar processes. Therefore, the predictions of project construction noise apply to both the proposed project and the variant. In an effort to make a conservative estimate of construction noise, the calculations in this analysis assume that the construction equipment would operate at the perimeter of the project site's construction area, closest to the locations of the affected sensitive receptors. Construction noise impacts were evaluated in two ways as follows:

- by comparing the expected noise level at a distance of 100 feet from individual pieces of anticipated project construction equipment to the City's applicable noise standard, a maximum of 80 dBA as measured 100 feet from the source of the construction equipment noise (see "San Francisco Noise Control Ordinance" in Section 3.6.2, "Regulatory Framework"); and
- by comparing the estimated combined noise level (from the anticipated two loudest pieces of concurrently operating project construction equipment, which may include impact tools and related equipment that are excluded from the City's aforementioned limit of 80 dBA at 100 feet) at the nearby representative noise-sensitive receptors with the City's adopted FTA-based guidance threshold of 90 dBA hourly L_{eq} for residential land uses during daytime hours (see Table 3.6-6).

A list of the construction equipment likely to be used was provided by RPD and BUILD. Noise reference levels listed in FHWA's *Road Construction Noise Model User's Guide* were used to quantify noise levels from this equipment (FHWA, 2006). Individual equipment noise levels were compared with the City's aforementioned

80 dBA limit at 100 feet. The logarithmic sum of the noise levels generated by the two loudest pieces of equipment for a construction activity was compared to an FTA-based one-hour L_{eq} of 90 dBA for residential land uses during the daytime.

In addition to the comparison with the City's noise standards for construction equipment, the noise levels from project construction activities were compared with the pre-project ambient noise level to determine the potential for a substantial temporary noise increase, as required by CEQA. Caltrans has established a 12-dB increase over the ambient noise level (hourly L_{eq}) as a "substantial" noise increase, based on the concept that a 10-dB increase is generally perceived as a doubling of loudness (Caltrans, 2011). Therefore, for a conservative analysis of the impact of this project, a 10-dBA noise increase over the ambient noise level is considered a substantial noise increase.

Operational Noise Impacts

Operational noise impacts from stationary sources, such as outdoor air-conditioning equipment, were evaluated by identifying the noise levels generated by outdoor stationary noise sources associated with the project and comparing those noise levels to the City's exterior-noise standards. For the outdoor mechanical equipment for buildings, a noise performance criterion was specified to meet the City's noise standards, as detailed information is not available at this stage of the project. The City's Noise Control Ordinance states that noise from project-related outdoor air-conditioning equipment sources shall not exceed the ambient noise level by 5 dBA at the adjacent residential property line, or by 8 dBA at the adjacent commercial property line. The ordinance also specifies that noise levels generated by loading dock and trash compactor operations shall not exceed 75 dBA at a distance of 50 feet.

Traffic Noise Impacts

The noise levels generated by existing traffic on local roadways were calculated using a noise prediction model developed based on calculation methodologies provided in the Caltrans TeNS document (Caltrans, 2013a). The procedures for calculating roadway noise described in the Caltrans TeNS are consistent with the roadway noise prediction methodologies in the FHWA Highway Traffic Noise Prediction Model (RD-77-108). This methodology allows analysts to define roadway configurations, barrier information (if any), and receiver locations, in addition to traffic volumes. To present a simplified analysis consistent with the amount of technical project information available, the noise model assumes a "hard" site condition and no barriers between the roadway and receivers. Assuming a hard site condition is conservative; it limits sound attenuation from ground conditions to a maximum of 3 dBA/DD, whereas the "soft" ground condition would provide sound attenuation of 4.5 dBA/DD.

The project's future traffic noise levels along affected local roadways were calculated based on anticipated daily traffic volumes and distribution, as provided in the project's transportation impact study (San Francisco, 2017). The contribution of traffic noise along area roadways was determined by comparing modeled noise levels under various conditions: existing, existing plus project, future background without project, future background with project, and future cumulative with project. Currently, the City does not have noise regulations for traffic traveling on public roadways. Therefore, the threshold for evaluating potential impacts of project-related mobile sources (roadway traffic) is based on the change in ambient noise levels that is attributable to the proposed project or variant, evaluated in conjunction with the City's land use compatibility guidelines (Table 3.6-9). Generally, a

noise-level change of less than 3 dBA is not perceptible in an outdoor environment, whereas a 5 dBA increase is readily perceptible.

Based on this information, significant off-site noise impacts would occur if traffic related to project operations would increase noise levels at noise-sensitive uses (i.e., residential uses) under future conditions by either:

- +5 dBA L_{dn}, and the resulting noise would fall within the "satisfactory" category (i.e., per the San Francisco Land Use Compatibility Chart for Community Noise shown in Table 3.6-9); or,
- +3 dBA, and the resulting noise would fall above the "satisfactory" land use compatibility category.

With respect to temporary project construction traffic, a significant impact would occur if project-related construction traffic noise would exceed the ambient noise levels at noise-sensitive receptors (i.e., residences) by 5 dBA (in hourly L_{eq}) or more.

Groundborne Vibration Impacts

Groundborne vibration impacts were assessed quantitatively based on existing documentation (e.g., vibration levels produced by specific operations of construction equipment) and the distance of sensitive receptors from the given source. Short-term and long-term vibration sources and levels were calculated using FTA procedures and impacts were evaluated against the established thresholds presented above in Tables 3.6-7 and 3.6-8 (FTA, 2006). Based on the FTA and Caltrans guidelines, the vibration impact thresholds are as follows:

- *For potential building damage:*
  - 0.2 PPV (or 94 VdB) at nonengineered buildings
  - 0.12 PPV (or 90 VdB) at buildings that are extremely susceptible to vibration damage (i.e., fragile historic buildings)
- *For human annoyance at residences:* 80 VdB[5]

Project Features

The proposed project or variant would involve demolishing some of the existing buildings on the project site and constructing a mixed-use development that would include residential, commercial, institutional/educational, research and development, parking, and open space uses. Construction activities would generate noise and vibration; operational activities, including project-related vehicle trips, would generate noise.

[5] 80 VdB is based on 0.04 in/sec, PPV "distinctly perceptible" groundborne vibration per Caltrans' *Transportation and Construction Vibration Guidance Manual*, September 2013, Table 20, p. 38. (Caltrans, 2013b).

Impact Analysis

Impact NO-1: Construction of the proposed project or variant would not expose persons to noise levels in excess of standards established in the local general plan or noise ordinance (Sections 2907 and 2908 of the San Francisco Noise Control Ordinance). ***(Less than Significant)***

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Individual pieces of construction equipment that would be used for either the proposed project or variant produce maximum noise levels of 75–101 dBA at a reference distance of 50 feet from the noise source (Table 3.6-10). These referenced maximum noise levels are based on the *FHWA Roadway Construction Noise Model User's Guide* (FHWA, 2006), which contains actual measured noise data for construction equipment. Construction noise levels at a distance of 100 feet were calculated based on the reference noise level at 50 feet and a 6-dB attenuation (applicable to point sources).

Table 3.6-10: Noise Levels Generated by Typical Construction Equipment

Construction Equipment	Maximum Noise Levels at 50 Feet,[1] dBA L_{max}	Maximum Noise Levels at 100 Feet,[2] dBA L_{max}
Air Compressor	78	72
Backhoe	78	72
Compactor	83	77
Concrete Pump	79	73
Concrete Truck	81	75
Crane	81	75
Rubber-Tired Dozer	82	76
Excavator	84	78
Forklift	75	69
Generator	81	75
Grader	85	79
Paver/Paving Equipment	77	71
Roller	80	74
Loader	79	73
Dump/Haul/Delivery Truck	76	70
Water Truck	76	70
Welders	74	68
Impact Pile Driver	101	95

Notes:
dBA = A-weighted decibels; L_{max} = maximum noise level
[1] Federal Highway Administration–published noise emission levels at a distance of 50 feet.
[2] Calculated noise levels at a distance of 100 feet.
Sources: FHWA, 2006; data compiled by AECOM in 2017

Noise levels at 100 feet from the construction equipment anticipated for the proposed project or variant would be below the significance threshold of 80 dBA (applicable to daytime construction activities), except for noise from the impact pile driver. The City Noise Control Ordinance's 80-dBA noise limit does not apply to impact tools such as impact pile drivers if the equipment includes noise control features (e.g., intake and exhaust muffler, acoustically attenuating shields or shrouds) as recommended by the manufacturer and is approved by the Director of Public Works or Director of Building Inspection. Therefore, the noise levels generated by the project's construction equipment would comply with the City's Noise Control Ordinance. Construction noise impacts associated with all four project site properties would be *less than significant.* No mitigation measures are necessary.

Impact NO-2: Construction of the proposed project or variant would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. ***(Less than Significant with Mitigation)***

The following impact discussion describes the impacts of project construction on ambient noise levels. Separate impact analyses are associated with on-site construction noise (e.g., noise levels generated by specific construction activity types) and off-site construction traffic (e.g., noise from construction worker vehicles) at each project site property. The respective impacts predicted would occur under either the proposed project or the variant. An "overall" impact conclusion, which represents the most severe CEQA impact conclusion of those listed below, as well as a presentation of appropriate mitigation measures, is provided at the end of the impact discussion.

On-Site Construction Noise

Construction noise impacts of the proposed project and variant are analyzed below. It is important to note that although impacts related to the India Basin Shoreline Park and 900 Innes properties are discussed first here and elsewhere in this EIR, construction at the India Basin Open Space and 700 Innes properties would actually start before construction at the India Basin Shoreline Park and 900 Innes properties. Construction of all four project site properties would have overlapping phases.

The noise levels listed in Table 3.6-10 are the maximum noise levels that occur when the equipment operates under full power. Most equipment used on construction sites often does not continuously operate at full power. Therefore, acoustical usage factors (AUFs) were applied by equipment type to represent the actual portion of time (e.g., during a typical hour) when full-power operation status (and thus the loudest noise) could be expected. Although these factors are estimates and would vary based on the actual construction activities and their duration, the FHWA *Roadway Construction Noise Model User's Guide* (FHWA, 2006) provides reference AUF values for a large variety of construction equipment, vehicle, and process categories. To more accurately characterize noise levels during construction, the average (L_{eq}) noise level for each construction stage was calculated. These average noise levels are based on the quantity, type, and AUF for each type of equipment that would be used during each construction stage, and are typically attributable to the two noisiest pieces of equipment operating simultaneously.

Construction noise impacts on nearby noise-sensitive receptors under either the proposed project or the variant would be a function of the noise generated by construction equipment, equipment locations, the timing and duration of noise-generating construction activities, and distance to the receptors. To be conservative, this analysis assumes that the equipment locations are as close to the studied receptor as the nearest project construction

boundary. The proposed project or variant would involve constructing infrastructure (on-site roads, utilities, and trails), buildings (residential, commercial, and school buildings), and shoreline improvements and in-water features (a pier). Noise levels under the proposed project and the variant would be similar, because the two construction scenarios would use similar equipment.

India Basin Shoreline Park and 900 Innes Properties

As described in Chapter 2.0, "Project Description," construction for the India Basin Shoreline Park and 900 Innes properties would be conducted in two major phases. The first major construction phase (RPD Phase) would occur at the 900 Innes property and the second phase (RPD Phase 2) would take place at the India Basin Shoreline Park property; therefore, impacts at these two project site properties are discussed in this order below.

Construction at these properties could begin as early as spring 2018 and for the purposes of this EIR, is conservatively assumed to be 2 years; the actual timing would depend on approval and funding considerations.[6] The maximum possible cut and off-haul from the India Basin Shoreline Park and 900 Innes properties over the entire construction period is anticipated to be up to approximately 28,360 cubic yards. Approximately 30,361 cubic yards of fill would be imported.

900 Innes Property (RPD Phase 1)

Table 3.6-11 presents estimated noise levels at the locations of off-site receptors, as generated by construction at the 900 Innes property (RPD Phase 1) under either the proposed project or the variant. The table shows that construction noise levels at all existing off-site and future on-site receptor locations would be below FTA's noise limit of 90 dBA 1-hour L_{eq}, except during Phase 1, the foundation phase. During Phase 1 (foundation) construction, pile driving would be required for a short time; one pile driver would operate (i.e., expected hammer operation) on 12 days for approximately 7 hours per day. During this time frame, the construction noise level at future on-site sensitive uses (located within 75 feet of RPD Phase 1 construction) is anticipated to exceed FTA's noise limit by 1.7 dBA.

Estimated construction noise levels at the locations of off-site receptors would also exceed daytime ambient noise levels during the foundation phase and the grading and excavation phase. During the foundation phase, when pile driving would occur, the off-site construction noise level at off-site receptor location 3 (see Figure 3.6-1) would exceed the ambient +10 dBA threshold by up to 10.8 dBA. However, during this pile driving activity, the ambient +10 dBA threshold would be exceeded at locations 2 and 6 by only 3.5 dBA and 0.6 dBA, respectively. During excavation and grading, the existing ambient +10 dBA threshold would be exceeded by only 0.3 dBA at location 3.

The construction noise analysis also addresses potential impacts on future on-site noise-sensitive uses (e.g., residences and a school), which could be occupied during construction at the 900 Innes property. As indicated in Table 3.6-11, the estimated construction noise levels at the future on-site sensitive receptors (located adjacent to the construction area for the 900 Innes property) would be below FTA's noise limit, except during the foundation phase. During this phase, estimated construction noise levels at the future on-site sensitive uses would exceed FTA's noise limits by 1.7 dBA. In Table 3.6-11 and subsequent similar tables that present predicted noise levels from the analysis, **boldfaced** values indicate that an impact threshold has been exceeded.

Table 3.6-11: Predicted Noise Levels at Off-Site Receptors and Future On-Site Receptors from On-Site Construction at the 900 Innes Property—RPD Phase 1

Receptor Location[1] and Distance (feet) to Construction Activity	Daytime Ambient Noise Levels, dBA L_{eq}	Estimated Maximum Noise Levels by Construction Activity, dBA L_{eq}					Significance Threshold,[2] dBA L_{eq}	
		Demo/Site Preparation	Grading/ Excavation	Foundation (Pile Driving)	Building Construction	Paving/ Finishes	FTA Criteria	Ambient +10 dBA
2 (425')	61.9	59.4	65.0	**75.4**	60.6	57.9	90.0	71.9
3 (110')	66.4	71.2	**76.7**	**87.2**	72.3	69.7	90.0	76.4
6 (1,450')	54.2	48.8	54.3	**64.8**	49.9	47.3	90.0	64.2
Future On-Site (65')	N/A	75.8	79.9	**91.7**	75.0	73.2	90.0	N/A

Notes:
Boldfaced values indicate exceedance of an applicable significance threshold.
dBA = A-weighted decibels; Demo = demolition; FTA = Federal Transit Administration; L_{eq} = equivalent noise level; N/A = not applicable; RPD = San Francisco Recreation and Parks Department
[1] See Figure 3.6-1 for receptor locations. Locations 2, 3, and 6 are off-site. Locations 1, 4, and 5 are within the project site; therefore, they are not included in the construction noise analysis Instead, future on-site receptors are represented as noted.
[2] Significance threshold is based on FTA's general assessment construction noise criteria at residential uses and existing ambient noise level plus 10 dBA (per California Department of Transportation guidelines).
Source: Data compiled by AECOM in 2017

India Basin Shoreline Park (RPD Phase 2)

Table 3.6-12 presents estimated noise levels at the locations of off-site receptors, as generated by construction at the India Basin Shoreline Park property (RPD Phase 2) under either the proposed project or the variant. The table shows that construction noise levels at all existing off-site receptors and the future on-site receptor location would be below FTA's noise limit of 90 dBA. However, these construction noise levels would temporarily exceed the daytime ambient noise level at the locations of all off-site receptors for a short time. In particular, during Phase 2, the foundation phase (when impact pile-driving activities are expected to occur for approximately 7 hours per day on 27 days), the daytime construction-related noise level at receptor location 2 (see Figure 3.6-1) would exceed the ambient +10 dBA threshold by 3.6 dBA.

India Basin Open Space and 700 Innes Properties

Under either the proposed project or the variant, construction at the India Basin Open Space and 700 Innes properties would be conducted in two major phases. The first major construction phase would involve rough grading of the entire site; removal of the existing pier; and construction of the streets, utilities, open space, underground garage, buildings located between New Hudson Avenue and Innes Avenue and Earl Street and New Griffith Street, and the park area north of Arelious Walker Drive. The second phase would involve construction of the permanent streets, utilities, parks, open space, new pier, and structures east of Hudson Avenue and south of Arelious Walker Drive. Construction could begin as early as 2018 and for the purposes of this EIR, is conservatively assumed to be 5 years to reach full build out in order to take a more conservative approach to potential impacts; the actual timing would depend on approval and funding considerations.

Table 3.6-12: Predicted Noise Levels at Off-Site Receptors and Future On-Site Receptors from On-Site Construction at the India Basin Shoreline Park Property—RPD Phase 2

Receptor Location[1] and Distance (feet) to Construction Activity	Daytime Ambient Noise Levels, dBA L_{eq}	Estimated Maximum Noise Levels by Construction Activity, dBA L_{eq}					Significance Threshold,[2] dBA L_{eq}	
		Demo/Site Preparation	Grading/ Excavation	Foundation (Pile Driving)	Building Construction	Paving/ Finishes	FTA Criteria	Ambient +10 dBA
2 (420')	61.9	59.5	65.1	**75.5**	60.7	58.1	90.0	71.9
3 (425')	66.4	59.4	65.0	75.4	60.6	57.9	90.0	76.4
6 (1,685')	54.2	47.5	53.0	63.5	48.6	46.0	90.0	64.2
Future On-Site (360')	N/A	60.9	66.4	76.9	62.0	59.4	90.0	N/A

Notes:
Boldfaced values indicate exceedance of an applicable significance threshold.
dBA = A-weighted decibels; Demo = demolition; FTA = Federal Transit Administration; L_{eq} = equivalent noise level; N/A = not applicable; RPD = San Francisco Recreation and Parks Department
[1] See Figure 3.6-1 for receptor locations. Locations 2, 3, and 6 are off-site. Locations 1, 4, and 5 are within the project site; therefore, they are not included in the construction noise analysis. Instead, future on-site receptors are represented as noted.
[2] Significance threshold is based on FTA's general assessment construction noise criteria at residential uses and existing ambient noise level plus 10 dBA (per California Department of Transportation guidelines).
Source: Data compiled by AECOM in 2017

The maximum possible soil removal and off-haul from these properties over the entire construction period is anticipated to be up to 350,000 cubic yards. Construction activities would occur primarily between 7 a.m. and 8 p.m., Monday through Friday. Construction may also involve occasional work on Saturdays.

Table 3.6-13 presents estimated noise levels at the locations of off-site receptors, as generated by Phase 1 construction activities at the India Basin Open Space and 700 Innes properties under either the proposed project or the variant. The table shows that during the foundation phase (when pile driving would be used for approximately 12 days), the estimated construction-period noise level would exceed the ambient +10 dBA threshold at off-site receptor location 3 (see Figure 3.6-1) by 8.7 dBA. At location 2 during Phase 1, the predicted noise level would be lower than both the FTA and ambient +10 dBA thresholds; but at location 6, the ambient +10 dBA threshold would be exceeded by 13.7 dBA. During the excavation phase, off-site locations 2 and 3 would be exposed to construction noise levels that would comply with both the FTA and ambient +10 dBA criteria; but location 6 would be expected to experience construction noise exceeding the ambient +10 dBA limit by 3.2 dBA.

Table 3.6-14 presents estimated noise levels at the locations of off-site receptors, as generated by Phase 2 project construction activities at the India Basin Open Space and 700 Innes properties under either the proposed project or the variant. The table shows that the construction noise level at the location of off-site receptor 3 (see Figure 3.6-1) would be below the daytime ambient noise level. However, during the foundation phase of Phase 2 (when pile driving would be used for approximately 27 days), the daytime construction noise level at the location of off-site receptor 6 would exceed the ambient +10 dBA threshold by up to 9.1 dBA. During construction at the India Basin Open Space and 700 Innes properties, construction noise levels at the locations of all off-site receptors would be below FTA's noise limit of 90 dBA.

Table 3.6-13: Predicted Noise Levels at Off-Site Receptors from On-Site Construction at the India Basin Open Space and 700 Innes Properties—Phase 1

Receptor Location[1] and Distance (feet) to Construction Activity	Daytime Ambient Noise Levels, dBA L_{eq}	Estimated Maximum Noise Levels by Construction Activity, dBA L_{eq}					Significance Threshold,[2] dBA L_{eq}	
		Demo/Site Preparation	Grading/ Excavation	Foundation (Pile Driving)	Building Construction	Paving/ Finishes	FTA Criteria	Ambient +10 dBA
2 (985')	61.9	52.1	57.7	68.1	53.3	50.6	90.0	71.9
3 (140')	66.4	69.1	74.6	**85.1**	70.3	67.6	90.0	76.4
6 (320')	54.2	61.9	**67.4**	**77.9**	63.1	60.4	90.0	64.2

Notes:
Boldfaced values indicate exceedance of an applicable significance threshold.
dBA = A-weighted decibels; Demo = demolition; FTA = Federal Transit Administration; L_{eq} = equivalent noise level; N/A = not applicable
[1] See Figure 3.6-1 for receptor locations. Locations 2, 3, and 6 are off-site. Locations 1, 4, and 5 are within the project site; therefore, they are not included in the construction noise analysis.
[2] Significance threshold is based on FTA's general assessment construction noise criteria at residential uses and existing ambient plus 10 dBA (per California Department of Transportation guidelines).
Source: Data compiled by AECOM in 2017

Table 3.6-14: Predicted Noise Levels at Off-Site Receptors and Future On-Site Receptors from On-Site Construction at the India Basin Open Space and 700 Innes Properties—Phase 2

Receptor Location[1] and Distance (feet) to Construction Activity	Daytime Ambient Noise Levels, dBA L_{eq}	Estimated Maximum Noise Levels by Construction Activity, dBA L_{eq}					Significance Threshold,[2] dBA L_{eq}	
		Demo/Site Preparation	Grading/ Excavation	Foundation (Pile Driving)	Building Construction	Paving/ Finishes	FTA Criteria	Ambient +10 dBA
2 (1,840')	61.9	46.7	52.2	62.7	47.9	45.2	90.0	71.9
3 (1,050')	66.4	41.6	47.1	57.6	42.8	40.1	90.0	76.4
6 (540')	54.2	57.4	62.9	**73.3**	58.5	55.9	90.0	64.2
Future On-Site (75')	n/a	74.5	78.8	**90.5**	73.9	72.1	90.0	N/A

Notes:
Boldfaced values indicate exceedance of an applicable significance threshold.
dBA = A-weighted decibels; Demo = demolition; FTA = Federal Transit Administration; L_{eq} = equivalent noise level; N/A = not applicable
[1] See Figure 3.6-1 for receptor locations. Locations 2, 3, and 6 are off-site. Locations 1, 4, and 5 are within the project site; therefore, they are not included in the construction noise analysis. Instead, future on-site receptors are represented as noted
[2] Significance threshold is based on FTA's general assessment construction noise criteria at residential uses and existing ambient noise level plus 10 dBA (per California Department of Transportation guidelines).
Source: Data compiled by AECOM in 2017

The construction noise analysis also addresses potential impacts on future on-site noise-sensitive uses in Phase 1 (e.g., residential and school) that could be occupied during Phase 2 construction at the India Basin Open Space and 700 Innes properties. As indicated in Table 3.6-14, construction noise levels at the locations of the future on-site sensitive receptors during Phase 2 construction would be below the FTA noise limit, except during the foundation phase. During the foundation phase, construction noise levels at the future on-site sensitive uses

(located adjacent to the construction area) would exceed FTA's noise limits by 0.5 dBA because of impact pile-driving activities that are expected to occur for approximately 7 hours per day for 27 days.

Overall Conclusions for On-Site Construction Noise Impacts

900 Innes Property (RPD Phase 1)

As described above, construction of the 900 Innes property (RPD Phase 1) under either the proposed project or the variant would result in a short-term, temporary increase in ambient noise levels in the project vicinity above levels existing without the project. Mitigation Measures M-NO-2a and M-NO-2b, presented below, would be implemented to reduce the construction noise levels at noise-sensitive receptors (off-site locations 2, 3, and 6, and representative future on-site location) to meet FTA's noise limit of 90 dBA and the ambient +10 dBA threshold.

Mitigation Measure M-NO-2a: Implement Noise Control Measures during Project Construction

The project sponsor shall include in all construction contracts a requirement to implement the following noise control measures at all project site properties during construction:

- *Power construction equipment shall be equipped with best available state-of-the-art noise-shielding and muffling devices. All equipment shall be properly maintained to prevent the generation of additional noise attributable to worn or improperly maintained parts.*
- *Stationary-source construction equipment that may have a flexible location on-site (e.g., generators and compressors) shall be located to maintain the greatest feasible distance from sensitive land uses, and unnecessary idling of equipment shall be prohibited.*
- *Where construction activities are to occur within 100 feet of a noise-sensitive receptor, either an existing off-site receptor or a future on-site receptor, a temporary noise barrier that will break the line of sight between the construction equipment and the sensitive receptor shall be placed to provide a minimum of 3-5 dBA noise reduction at the exterior of the noise-sensitive receptor.*

The expectation of 3-5 dBA minimum noise reduction is based on guidance from the Federal Highway Administration (FHWA) Noise Barrier Design Handbook, which under Section 3.5.1 indicates that a 5 dBA insertion loss (IL) "can be expected for receivers whose line-of-sight to the roadway is just blocked by the barrier."[7]

Mitigation Measure M-NO-2b: Implement Noise Control Measures for Pile Driving

The project sponsor shall include in all construction contracts a requirement to implement the following noise control measures for pile driving at all project site properties during construction:

- *When pile driving is to occur within 600 feet of a noise-sensitive receptor (e.g., residential use), alternative quiet-pile driving techniques (i.e., non-impact type) shall be applied in lieu of conventional impact pile driving where feasible (based on soil/strata and other conditions as reviewed by and approved by the project engineer). Alternative quiet-pile driving techniques shall include but are not limited to methods such as screw, auger cast-in-place, or drilled-*

[7] https://www.fhwa.dot.gov/environment/noise/noise_barriers/design_construction/design/design03.cfm

displacement. At the noise-sensitive receptor, noise from non-impact type pile-driving methodology shall not exceed an hourly L_{eq} equal to the applicable ambient + 10 dBA standard.

- *When applied within 600 feet of a noise-sensitive receptor (e.g., residential use), impact-type pile driving equipment shall be properly fitted with an intake and exhaust muffler and a sound-attenuating shroud, as specified by the manufacturer. The net effect of these noise control and sound-attenuating measures, which can also include a temporary sound barrier, shall provide sufficient noise reduction, relative to a non-shrouded operating impact pile-driving process, so that hourly L_{eq} noise from the pile-driving equipment at the noise-sensitive receptor does not exceed the applicable ambient + 10 dBA standard.*

These measures (using alternative non-impact pile driving within 600 feet of a noise-sensitive receptor; or, applying a sound-attenuating shroud (and a temporary noise barrier) on an impact-type pile driver if it must occur within this same distance to a noise-sensitive receptor) would be expected to reduce the construction-related noise at receptor location 3 by a minimum of 15 dBA. This would reduce the noise level to below the ambient +10 dBA threshold. Other projects have been successful in achieving the expected noise level reductions when using a non-impact pile-driving technique or applying a sound-attenuating shroud. For instance:

- The noise level from installing cast-in-situ continuous flight auger piles is approximately 85 dBA at a distance of 10 meters (IHC FUNDEX Equipment, 2017). This noise level translates to 81 dBA at 50 feet, and thus, is 20 dBA quieter than the noise level of 101 dBA at 50 feet for impact-type pile driving as indicated in Table 3.6-10.
- Applying pile-driving shroud effectively reduced sound pressure levels by as much as 16 dBA (Teachout and Cushman, 2005).

- As previously noted from FHWA guidance, a temporary barrier that blocks line-of-sight between the source and a receptor can be expected to yield 5 dBA noise reduction, and approach 10 dBA if the receptor is directly behind the barrier (FHWA, 2017)

Therefore, implementing Mitigation Measures M-NO-2a and M-NO-2b would reduce this impact and the other lesser noise threshold exceedances caused by construction activities at the 900 Innes property (RPD Phase 1) to *less than significant with mitigation*.

India Basin Shoreline Park Property (RPD Phase 2)

Construction at the India Basin Shoreline Park property (RPD Phase 2) under the proposed project or variant would result in a short-term, temporary increase in ambient noise levels in the project vicinity above levels existing without the project. Implementing Mitigation Measures M-NO-2a and M-NO-2b, presented above, would reduce the construction noise level at a noise-sensitive receptor (off-site location 2) to meet the ambient +10 dBA threshold. These mitigation measures—using alternative non-impact pile driving within 600 feet of a noise-sensitive receptor or applying a sound-attenuating shroud if impact-type pile driving must occur within this same distance to a noise-sensitive receptor, and using a temporary noise barrier—would reduce the construction-related noise at receptor location 2 to below the ambient +10 dBA threshold. Therefore, implementing Mitigation Measures M-NO-2a and M-NO-2b would reduce this impact of construction activities at the India Basin Shoreline Park property (RPD Phase 2) to *less than significant with mitigation*.

India Basin Open Space and 700 Innes Properties (Phase 1)

Phase 1 construction at the India Basin Open Space and 700 Innes properties under the proposed project or variant would result in a short-term, temporary increase in ambient noise levels in the project vicinity above levels existing without the project. Implementing Mitigation Measures M-NO-2a and M-NO-2b, presented above, would reduce the construction noise level at noise-sensitive receptors (off-site locations 3 and 6). These mitigation measures—using alternative non-impact pile driving within 600 feet of a noise-sensitive receptor or applying a sound-attenuating shroud if impact-type pile driving must occur within this same distance to a noise-sensitive receptor, and using a temporary noise barrier—would reduce the construction-related noise at receptor locations 3 and 6 by a minimum of 15 dBA. This would reduce the noise level to below the ambient +10 dBA threshold at receptor locations 3 and 6. Therefore, implementing Mitigation Measures M-NO-2a and M-NO-2b would reduce this impact of Phase 1 construction activities at the India Basin Open Space and 700 Innes properties to *less than significant with mitigation*.

India Basin Open Space and 700 Innes Properties (Phase 2)

Phase 2 construction at the India Basin Open Space and 700 Innes properties under the proposed project or variant would generate noise at noise-sensitive receptors exceeding FTA's noise limit and the ambient +10 dBA threshold. Implementing Mitigation Measures M-NO-2a and M-NO-2b, presented above, would reduce the construction noise level at noise-sensitive receptors (off-site and future on-site receptors). These mitigation measures—using alternative non-impact pile driving within 600 feet of a noise-sensitive receptor or applying a sound-attenuating shroud if impact-type pile driving must occur within this same distance to a noise-sensitive receptor, and using a temporary noise barrier—would reduce the construction-related noise at receptor location 6 by a minimum of 15 dBA. This would reduce noise levels to below the ambient +10 dBA threshold at receptor location 6. These same measures would also reduce construction noise at the representative future on-site location to a level below the FTA limit of 90 dBA. Therefore, implementing Mitigation Measures M-NO-2a and M-NO-2b would reduce this impact of Phase 2 construction activities at the India Basin Open Space and 700 Innes properties to *less than significant with mitigation*.

Off-Site Construction Traffic Noise

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Project construction traffic (construction worker vehicles, vendor and haul trucks) would generate noise along the anticipated truck traffic routes. Construction trucks used for export hauling during site grading and excavation would generate the highest noise levels. The haul trucks would likely access the project site via Innes Avenue, Hunters Point Boulevard, Evans Avenue, and Cesar Chavez Street to U.S. Highway 101, or via Innes Avenue, Hunters Point Boulevard, Evans Avenue, Third Street, and Cesar Chavez Street to Interstate 280. No noise-sensitive (i.e., residential) uses are located along Cesar Chavez Street, Third Street, Evans Avenue, and Hunters Point Boulevard. However, residential uses along Innes Avenue would be exposed to the haul trucks.

As described above, an estimated maximum of 26,795 cubic yards of export and 15,395 cubic yards of import (fill) would be required for site grading at the India Basin Shoreline Park and 900 Innes properties. The export and import would occur over approximately 150 days and 43 days, respectively. Site grading at these properties would require approximately 2,382 and 1,366 haul trucks, respectively, for export and import. Based on an 8-hour

work day and uniform distribution, the project would need approximately 2 haul trucks per hour for the export activity and 4 haul trucks per hour for the import activity. The hourly noise level attributable to the export and import for the India Basin Shoreline Park and 900 Innes properties would be 53.2 dBA and 56.2 dBA L_{eq}, respectively. These estimated construction traffic noise levels would be well below the existing ambient noise level along Innes Avenue, 66.4 dBA, as measured at receptor location 3.

As described above, an estimated 350,000 cubic yards of export would be required for site grading at the India Basin Open Space and 700 Innes properties. The proposed project and the variant would require similar amounts of export. Based on the estimated 216 days of hauling, site grading at these two properties would require trucks to haul approximately 1,620 cubic yards per day, or 162 haul truck trips per day (based on a truck capacity of 10 cubic yards). Based on an 8-hour work day and uniform distribution, the project would need approximately 20 haul trucks per hour (generating 40 truck trips) for the export. The hourly noise level attributable to these haul trucks along the construction traffic route during site grading at the India Basin Open Space and 700 Innes properties would be 66.2 dBA L_{eq}. This estimated construction traffic noise level would be consistent with the existing ambient noise level along Innes Avenue, 66.4 dBA, as measured at receptor location 3.

Therefore, for all properties on the project site under both the proposed project and the variant, noise impacts from off-site construction traffic would be would be *less than significant.* No mitigation measures are necessary.

Overall Conclusion for Construction Noise Impacts

The overall construction impact related to a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project would be *less than significant with mitigation*.

Impact NO-3: Noise from stationary sources associated with operation of the proposed project or variant would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. ***(Less than Significant with Mitigation)***

On-Site Stationary Operational Noise

Project-related operational noise impacts associated with on-site stationary sound-producing sources were determined based on the standards set forth in the City's Noise Control Ordinance. Noise from these sources could affect on-site residences at 700 Innes or nearby existing residential uses.

India Basin Shoreline Park Property

The India Basin Shoreline Park property would not include on-site stationary sources, such as building mechanical (i.e., heating, ventilation, and air conditioning [HVAC] equipment) because the proposed developments would be outdoor structures. In addition, this property would not have a loading dock and trash compactor.

900 Innes Property

The 900 Innes property may include on-site stationary sources, such as HVAC equipment. Future on-site residential uses at the northwestern end of the 700 Innes development and nearby existing residential uses could be subject to noise generated by these sources. The HVAC mechanical equipment would typically be located on

building rooftops or in building interiors, and be designed with appropriate noise-control devices, such as sound screen/parapet walls, to comply with the City's Noise Control Ordinance and avoid exceeding the ambient noise levels at the property plane by 5 dBA for residential land uses or 8 dBA for commercial and industrial land uses. For stationary mechanical equipment like HVAC systems, acoustical treatments to limit noise may include but are not limited to:

- constructing enclosures (preferably with acoustically absorptive equipment-facing interior surfaces) around noise-generating mechanical equipment;
- installing relatively quiet models of mechanical equipment (product designs that incorporate noise-reducing features such as low-speed rotating equipment [fans, motors, pumps, compressors, etc.]);
- using a muffler or silencers on equipment engine exhaust or heat dissipation fans;
- orienting noise-emitting equipment openings (e.g., outside air intakes on air handling units) away from the direction of noise-sensitive land uses and receptors to the greatest extent feasible; and,
- inserting barriers between operating equipment and nearest noise-sensitive receptors.

India Basin Open Space Property

The India Basin Open Space property would be mainly open space, with approximately 2,000 square feet of commercial uses. The proposed commercial uses would include HVAC equipment. As described above, all building mechanical equipment would be designed with appropriate noise-control devices, as required to comply with Section 2909 of the City's Noise Control Ordinance and avoid exceeding the ambient noise levels by 5 dBA at the property plane for residential land uses or 8 dBA for commercial and industrial land uses.

700 Innes Property

The proposed development at the 700 Innes property would include various typical on-site stationary sources, including building HVAC equipment, loading dock activities, and trash collection. Some or all of these operating systems may generate noise that could be audible to new on-site residences associated with the property. The HVAC mechanical equipment would typically be located on building rooftops or in building interiors, and must be shielded from nearby noise-sensitive land uses to attenuate noise and avoid conflicts with adjacent uses. In addition, all building mechanical equipment must be designed with appropriate noise-control devices, such as sound screen/parapet walls, to comply with the Noise Control Ordinance and avoid exceeding the ambient levels by 8 dBA at the property plane of commercial properties or 5 dBA at the property plane of commercial land uses.

Loading dock and trash compactor operations would generate noise levels of approximately 71 dBA L_{eq} and 65 dBA L_{eq}, respectively, at a distance of 50 feet. In addition, the design and placement of the loading dock and trash compactor would include barriers and/or shielding, as required to meet the limit of 75 dBA at a distance of 50 feet established by Section 2904 of the Noise Control Ordinance.

Overall Conclusions for On-Site Stationary Operational Noise Impacts

India Basin Shoreline Park Property

Operational noise impacts at the India Basin Shoreline Park property from project-related on-site stationary sources would be *less than significant.* No mitigation measures are necessary.

900 Innes Property

Mitigation Measure M-NO-3, presented below, would be implemented at the 900 Innes property, to reduce operational noise impacts from project-related on-site stationary sources.

> **Mitigation Measure M-NO-3: Design Future Noise-Generating Uses near Residential Uses to Minimize the Potential for Noise Conflicts**
>
> *Future noise-generating land uses shall be designed to minimize the potential for sleep disturbance at any future nearby residential uses (700 Innes) or existing nearby offsite residential receptors. Design approaches such as the following could be incorporated into future development plans for future noise-generating land uses to minimize the potential for noise conflicts from such uses with on-site sensitive receptors.*
>
> - ***Design of Future Noise-Generating Uses.*** *To reduce potential conflicts between sensitive receptors and new noise-generating land uses located adjacent or nearby 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 (residences). If this is not feasible, these types of facilities shall be enclosed or equipped with appropriate noise shielding.*
> - ***Stationary Equipment Noise Controls.*** *Noise attenuation measures shall be incorporated into all stationary equipment (including HVAC equipment, and emergency generators if present) installed on all buildings that include such stationary equipment. These noise attenuation measures shall be incorporated 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 can include providing sound enclosures/barriers, adding roof parapets to block noise, increasing setback distances from sensitive receptors, providing louvered vent openings, locating vent openings away from adjacent commercial uses, and restricting generator testing to the daytime hours.*

Incorporating noise attenuation measures at future residential land uses as described in Mitigation Measure M-NO-3 would ensure that noise from loading, trash collection, and stationary equipment would not exceed the noise level limits established by the City's Noise Ordinance: 75 dBA at 50 feet (Section 2904 of the Noise Ordinance), 5 dBA and 8 dBA at residential and commercial property lines, respectively (Sections 2909[a] and 2909[b]), and residential interior daytime and nighttime noise limits of 55 dBA and 45 dBA, respectively (Section 2909[d]). Therefore, implementing Mitigation Measure M-NO-3 would reduce this impact to *less than significant with mitigation*.

India Basin Open Space and 700 Innes Properties

Implementing Mitigation Measure M-NO-3 as presented above would reduce operational noise impacts at the India Basin Open Space and 700 Innes property properties from project-related on-site stationary sources to *less than significant with mitigation*.

Impact NO-4: Noise from surface transportation sources associated with operation of the proposed project or variant would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. *(Significant and Unavoidable)*

Off-Site Mobile Operational Noise

Implementing the proposed project or the variant would result in additional vehicle trips in the project vicinity. The increase in traffic volumes was analyzed to determine whether any traffic-related noise impacts would result from the proposed project or variant.

The City does not have noise regulations for traffic traveling on public roadways. Therefore, the threshold for evaluating potential impacts of project-related mobile sources (roadway traffic) is based on the change in ambient noise levels attributable to the project in conjunction with the City's land use compatibility guidelines. Generally, a noise-level change of less than 3 dBA is not perceptible in an outdoor environment, whereas a 5-dBA increase is readily perceptible. Based on this information, significant off-site noise impacts would occur if the project-related traffic would increase the ambient noise levels under future conditions by either:

- +5 dBA (in L_{dn}), and the resulting noise would fall within the "satisfactory" category (i.e., per the San Francisco Land Use Compatibility Chart for Community Noise shown in Table 3.6-9); or,
- +3 dBA, and the resulting noise would fall above the "satisfactory" land use compatibility category.

The project-related traffic noise impact is determined by comparing the noise levels under the "baseline without project" scenario to the noise levels under the "baseline with project" scenario and applying the project's 3 dBA and 5 dBA significance thresholds.

Table 3.6-15 summarizes the analysis of off-site roadway noise impacts. As shown, the proposed project would result in traffic noise increases ranging from 0.8 dBA on Evans Street west of Third Street to 16.0 dBA along Arelious Walker Drive north of Innes Avenue. The variant would result in traffic noise increases ranging from 1.1 dBA on Evans Street west of Third Street to 17.4 dBA along Arelious Walker Drive north of Innes Avenue.

Incremental changes in traffic noise levels attributable to the proposed project or the variant would exceed the 3 dBA and 5 dBA L_{dn} significance thresholds at some of the analyzed roadway segments. Most of the daily traffic trips would be generated by the 700 Innes development.

Overall Conclusion for Off-Site Mobile Operational Noise Impacts

Based on predicted operational impacts at the 700 Innes property associated with an increase in off-site traffic and associated noise under either the proposed project or the variant, the overall operational impact related to a substantial permanent increase in ambient noise levels in the project vicinity above levels that would exist without the project would be *significant and unavoidable*. As the proposed project or variant is constructed in phases, new

occupants or workers at and adjacent to the project site will be exposed to temporary noise from construction activities including vehicles going to and from the construction area. Typically, mitigation measures for reducing such transportation noise as heard by existing noise-sensitive community receivers, would entail designing and placing barriers along transportation corridors. Such measures are considered infeasible here because they would (as a consequence) likely block access to private property and conflict with urban design policies. To be effective in providing a noise reduction benefit, soundwalls generally need to be contiguous and free of penetrations for purposes such as access to residential driveways. Further, sound walls are not a practical design solution along urban streets that are designed to have frontages visible from the street to create a visually attractive street corridor, especially where groundfloor commercial uses and an appealing pedestrian environment are encouraged.

Table 3.6-15: Roadway Traffic Noise Impacts

Roadway Segment	Adjacent Land Uses	Calculated Traffic Noise Levels[1] (dBA L_{dn})			Noise Exposure Compatibility Category[2]			Increase in Noise Levels Attributable to the Project[3] (dBA L_{dn})	
		Baseline	Baseline + Proposed Project	Baseline + Variant	Baseline	Baseline + Proposed Project	Baseline + Variant	Proposed Project	Variant
Evans Street									
West of Third Street	Industrial	65.9	66.7	67.0	1	1	1	0.8	1.1
Between Third Street and Jennings Street	Commercial, School	65.1	68.8	69.7	2	2	2	**3.7**	**4.6**
Hunters Point Boulevard									
Between Jennings Street and Innes Avenue	Parks	63.1	69.8	71.1	1	3	3	**6.7**	**8.0**
Innes Avenue									
West of Hunters Point Boulevard	Residential	58.1	64.7	65.6	1	2	2	**6.6**	**7.5**
Between Hunters Point Boulevard and Griffith Street	Residential	63.7	71.9	72.9	2	3	3	**8.2**	**9.2**
Between Griffith Street and Arelious Walker Drive	Residential	63.5	71.1	72.7	2	3	3	**7.6**	**9.2**
Between Arelious Walker Drive and Earl Street	Residential	63.3	68.3	69.7	2	2	2	**5.0**	**6.4**
East of Earl Street	Residential	63.4	63.9	63.9	2	2	2	0.5	0.5
New Griffith Street									
North of Innes Avenue	Residential (proposed)	N/A[4]	62.0	63.1	N/A[4]	2	2	N/A[4]	N/A[4]
Arelious Walker Drive									
North of Innes Avenue	Residential (proposed), Open Space	50.1	66.1	67.5	1	2	2	**16.0**	**17.4**
Earl Street									
North of Innes Avenue	Residential (proposed)	N/A[4]	64.9	65.8	N/A[4]	2	2	N/A[4]	N/A[4]
Third Street									
North of Evans Avenue	Commercial	67.3	68.7	69.2	1	1	1	1.4	1.9
South of Evans Avenue	Commercial	66.2	69.3	70.2	1	1	1	3.1	4.0

Table 3.6-15: Roadway Traffic Noise Impacts

Roadway Segment	Adjacent Land Uses	Calculated Traffic Noise Levels[1] (dBA L_{dn})			Noise Exposure Compatibility Category[2]			Increase in Noise Levels Attributable to the Project[3] (dBA L_{dn})	
		Baseline	Baseline + Proposed Project	Baseline + Variant	Baseline	Baseline + Proposed Project	Baseline + Variant	Proposed Project	Variant
Jennings Street									
North of Evans Avenue	Industrial	57.1	64.5	65.6	1	1	1	**7.4**	**8.5**
South of Evans Avenue (Middle Point Road)	Residential	63.7	69.6	71.1	2	2	3	**5.9**	**7.4**

Notes:
dBA = A-weighted decibels; L_{dn} = day-night level; N/A = not applicable
[1] Predicted traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.
[2] The indicated noise exposure compatibility is based on the most stringent land use category, pursuant to the *San Francisco General Plan* Land Use Compatibility Chart, as follows:
1: Satisfactory, with no special insulation requirements.
2: 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.
3: 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.
4: New construction or development should generally not be undertaken.
[3] An increase of 3 dBA is considered a significant impact where the existing/baseline noise environment is other than satisfactory (i.e., 2, 3 or 4) or an increase of 5 dBA for all noise exposure category (i.e., 1, 2, 3 or 4). **Boldfaced type** indicates a significant impact.
[4] Not applicable, as the roadway segment does not exist or is a private driveway under existing/baseline conditions.
Source: Data modeled by AECOM in 2016

Impact NO-5: The occupants of the proposed project or variant site would not be substantially affected by future noise levels on the site. ***(Less than Significant)***

Future Operational Noise

The proposed project and the variant include various types of development (e.g., residential, retail/commercial, institutional/education, and recreation uses). Therefore, at all properties on the project site, a significant noise impact would occur if the ambient noise levels at the project site would increase above existing ambient sound levels by more than 5 dBA, or would increase by more than 3 dBA and exceed the "satisfactory" category, as established in the City's land use noise compatibility guidelines.

The City's land use noise compatibility guidelines (presented in Table 3.6-9) state that residential and hotel uses are considered satisfactory in areas with a noise level of 60 dBA L_{dn} or less; schools are considered satisfactory in areas with a noise level of 65 dBA L_{dn} or less; and playgrounds, parks, offices, and retail/commercial uses are considered satisfactory in areas with noise levels of 70 dBA L_{dn} or less. This impact analysis pertains to the project's future noise-sensitive uses (residential). For informational purposes, increases to the ambient sound environment at future commercial land uses that can be attributed to the proposed project or variant are also analyzed.

India Basin Shoreline Park Property

The India Basin Shoreline Park property would be exposed to a traffic noise level of 69.8 dBA L_{dn} with the proposed project or 71.1 dBA L_{dn} with the variant, based on the predicted traffic noise along Hunters Point Boulevard between Jennings Street and Innes Avenue under baseline with-project condition (Table 3.6-15). The predicted traffic noise levels are for 50 feet from the roadway centerline. The traffic noise level under the variant would attenuate to below 70 dBA L_{dn} at 60 feet from the centerline, which would be considered the "satisfactory land use" category for park use, pursuant to the City's guidelines. No residential units or occupants are proposed for the India Basin Shoreline Park property; therefore, no sensitive uses would be present. This discussion is provided for informational purposes only.

900 Innes Property

Based on the modeled traffic noise along Innes Avenue between Hunters Point Boulevard and New Griffith Street, the 900 Innes property would be exposed to a traffic noise level of 71.9 dBA L_{dn} under the baseline with-proposed-project scenario or 72.9 dBA L_{dn} under the baseline with-variant scenario. These predicted traffic noise levels at the 900 Innes property would exceed the "satisfactory land use" category for the proposed commercial use, pursuant to the City's guidelines.

Given the expected commercial usage of this property, the proposed project or variant would be required to provide noise insulation for the proposed building (to avoid exceeding a 50 dBA L_{eq} exterior-to-interior noise intrusion) as part of the project's compliance with the California Green Building Standards Code. This requirement would be enforced through the building permit application process. No residential units or occupants are proposed for the 900 Innes property; therefore, no sensitive uses would be present. This discussion is provided for informational purposes only.

India Basin Open Space Property

The India Basin Open Space property would be exposed to traffic noise levels of 66.1 dBA L_{dn} under the proposed project or 67.5 dBA L_{dn} under the variant, based on the predicted traffic noise along Arelious Walker Drive north of Innes Avenue. The predicted traffic noise levels at this property would be below the "satisfactory land use" category for the proposed commercial use. No residential units or occupants are proposed for the India Basin Open Space property; therefore, no sensitive uses would be present. This discussion is provided included for informational purposes only.

700 Innes Property

As shown in Table 3.6-15, estimated traffic noise levels along the roadway segments adjacent to the 700 Innes property would range from 62.0 dBA L_{dn} (for the proposed project) along New Griffith Street north of Innes Avenue to 72.7 dBA L_{dn} (for the variant) along Innes Avenue between New Griffith Street and Earl Street. These noise levels would exceed the noise levels in the City's "satisfactory land use" category for residential, school, office, and commercial development. Additionally, and as mentioned under Impact NO-4, the proposed project or variant would result in traffic noise increases at new residential land uses along Arelious Walker Drive (north of Innes Avenue) of 16.0 and 17.4, respectively, and would also exceed the City's compatibility guidelines.

Therefore, for residential building uses, a detailed analysis of noise reduction would be required and incorporated into the project design, to reduce the exterior noise intrusion to a level of 45 dBA L_{dn} at the interior of habitable rooms, as required by the CBC.[8] To meet this CBC requirement, the proposed building façades—including exterior walls and windows—would require a minimum noise reduction of 20–25 dBA (based on the aforementioned range of anticipated baseline-plus-proposed-project and baseline-plus-variant noise levels).

Typical new construction, including light-framed buildings featuring storm windows, would provide a minimum of 25 dBA noise reduction (FHWA, 2011). In addition, the proposed project and variant would be required to provide noise insulation for the proposed commercial building uses (to avoid exceeding a 50 dBA L_{eq} exterior-to-interior noise intrusion) as part of compliance with the California Green Building Standards Code. This requirement would be enforced through the building permit application process.

Overall Conclusions for Future Operational Noise Impacts

India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties

No residential uses are proposed at the India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties; therefore, noise impacts at these properties related to land use noise compatibility would be *less than significant.* No mitigation measures are necessary.

700 Innes Property

The proposed project or variant would apply standard building practices compliant with the CBC at future residential land uses on the 700 Innes property. These building practices would result in adequate exterior-to-interior sound insulation and interior background noise levels that would not exceed 45 dBA L_{dn}. This impact would be *less than significant*. No mitigation measures are necessary.

[8] 2013 California Building Standards Code, Section 1207 Sound Transmission, July 1, 2015 Supplement, 2015.

Impact NO-6: The proposed project or variant would result in exposure of persons to or generate excessive groundborne vibration. ***(Less than Significant with Mitigation)***

The following impact discussion describes the impacts of project construction and project operation related to groundborne vibration, including potential impacts on historic buildings on the project site. Separate impact analyses are provided for construction-related and operational vibration impacts. An "overall" impact conclusion is provided at the end of the impact discussion.

Construction Vibration

Construction activities for the proposed project and the variant would use earthmoving construction and impact equipment (e.g., excavator, bulldozer, drill rigs, pile driver). Such equipment could generate excessive groundborne vibration and noise levels at the existing nearby sensitive uses (i.e., residences). Project construction activities would be limited to the daytime hours (i.e., 8 a.m. to 6 p.m.), thereby avoiding the typical normal sleeping hours (i.e., nighttime hours).

FTA has published reference vibration velocities associated with operation of several types of construction equipment. Table 3.6-16 lists the vibration levels generated by typical construction equipment likely to be used during project construction. At 25 feet from the equipment, construction equipment could generate groundborne vibration at levels ranging from approximately 0.003 PPV (58 VdB) from a small bulldozer to 1.518 PPV (112 VdB) from an impact pile driver (FTA, 2006).

Table 3.6-16: Vibration Levels Generated by Typical Construction Equipment

Construction Equipment	FTA Vibration Levels at 25 Feet[1]		Estimated Vibration Levels at Various Distances,[2] VdB			
	PPV (in/sec)	VdB	50 Feet	100 Feet	200 Feet	300 Feet
Pile Driver—Impact	1.518	112	103	94	85	80
Pile Driver—Sonic	0.734	105	98	89	80	75
Vibratory Roller	0.210	94	85	76	67	62
Caisson Drilling	0.089	87	78	69	60	55
Large Bulldozer	0.089	87	78	69	60	55
Loaded Trucks	0.076	86	77	68	59	54
Jackhammer	0.035	79	70	61	52	47
Small Bulldozer	0.003	58	49	40	31	26
Significance Thresholds						
Building Damage (Off-site structures)	0.20	94	94	94	94	94
Building Damage (On-site historic structures)	0.12	90	90	90	90	90
Human Annoyance (residential use)	–	80	80	80	80	80

Notes: FTA = Federal Transit Administration; in/sec = inches per second; PPV = peak particle velocity; VdB = vibration decibels
[1] FTA reference vibration levels at a distance of 25 feet.
[2] Calculated vibration levels using procedures, provided in FTA's *Transit Noise and Vibration Impact Assessment*.
Sources: FTA, 2006; data compiled by AECOM in 2016

To present a conservative analysis, the vibration levels for a pile driver represent the upper range. Pile-driving crews for the project would usually work 10 hours per day; however, the actual pile-driving operation would occur for approximately 7 hours per day on 12 days during Phase 1 and 27 days during Phase 2. In addition, only one pile driver would operate at any given time.

India Basin Shoreline Park Property

The nearest off-site building structure to the India Basin Shoreline Park property is located on Hawes Street, approximately 140 feet to the southwest. As shown in Table 3.6-16, vibration levels generated by the construction equipment would be below the threshold for potential structural damage of 0.2 in/sec PPV or 94 VdB (applicable to non-engineered timber and masonry buildings) at a distance of 100 feet. The nearest off-site noise-sensitive use is the residence located on Innes Avenue (location 2 in Figure 3.6-1), approximately 420 feet from the nearest construction area. Therefore, the vibration levels from the construction equipment would be well below the impact threshold associated with human annoyance, 80 VdB.

900 Innes Property

The nearest off-site structure to the 900 Innes property is considered a "non-engineered timber and masonry building" (per the FTA building category) and is located on the north side of Innes Avenue adjacent to the property, approximately 25 feet from the nearest construction area. The estimated vibration levels generated by pile driving (impact and vibratory) would exceed the building damage threshold (for a building of this FTA category) of 0.2 in/sec PPV or 94 VdB at the nearest off-site building structure.

The existing on-site Shipwright's Cottage (a historic structure) located on the 900 Innes property would remain during project construction. Vibration levels associated with heavy construction and pile driving would exceed the building damage threshold of 0.12 in/sec PPV or 90 VdB at this historic structure.

The nearest off-site noise-sensitive use is the residence located on the south side of Innes Avenue (location 3 in Figure 3.6-1), approximately 80 feet from the nearest construction area. At this location, the vibration levels from the construction equipment (i.e., impact and vibratory pile driving) would exceed the impact threshold associated with human annoyance, 80 VdB. However, whenever pile driving would be expected to occur with 150 feet of a residential use, the San Francisco Planning Department shall determine—on the basis of duration of the activity and time of day—whether or not ground-borne vibration levels would be considered excessive and require mitigation. For such instances when mitigation is needed, Mitigation Measure M-NO-6, presented below, would be implemented to reduce the vibration levels generated by pile driving to meet the FTA criteria for both building damage and human annoyance.

Mitigation Measure M-NO-6: Implement Vibration Mitigation Measure for Pile Driving

The project sponsor shall implement the following vibration control measure for pile driving during project construction:

- *When pile driving is to occur within 150 feet of a noise-sensitive receptor (e.g., residential use), alternative low-vibration driving techniques (i.e., non-impact type) shall be applied in lieu of conventional impact pile driving where feasible, based on soil/strata and other conditions as*

reviewed by and approved by the project engineer. Alternative pile driving techniques shall include but are not limited to methods such as screw, auger cast-in-place, or drilled displacement.

- *If the receiving land use is a historic structure, the project sponsor shall implement vibration monitoring during the vibration-causing process and/or equipment to ensure that measured levels (e.g., vibration velocity) at the receptor are compliant with the 0.12 in/sec peak particle velocity (PPV) standard. If measured vibration levels are found to exceed this standard, the process shall be suspended to assess the occurrence of damage and implement vibration isolation enhancements (e.g., trenches, shoring, etc.) as deemed necessary to enable compliant vibration levels upon resumption of activity. If damage to a building(s) occurs, the building(s) shall be remediated to its pre-construction condition at the conclusion of ground-disturbing activity.*

The recommended use of alternative non-impact pile driving within 150 feet of a vibration-sensitive receptor would be expected to reduce vibration propagation to acceptable levels. For example, a screw-type pile method ("Tubex") is expected to exhibit 0.05 in/sec PPV at a reference distance of 25 feet (Caltrans, 2013b), which is far less than the PPV indicated for impact or vibratory-type pile driving techniques listed in Table 3.6-16.

Please refer to Mitigation Measure M-CR-1e in Section 3.4 "Cultural Resources" for additional mitigation with regard to vibration impacts related to historic structures.

India Basin Open Space Property

The nearest off-site building structure to the India Basin Open Space property is the residential building located on the northwest corner of Arelious Walker and Innes Avenue, approximately 150 feet from the construction area. The vibration levels at 150 feet from construction equipment would range from 56 VdB (jackhammer) to 89 VdB (impact pile driving). Therefore, vibration levels generated by the construction equipment would be below the potential damage threshold of 0.2 in/sec PPV or 94 VdB at a distance of 100 feet (see Table 3.6-16). However, the vibration levels at 150 feet from construction equipment (impact and vibratory pile driving) would exceed the impact threshold of 80 VdB applicable to human annoyance. Implementing Mitigation Measure M-NO-6 would reduce the vibration levels generated by pile driving to meet the FTA criteria for both building damage and human annoyance.

700 Innes Property

Residential building structures are located along the north side of Innes Avenue adjacent to the 700 Innes property. As shown in Table 3.6-16, the groundborne vibration levels for earthmoving equipment (e.g., large bulldozer) at 25 feet would be below the building-damage threshold of 0.2 in/sec PPV (94 VdB). However, the vibration level generated by a pile driver (impact or sonic type) would exceed the building-damage threshold at a distance of 25 feet, resulting in a significant impact.

With respect to human annoyance, the groundborne vibration generated by construction equipment at a distance of 25 feet would exceed the 80 VdB criterion (standard for human annoyance) for residential receptors along Innes Avenue. The estimated groundborne vibration from the impact-type pile driver would be reduced to approximately 80 VdB, the vibration limit for residential use, at a distance of approximately 300 feet.

Implementing Mitigation Measure M-NO-6 would reduce the vibration levels generated by pile driving to meet the FTA criteria for both building damage and human annoyance.

Overall Conclusions for Construction Vibration Impacts

India Basin Shoreline Park Property

Potential construction vibration impacts at the India Basin Shoreline Park property would be less than significant. No mitigation measures are necessary.

900 Innes, India Basin Open Space, and 700 Innes Properties

Implementing Mitigation Measure M-NO-6 would reduce the magnitude of the groundborne vibration impact of construction activities at the 900 Innes, India Basin Open Space, and 700 Innes properties to *less than significant with mitigation.*

Operational Vibration

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Vibration during project operation would be limited to typical residential and commercial HVAC equipment, and vehicles traveling on local roadways and in parking structures. HVAC equipment would typically incorporate vibration isolation mounts in accordance with the equipment specifications to minimize vibration in the buildings. In addition, vibration levels would attenuate rapidly as a function of distance from the vibration sources. Roadway traffic would not generate high levels of vibration. Therefore, for all properties on the project site, operational vibration impacts associated with the proposed project and variant would be *less than significant.* No mitigation measures are necessary.

Overall Conclusion for Vibration Impacts

Without mitigation, groundborne construction vibration, particularly during pile driving, is anticipated to result in a significant impact for three of the four properties studied for the proposed project and variant. With Mitigation Measure M-NO-6, groundborne vibration associated with the equipment expected to operate under the proposed project or variant is not anticipated to reach a significant impact level. Hence, both construction-related and operational impacts of both the proposed project and variant related to groundborne vibration would be *less than significant with mitigation*.

3.6.5 Cumulative Impacts

Impact-C-NO-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would substantially contribute to cumulative impacts related to noise. ***(Significant and Unavoidable)***

The following cumulative impact discussion describes the cumulative impacts of the project and past, present, and reasonably foreseeable future projects in the vicinity related to construction noise, operational noise, and construction-related and operational vibration. Separate impact analyses are provided for each topic, with an

"overall" impact conclusion, which represents the most severe CEQA impact conclusion of the studied topics, provided at the end of the impact discussion.

The geographic context for the analysis of cumulative noise impacts varies based on the type of noise impact being analyzed. For construction-related and operational stationary-source noise impacts, only the area in the vicinity of the project site could contribute to the cumulative impacts, as noise impacts are typically localized. For example, construction noise dissipates/attenuates quickly with increased distance between the construction site and the receptor, and intervening structures provide noise reduction. As a result, only those projects within 1,000 feet of the project site were considered for the analysis of cumulative construction noise impacts.

The geographic context for the analysis of cumulative operational mobile-source (i.e., roadway) noise impacts is defined as the immediate area surrounding the roadways that would be affected by implementation of the proposed project or variant, as well as cumulative development. The potential cumulative operational impacts related to roadway noise were analyzed based on the future traffic condition in the year 2040 (by which time the proposed project or variant would already be completed), which includes both regional growth and the approved developments.

Construction Noise

Based on review of the cumulative-projects list (see Table 3-1 in Section 3.0.1, "Format of the Environmental Analysis," of this EIR), three cumulative projects are within 1,000 feet of the project site:

- *Candlestick Point–Hunters Point Shipyard (Phases I and II),* a mixed-use development project with a wide range of residential, office, research and development, civic and community uses, and parks and recreational open space (San Francisco, 2009);
- *Blue Greenway/Bay Trail,* a project to improve and expand the public open space network along the City's central and southern waterfront (SF Port and SFPW BLA, 2010); and
- *Hunters View,* a project that would replace 267 existing public housing units with a mixed-income community comprising for-rent and for-sale units, as well as public housing units (San Francisco, 2008).

Because the timing of the construction activities for these cumulative projects cannot be defined, any quantitative analysis that assumes multiple, concurrent construction projects would be entirely speculative.

Construction activities from the cumulative projects would generate noise at each project site, and cumulative construction noise could exceed ambient noise levels at the nearest sensitive uses. Existing noise-sensitive uses, such as receptor location 6 shown in Figure 3.6-1, are located within 500 feet of the project site and the Candlestick Point–Hunters Point Shipyard site. As discussed previously (Impact NO-2), the estimated project-related construction noise levels at receptor location 6 would exceed the ambient noise levels by more than 10 dBA. Therefore, if the proposed project or variant and the Candlestick Point–Hunters Point Shipyard project were to be constructed concurrently, cumulative construction noise levels would exceed the ambient +10 dBA significance threshold at receptor location 6.

In addition, noise receptor location 2 is located within 500 feet from the site of the proposed project or variant and the Hunters View project site. As analyzed previously (Impact NO-2), the estimated project-related construction noise level at receptor location 2 would exceed the ambient noise level by more than 10 dBA. Thus, construction

noise impacts resulting from both projects would be cumulatively considerable and would be considered significant.

Construction activities at each cumulative project would be required to comply with the City's noise limit for the construction equipment (i.e., 80 dBA), the time restriction (7 a.m. to 8 p.m.), and the mitigation measures provided for each project. In addition, noise levels from construction activities would be intermittent and temporary, and would cease at the end of the construction phase.

The cumulative off-site construction traffic from the proposed project and the cumulative projects could generate noise along the construction truck routes with noise-sensitive receptors (i.e., Innes Avenue between Hunters Point Boulevard and Earl Street). The cumulative construction traffic noise along Innes Avenue could reach up to 70.7 dBA L_{eq} with 111 truck trips per hour. Therefore, the construction truck noise level along Innes Avenue would not exceed the ambient noise level of 66.4 dBA (along Innes Avenue) by more than 5 dBA.

Operational Noise

Cumulative operational noise would be generated by both on-site sources (e.g., mechanical equipment) and off-site sources (e.g., auto traffic). On-site noise sources, such as mechanical equipment from the proposed project or variant and other projects, would be required to comply with the City's Noise Control Ordinance; therefore, the aforementioned Mitigation Measure M-NO-3 would apply. However, off-site automobile traffic from the proposed project or variant together with other projects could contribute to the overall cumulative noise level along nearby roadway segments.

Table 3.6-17 summarizes the analysis of cumulative off-site roadway noise impacts. The adjacent land uses associated with the studied roadway segments are the same as those presented in Table 3.6-15 and are not repeated in Table 3.6-17. As shown, the proposed project plus the cumulative projects would result in increases in traffic noise levels ranging from 3.3 dBA on Jennings Street north of Evans Avenue to 15.7 dBA along Arelious Walker Drive north of Innes Avenue. The variant plus the cumulative projects would result in increases in roadway traffic noise ranging from 3.6 dBA on Jennings Street north of Evans Avenue to 17.0 dBA along Arelious Walker Drive north of Innes Avenue. The incremental changes in traffic noise levels attributable to the proposed project or the variant would exceed the significance threshold of 3 dBA L_{dn} at some of the analyzed roadway segments.

Table 3.6-17 also indicates that either the proposed project or the variant would make a cumulatively considerable contribution to the future outdoor ambient sound environment at several of the analyzed roadway segments. A cumulatively considerable contribution to a cumulative impact would occur if the proposed project or variant would contribute a 3 dBA increase to a cumulative impact where the resultant cumulative plus-project noise levels would be greater than 60 dBA L_{dn}, or a 5 dBA increase where the resultant cumulative plus-project noise levels would be less than 60 dBA L_{dn}.

No feasible mitigation measures are available to reduce the significant cumulative noise impact along the affected roadway segments, because the affected properties are privately owned, thereby creating access constraints and limitations relative to mitigation design and implementation.

Construction Vibration

Potential vibration impacts attributable to construction activities such as pile driving are generally limited to buildings and structures located close to the construction site.

Operational Vibration

As described above, both the proposed project and the variant would include typical residential and commercial-grade HVAC equipment, which would produce limited vibration.

Table 3.6-17: Cumulative Roadway Traffic Noise Impacts

Roadway Segment	Calculated Traffic Noise Levels[1] (dBA L_{dn})				Increase in Noise Levels Attributable to Cumulative Traffic[2] (dBA L_{dn})			Noise Level Difference (dB) between Cumulative without and with Project,(Cumulatively Considerable Project Contribution to Cumulative Impact? yes/no)[4]	
	Existing	Cumulative	Cumulative + Proposed Project	Cumulative + Variant	Cumulative - Existing	Cumulative + Proposed Project	Cumulative + Variant	Proposed Project	Variant
Evans Street									
West of Third Street	65.8	69.4	70.8	70.9	3.6	**5.0**	**5.1**	1.4 (no)	1.5 (no)
Between Third Street and Jennings Street	64.5	69.5	71.1	71.6	5.0	**6.6**	**7.1**	1.6 (no)	2.1 (no)
Hunters Point Boulevard									
Between Jennings Street and Innes Avenue	61.9	69.1	71.8	72.5	8.0	**9.9**	**10.6**	1.9 (no)	2.6 (no)
Innes Avenue									
West of Hunters Point Boulevard	57.0	57.2	64.6	65.5	0.2	**7.6**	**8.5**	**7.4 (yes)**	**8.3 (yes)**
Between Hunters Point Boulevard and Griffith Street	61.9	68.8	73.5	74.2	6.9	**11.6**	**12.3**	**4.7 (yes)**	**5.4 (yes)**
Between Griffith Street and Arelious Walker Drive	62.0	69.3	73.4	74.3	7.3	**11.4**	**12.3**	**4.1 (yes)**	**5.0 (yes)**
Between Arelious Walker Drive and Earl Street	61.6	69.3	72.1	72.6	7.7	**10.5**	**11.0**	2.8 (no)	**3.3 (yes)**
East of Earl Street	62.1	69.7	71.3	71.3	7.6	**9.2**	**9.2**	1.6 (no)	1.6 (no)
New Griffith Street									
North of Innes Avenue	N/A[3]	49.7	61.8	62.8	N/A[3]	N/A[3]	N/A[3]	N/A[3]	N/A[3]
Arelious Walker Drive									
North of Innes Avenue	50.1	52.0	65.8	67.1	1.9	**15.7**	**17.0**	**13.8 (yes)**	**15.1 (yes)**
Earl Street									
North of Innes Avenue	N/A[3]	49.7	64.5	65.4	N/A[3]	N/A[3]	N/A[3]	N/A[3]	N/A[3]
Third Street									
North of Evans Avenue	67.1	69.5	70.4	70.7	2.4	3.3	3.6	0.9 (no)	1.2 (no)
South of Evans Avenue	65.7	69.9	71.4	71.9	4.2	5.7	6.2	1.5 (no)	2.0 (no)

Table 3.6-17: Cumulative Roadway Traffic Noise Impacts

Roadway Segment	Calculated Traffic Noise Levels[1] (dBA L_{dn})				Increase in Noise Levels Attributable to Cumulative Traffic[2] (dBA L_{dn})			Noise Level Difference (dB) between Cumulative without and with Project,(Cumulatively Considerable Project Contribution to Cumulative Impact? yes/no)[4]	
	Existing	Cumulative	Cumulative + Proposed Project	Cumulative + Variant	Cumulative - Existing	Cumulative + Proposed Project	Cumulative + Variant	Proposed Project	Variant
Jennings Street									
North of Evans Avenue	56.7	59.0	64.9	65.8	2.3	**8.2**	**9.1**	**5.9 (yes)**	**6.8 (yes)**
South of Evans Avenue (Middle Point Road)	62.9	66.9	71.5	72.5	7.0	**8.6**	**9.6**	1.6 (no)	2.6 (no)

Notes:
Bold values indicate exceedance of an applicable significance threshold.
dBA = A-weighted decibels; L_{dn} = day-night level; N/A = not applicable
[1] Predicted traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.
[2] An increase of 3 dBA is considered a significant impact where the existing/baseline noise environment is other than satisfactory (i.e., 2, 3 or 4) or an increase of 5 dBA for all noise exposure category (i.e., 1, 2, 3 or 4). **Boldfaced** type indicates a significant impact.
[3] Not applicable, as the roadway segment does not exist or is a private driveway under existing/baseline conditions.
[4] Cumulatively considerable contribution to a cumulative impact occurs if the project or variant 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}.
Source: Data modeled by AECOM in 2017

Overall Conclusions for Cumulative Impacts

Noise

Cumulative construction-related noise impacts from off-site construction traffic would be *less than significant*, and cumulative construction activity noise may be *significant* depending on site-specific factors such as proximity to the project or variant noise-sensitive receptors and the application of appropriate noise mitigation measures. However, the overall cumulative noise impact of the proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site would be *significant and unavoidable*. This conclusion was reached largely because either the proposed project or the variant would make a cumulatively considerable acoustical contribution of increased roadway traffic noise.

Vibration

Because of the rapid attenuation of groundborne vibration and the distance to the nearest sensitive receptors, for all properties on the project site, cumulative construction and operation impacts with respect to groundborne vibration would be *less than significant.* No mitigation measures are necessary.

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3.7 AIR QUALITY

This section evaluates the impacts related to air quality and health risks and hazards that could result from short-term construction and long-term operation of the proposed project or variant. The analysis identifies both project-level and cumulative environmental impacts, and feasible mitigation measures that could reduce or avoid the identified impacts. Comments regarding air quality were received during the public scoping period in response to the Notice of Preparation. The comments received covered concerns about toxic air contaminants (TACs), criteria air pollutants, and fugitive dust emissions during project construction and operation. These comments are addressed in this section.

Potential vapor intrusion and naturally occurring asbestos related to existing underlying soil conditions at the project site are addressed in Section 3.16, "Hazards and Hazardous Materials." The analysis in this section is based on the air quality technical report presented in Appendix F.

3.7.1 Environmental Setting

Regional Air Quality

Geography and Climate

The project site and vicinity is within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). BAAQMD is the regional agency with jurisdiction for regulating air quality within the nine-county San Francisco Bay Area Air Basin (SFBAAB), which includes San Francisco, Alameda, Contra Costa, Marin, San Mateo, Santa Clara, and Napa counties. BAAQMD maintains the regional emission inventory of stationary, mobile, and areawide sources of air pollution. BAAQMD is also responsible for issuing permits to construct and operate stationary sources of pollutants, and for implementing the programs to review the air quality impacts of new stationary sources.

The San Francisco Bay Area (Bay Area) has a Mediterranean climate characterized by mild, dry summers and mild, moderately wet winters; moderate daytime onshore breezes, and moderate humidity. The project site is located in the Peninsula region of the Bay Area, which extends from northwest of San Jose to the Golden Gate Bridge. The Santa Cruz Mountains run up the center of the Peninsula, with elevations exceeding 2,000 feet at the southern end, decreasing to 500 feet in South San Francisco. Coastal towns experience a high incidence of cool, foggy weather in the summer. Cities in the southeastern Peninsula area experience warmer temperatures and fewer foggy days because the marine layer is blocked by the ridgeline to the west. 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.

The blocking effect of the Santa Cruz Mountains results in variations in summertime maximum temperatures in different parts of the Peninsula. For example, in coastal areas and in San Francisco, the mean maximum summer temperatures are in the mid 60s, while in Redwood City the mean maximum summer temperatures are in the low 80s. Mean minimum temperatures during the winter months are in the high 30s to low 40s on the eastern side of the Peninsula and in the low 40s along the coast.

Two important gaps in the Santa Cruz Mountains occur within the Peninsula. The larger of the two is the San Bruno Gap, extending from Fort Funston on the Pacific Ocean to San Francisco International Airport on San Francisco Bay (Bay). Because the gap is oriented in the same northwest-to-southeast direction as the prevailing winds, and because the elevations along the gap are less than 200 feet, marine air can easily penetrate into the Bay. The other gap is the Crystal Springs Gap, between Half Moon Bay and San Carlos. As the sea breeze strengthens on summer afternoons, the gap permits maritime air to pass across the mountains, and its cooling effect is commonly seen from San Mateo to Redwood City.

Annual average wind speeds range from 5 to 10 miles per hour (mph) throughout the Peninsula, with higher wind speeds usually found along the coast. Winds on the eastern side of the Peninsula are often high in certain areas, such as near the San Bruno Gap and the Crystal Springs Gap.

The prevailing winds along the Peninsula's coast are from the west, although individual sites can show substantial differences. For example, Fort Funston in western San Francisco shows a southwest wind pattern while Pillar Point in San Mateo County shows a northwest wind pattern. On the east side of the mountains, winds are generally from the west, although wind patterns in this area are often influenced greatly by local topographic features.

Air pollution potential along the Peninsula is highest in the southeastern portion. This is the area most protected from the high winds and fog of the marine layer. Pollutant transport from upwind sites is common. In the southeastern portion of the Peninsula, air pollutant emissions are higher than in the rest of the Peninsula because of motor vehicle traffic and stationary sources. At the northern end of the Peninsula in San Francisco, pollutant emissions are high, primarily because of motor vehicle congestion.

Project Vicinity

The primary sources of air pollutants in the project vicinity are vehicle emissions from Innes Avenue and permitted stationary sources, such as emergency generators, a recycling plant, and small refurbishing/manufacturing businesses. Land uses surrounding the project site include residential single-family and multifamily units, schools, the Willie Mays Boys and Girls Club warehouse space, retail, parking, and recreational facility uses (Figure 3.7-1). The closest off-site sensitive receptors are residential land uses located across Innes Avenue from the project site (see the discussion of sensitive receptor locations below, and see Figure 3.7-2).

Air Pollutant Standards and Attainment Designations

Air pollutant standards have been identified by the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (ARB) for the following six criteria air pollutants that affect ambient air quality: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead, and particulate matter (PM), which is subdivided into two classes based on particle size: PM equal to or less than 10 microns in diameter (PM_{10}), and PM equal to or less than 2.5 microns in diameter ($PM_{2.5}$). These air pollutants are called "criteria air pollutants" because they are regulated by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. California has also established standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. Table 3.7-1 presents the national ambient air quality standards (NAAQS) and California ambient air quality standards (CAAQS).

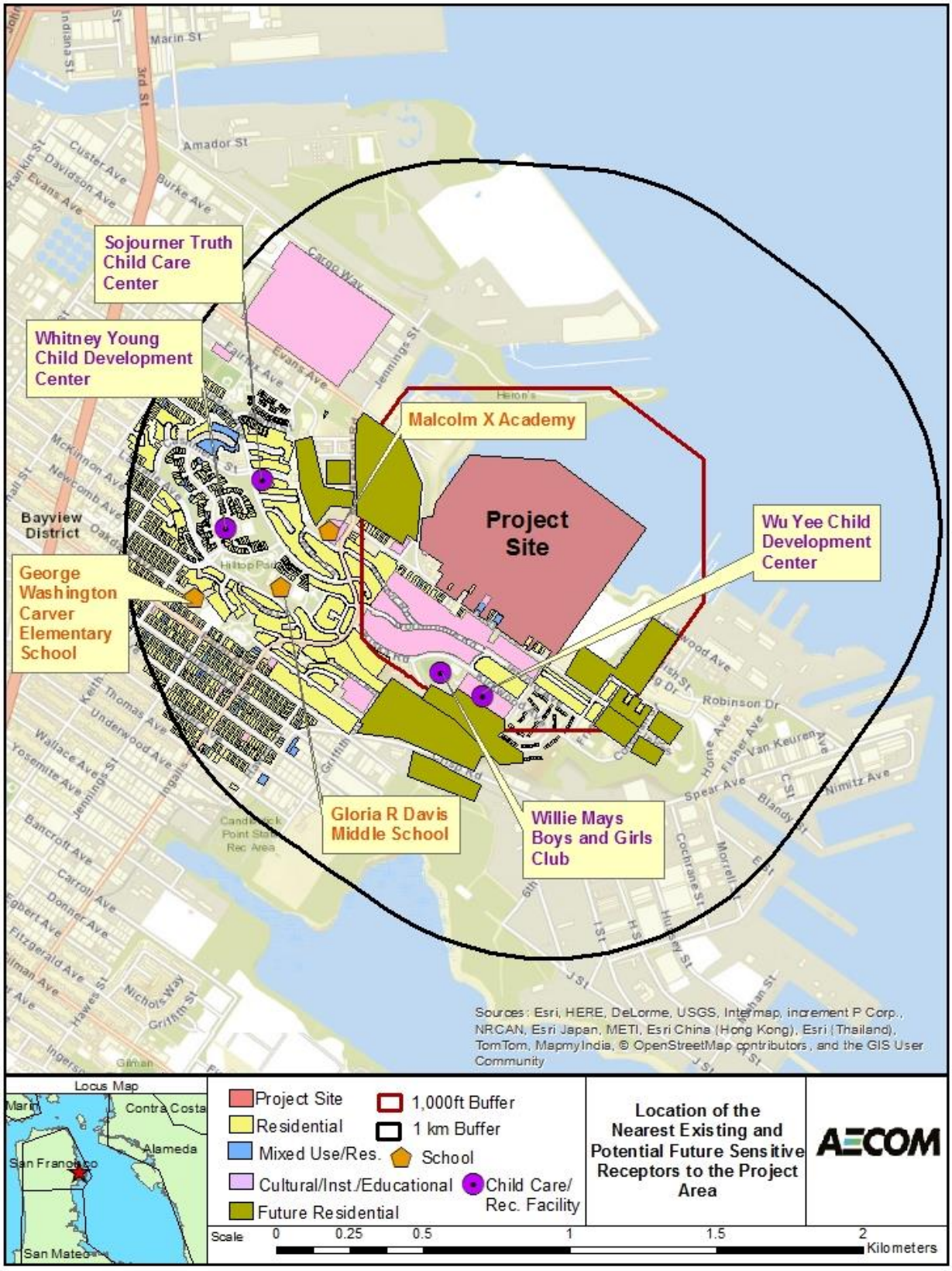

Figure 3.7-1 **Sensitive Land Uses in the Project Vicinity**

Table 3.7-1: Federal and State Air Quality Standards in the SFBAAB

Pollutant	Averaging Time	California Standards	National Standards
Ozone	1 Hour	0.090 ppm (180 µg/m^3)	–
	8 Hours	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)
Respirable Particulate Matter (PM_{10})	24 Hours	50 µg/m^3	150 µg/m^3
	AAM	20 µg/m^3	–
Fine Particulate Matter ($PM_{2.5}$)	24 Hours	–	35 µg/m^3
	AAM	12 µg/m^3	12.0 µg/m^3
Carbon Monoxide (CO)	8 Hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)
	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm
Sulfur Dioxide (SO_2)	24 Hours	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)
	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)
	AAM	–	0.030 ppm (80 µg/m^3)
Lead (Pb)	30-Day Average	1.5 µg/m^3	–
	Calendar Quarter	–	1.5 µg/m^3
	Rolling 3-Month Average[14]	–	0.15 µg/m^3
Visibility-Reducing Particles	8 Hours	See note 1	No national standards[2]
Sulfates	24 Hours	25 µg/m^3	
Hydrogen Sulfide (H_2S)	1 Hour	0.03 ppm (42 µg/m^3)	
Vinyl Chloride (C_2H_3Cl)	24 Hours	0.010 ppm (26 µg/m^3)	

Notes: µg/m^3 = micrograms per cubic meter; AAM = annual arithmetic mean; mg/m^3 = milligrams per cubic meter; ppm = parts per million

[1] In 1989, the California Air Resources Board converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

[2] National ambient air quality standards have not been established for visibility-reducing particles, sulfates, hydrogen sulfide, or vinyl chloride.

Source: ARB, 2015a.

Ambient air pollutant concentrations in the SFBAAB are measured at air quality monitoring stations operated by ARB and BAAQMD. In general, the SFBAAB experiences low concentrations of most pollutants compared to federal or State standards. Table 3.7-2 presents a 5-year summary of the highest annual concentrations of criteria air pollutants collected at the air quality monitoring station at 16th and Arkansas Streets in San Francisco's lower Potrero Hill area. This is the closest monitoring station to the project site (approximately 2.5 miles northwest of the project site) and best represents available air quality data for southeast San Francisco.

Table 3.7-2: Summary of Southeast San Francisco Criteria Pollutants Monitoring Data (2012–2016)

Air Pollutant	Averaging Time	Item	2012	2013	2014	2015	2016
Ozone	1 Hour	Max 1 Hour (ppb)	69	69	79	85	70
		Days > State Standard	0	0	0	0	0
	8 Hour	Max 8 Hour (ppb)	48	59	69	67	57
		Days > State Standard	0	0	0	0	0
		Days > National Standard	0	0	0	0	0
		3-Year Average	47	46	47	48	49
Carbon monoxide	8 Hour	Max 1 Hour (ppm)	2.0	4.8	1.6	1.8	1.7
		Max 8 Hour (ppm)	1.2	1.4	1.2	1.3	1.1
		Days > State Standard	0	0	0	0	0
		Days > National Standard	0	0	0	0	0
Nitrogen dioxide	Annual	Annual Average (ppb)	13	14	12	12	11
	1 Hour	Max 1 Hour (ppb)	124	73	84	71	58
		Days > State Standard	0	0	0	0	0
		Days > National Standard	1	0	0	0	0
Sulfur dioxide	1 Hour	Max 1 Hour (ppb)	–	–	–	–	–
		Days > National Standard	–	–	–	–	–
	24 Hour	Max 24 Hour (ppb)	–	–	–	–	–
		Days > State Standard	–	–	–	–	–
PM_{10}	Annual	Annual Average ($\mu g/m^3$)	17.5	18.3	17.0	19.2	17.0
	24 hour	Max 24 Hour ($\mu g/m^3$)	51	44	36	47	29
		Days > State Standard	1	0	0	0	0
		Days > National Standard	0	0	0	0	0
$PM_{2.5}$	Annual	Annual Average ($\mu g/m^3$)	8.2	10.1	7.7	8.9	7.5
		3-Year Average ($\mu g/m^3$)	9.4	9.3	8.6	10.5	7.6
	24 Hour	24 Hour ($\mu g/m^3$)	35.7	48.5	33.2	35.4	19.6
		Estimated Days > National Standard	1	2	0	0	0
		3-Year Average ($\mu g/m^3$)	24	25	23	25	22

Notes: > = exceed; $\mu g/m^3$ = micrograms per cubic meter; – = insufficient data; National Standard = national ambient air quality standard; $PM_{2.5}$ = particulate matter equal to or less than 2.5 microns in diameter; PM_{10} = particulate matter equal to or less than 10 microns in diameter; ppb = parts per billion; ppm = parts per million; State Standard = California ambient air quality standard
Source: BAAQMD, 2017a

Both EPA and ARB use ambient air quality monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. "Attainment" status refers to those regions that are meeting federal and/or State standards for a specified criteria pollutant. "Nonattainment" refers to regions that do not meet federal and/or State standards for a specified criteria pollutant. "Unclassified" refers to regions where there is not enough data to determine the region's attainment status for a specified criteria air pollutant.

As shown in Table 3.7-3, the SFBAAB is designated as either in attainment or unclassified for most criteria pollutants with the exception of ozone, $PM_{2.5}$, and PM_{10}, for which these pollutants are designated as nonattainment for either the State or federal standards.

Table 3.7-3: SFBAAB Attainment Designations

Pollutant	Federal	State
Ozone	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
PM_{10}	Unclassified	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
Sulfates	N/A	Attainment
Hydrogen Sulfide	N/A	Unclassified
Visibility-Reducing Particles	N/A	Unclassified
Lead	Attainment	Attainment

Notes: N/A = not applicable—no standard; $PM_{2.5}$ = particulate matter equal to or less than 2.5 microns in diameter; PM_{10} = particulate matter equal to or less than 10 microns in diameter
Source: ARB, 2015a.

Air Quality Index

EPA developed the Air Quality Index scale to make the public health impacts of air pollution concentrations easily understandable. The Air Quality Index, much like an air quality "thermometer," translates daily air pollution concentrations into a number on a scale between 0 and 500. The numbers in the scale are divided into six color-coded ranges, as described below:

- Green (0–50) indicates "good" air quality. No health impacts are expected when air quality is in the green range.
- Yellow (51–100) indicates air quality is "moderate." Unusually sensitive people should consider limited prolonged outdoor exertion.
- Orange (101–150) indicates air quality is "unhealthy for sensitive groups." Active children and adults, and people with respiratory disease, such as asthma, should limit outdoor exertion.
- Red (151–200) indicates air quality is "unhealthy." Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.
- Purple (201–300) indicates air quality is "very unhealthy." Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.

The Air Quality Index numbers refer to specific amounts of pollution in the air. They are based on the federal air quality standards for ozone, CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$. In most cases, the federal standard for these air pollutants corresponds to the number 100 on the Air Quality Index chart. If the concentration of any of these pollutants rises above its respective standard, it can be unhealthy for the public. In determining the air quality

forecast, local air districts, including BAAQMD, use the anticipated concentration measurements for each of the major pollutants, convert them into Air Quality Index numbers, and determine the highest Air Quality Index for each zone in a district.

Readings below 100 on the Air Quality Index scale would not typically affect the health of the general public (although readings in the moderate range of 50–100 may affect unusually sensitive people). Levels above 300 rarely occur in the United States, and readings above 200 have not occurred in the Bay Area in decades. Air Quality Index statistics from recent years indicate that air quality in the Bay Area is predominantly in the "good" or "moderate" category and healthy on most days for most people.

Table 3.7-4 shows the highest daily Air Quality Index value for each year from 2012 to 2016. Historical BAAQMD data indicate that the highest Air Quality Index levels measured at the San Francisco–Arkansas Street monitoring station experienced air quality in the "moderate" category between 2013 and 2016. BAAQMD data indicate that the SFBAAQB experienced air quality at the red ("unhealthy") level on 5 days between the years 2012 and 2016 (Table 3.7-5). The City had a total of 11 days at the orange level ("unhealthy for sensitive groups") in 2012, 15 days in 2013, 11 days in 2014, 19 days in 2015, and 13 days in 2016.

Table 3.7-4: Air Quality Index Statistics for the SFBAAB

Air Quality Index Statistics					
Year	**2012**	**2013**	**2014**	**2015**	**2016**
Air Quality Index Value	44	64	97	90	58
Level of Health Concern	Good	Moderate	Moderate	Moderate	Moderate

Source: San Francisco–Arkansas Street Station air monitoring data, BAAQMD, 2017a; compiled by AECOM in 2017.

Table 3.7-5: Air Quality Index Statistics for the SFBAAB City of San Francisco

Air Quality Index Statistics	**Number of Days By Year**				
Year	**2012**	**2013**	**2014**	**2015**	**2016**
Unhealthy for Sensitive Groups (orange)	11	15	11	19	13
Unhealthy (red)	1	1	1	0	2

Source: BAAQMD 2017.

Air Pollutant Types, Sources, and Effects

As discussed above, air pollutants are termed criteria air pollutants if they are regulated by developing specific public health– and welfare-based criteria as the basis for setting permissible levels. The following discussion explains the types, sources, and effects of criteria air pollutants.

Criteria Air Pollutants

Ozone, or smog, is not emitted directly into the environment, but is formed in the atmosphere by complex chemical reactions between reactive organic gases (ROG) and oxides of nitrogen (NOx) in the presence of sunlight. Ozone formation is greatest on warm, windless, sunny days. The main sources of NOx and ROG, often referred to as ozone precursors, are combustion processes (including motor vehicle engines), the evaporation of

solvents, paints, and fuels, and biogenic sources. Automobiles are the single largest source of ozone precursors in the SFBAAB. Tailpipe emissions of ROG are highest during cold starts, hard acceleration, stop-and-go conditions, and slow speeds. They decline as speeds increase up to about 50 mph, then increase again at high speeds and high engine loads. ROG emissions associated with evaporation of unburned fuel depend on vehicle and ambient temperature cycles. NO_X emissions exhibit a different curve; emissions decrease as the vehicle approaches 30 mph and then begin to increase with increasing speeds. Ozone levels usually build up during the day, peaking in the afternoon hours.

Short-term exposure can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as asthma, bronchitis and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. Ozone can also damage plants and trees, and materials such as rubber and fabrics.

Table 3.7-2 shows that, according to published data, the standards for ozone (State 1-hour standard of 0.090 part per million [ppm] and the State/federal 8-hour standard of 0.070 ppm) were not exceeded at the San Francisco–Arkansas Street monitoring station between 2012 and 2016. However, the air basin remains listed as nonattainment for ozone because of exceedances at other monitoring stations in the SFBAAB.

Particulate Matter refers to a wide range of solid or liquid particles in the atmosphere, including smoke, dust, aerosols, and metallic oxides. Respirable particulate matter with an aerodynamic diameter of 10 microns or less is referred to as PM_{10}. $PM_{2.5}$ includes a subgroup of finer particles that have an aerodynamic diameter of 2.5 microns or less. Some particulate matter, such as pollen, is naturally occurring. In the SFBAAB, most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles.

Fugitive Dust is PM_{10} and $PM_{2.5}$ suspended in the air by wind action and human activities. Fugitive dust particles are composed mainly of soil minerals (e.g., oxides of silicon, aluminum, calcium, and iron), but can also contain sea salt, pollen, spores, and tire particles. Because of their small size, PM_{10} and $PM_{2.5}$ can remain airborne for weeks. Fugitive dust accounts for about 90 percent of all primary PM_{10} emissions (ARB, 2007). PM_{10} and $PM_{2.5}$ pose health concerns because the PM can contain harmful substances that can deposit deep in the lungs when in inhaled, causing respiratory illnesses and lung damage. In addition, fugitive dust can reduce visibility.

As shown in Table 3.7-2, the State 24-hour PM_{10} standard of 50 micrograms per cubic meter ($\mu g/m^3$) was exceeded up to 6 days in 2012.[1] The State 24-hour $PM_{2.5}$ standard was exceeded on 3 days between 2012 and 2016. The SFBAAB is designated as nonattainment for the State PM_{10} and both the federal and State $PM_{2.5}$ standards.

Nitrogen Dioxide is a reddish-brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 can increase the risk of acute and chronic respiratory disease and reduce visibility. NO_2 may be visible as a coloring component of a brown cloud on high pollution days, especially in conjunction with high ozone levels.

[1] PM_{10} concentrations were sampled every sixth day before 2013; therefore, actual days over the standard can be estimated to be six times the numbers listed in the table.

In 2010, a new federal 1-hour NO_2 standard was implemented. Currently, ARB is recommending that the SFBAAB be designated as an attainment area for the new standard. EPA expects to make a designation for the SFBAAB by the end of 2017. As shown in Table 3.7-2, the federal standard was exceeded on 1 day in 2012.

Carbon Monoxide is an odorless, colorless gas. It is formed by the incomplete combustion of fuels. The single largest source of CO in the SFBAAB is motor vehicles. Emissions are highest during cold starts, hard acceleration, stop-and-go driving, and when a vehicle is moving at low speeds.

When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease or anemia, as well as fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death.

As shown in Table 3.7-2, the applicable standards for CO (State 1-hour standard of 20 ppm and the State/federal 8-hour standard of 9 ppm) were not exceeded between 2012 and 2016. The SFBAAB is classified as an attainment area for both the State and federal CO standards.

Sulfur Dioxide is a colorless acid gas with a pungent odor. SO_2 has the potential to damage materials and can have health effects at high concentrations. It is produced by the combustion of sulfur-containing fuels, such as oil, coal and diesel. SO_2 can irritate lung tissue and increase the risk of acute and chronic respiratory disease.

EPA has designated the SFBAAB as an attainment area for SO_2. In 2013, EPA established requirements for a monitoring network to measure SO_2 concentrations; however, no additional SO_2 monitors were required for the SFBAAB, because the BAAQMD jurisdiction had never been designated as nonattainment for SO_2.

Lead is a metal found naturally in the environment and in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. In the early 1970s, EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically.

On October 15, 2008, EPA strengthened the national ambient air quality standard for lead by lowering it from 1.5 $\mu g/m^3$ to 0.15 $\mu g/m^3$. EPA revised the monitoring requirements for lead in December 2010. These requirements focus on airports and large urban areas. Lead monitoring stations in the SFBAAB are located at Palo Alto Airport, Reid-Hillview Airport (San Jose), and San Carlos Airport. Nonairport locations for lead monitoring are in Redwood City and San Jose. The SFBAAB is designated as an attainment area for lead.

Toxic Air Contaminants

Concentrations of TACs are also used as indicators of air quality conditions. Air pollutant human exposure standards are identified for many TACs, including the following common TACs relevant to development projects: particulate matter, fugitive dust, lead, and asbestos. These air pollutants are called TACs because they are air pollutants that may cause or contribute to an increase in mortality or in serious illness or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health impact may pose a threat to public health even at low concentrations. TACs can cause long-term health effects (such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage) or short-term acute affects (such as eye watering, respiratory irritation, runny nose, throat pain, or headaches).

TACs are separated into carcinogens and noncarcinogens based on the nature of the physiological effects associated with exposure to a particular TAC. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. Cancer risk is typically expressed as excess cancer cases per million exposed individuals, typically over a lifetime exposure or other prolonged duration. For noncarcinogenic substances, there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels may vary depending on the specific pollutant. Acute and chronic exposure to noncarcinogens is expressed as a hazard index (HI), which is the ratio of expected exposure levels to an acceptable reference exposure levels. The following discussion explains the types, sources, and effects of TACs.

Diesel Particulate Matter (diesel PM) is the solid material in diesel exhaust. More than 90 percent of diesel PM is less than 1 micrometer in diameter (about 1/70th the diameter of a human hair), and thus is a subset of $PM_{2.5}$ (ARB, 2016). As explained previously, $PM_{2.5}$ poses an increased health risk because the particles can deposit deep in the lungs and contain substances that are particularly harmful to human health. Exposures to $PM_{2.5}$ are strongly associated with mortality, respiratory diseases, and lung development in children, and other endpoints such as hospitalization for cardiopulmonary disease (SFDPH, 2008). Diesel PM was identified as a TAC by ARB in 1998 (ARB, 1998). Federal and State efforts to reduce diesel PM emissions have focused on the use of improved fuels, adding particulate filters to engines, and requiring the production of new-technology engines that emit fewer exhaust particulates.

The estimated cancer risk from exposure to diesel PM exhaust is much higher than the risk associated with any other TAC routinely measured in the BAAQMD region. BAAQMD's Community Air Risk Evaluation (CARE) program estimates and reports both local and regional impacts of TACs in the Bay Area. As part of the CARE program, communities most affected by air pollution are identified. In support of this program, the City completed the Community Risk Reduction Plan Health Risk Assessment (CRRP-Health Risk Assessment), which found that "Diesel truck traffic on freeways and the downtown roadway network is largely responsible for the areas near these roadways with incremental potential cancer risk over 100 per million" (SFDPH et al., 2012).

Lead, as explained previously, is a relatively soft and chemically resistant metal found in mobile and industrial sources. As an air pollutant, lead is present in small particles and slowly excreted. As such, exposures to small amounts of lead can accumulate to harmful levels. Effects from inhalation of lead include impaired blood formation and nerve conduction, which can adversely affect the nervous, reproductive, digestive, and immune systems. ARB identified lead as a TAC in 1993. Lead is considered "possibly carcinogenic" by EPA (2014). Levels of lead in the air have decreased by more than 98 percent in the last 30 years, primarily as a result of the elimination of lead from gasoline (ARB, 2001).

ARB identifies substances as TACs as defined in Health and Safety Code Section 39655 and listed in Title 17, Section 93000 of the California Code of Regulations, "Substances Identified As Toxic Air Contaminants." ARB also collects ambient TAC emissions data at the San Francisco–Arkansas Street monitoring station (Table 3.7-6). Table 3.7-6 shows ambient concentrations of carcinogenic TACs measured at the San Francisco–Arkansas Street monitoring station and the estimated cancer risks from lifetime exposure (70-year exposure, including the second trimester of pregnancy) to these substances.

Table 3.7-6: Carcinogenic Toxic Air Contaminants—Annual Average Ambient Concentrations at the San Francisco–Arkansas Street Monitoring Station (2015)

Substance	Mean Concentration (ppb)	Cancer Risk per Million[a]
Gaseous Toxic Air Contaminants		
Acetaldehyde	0.66	10
Benzene	0.195	51
1,3-Butadiene	0.038	41
Para-Dichlorobenzene	*	*
Carbon Tetrachloride	0.094	72
Ethylene Dibromide	*	*
Formaldehyde	1.46	31
Perchloroethylene	0.015	2
Methylene Chloride	0.127	1
Methyl Tertiary-Butyl Ether (MBTE)	*	*
Chloroform	0.030	2
Trichloroethylene	0.012	0.4
Particulate TACs[b]		
Hexavalent Chromium	0.078	32

Notes:
ppb = parts per billion; TAC = toxic air contaminant
a. The risks shown in the California Air Resources Board's (ARB's) annual toxic summary pages are estimated chronic cancer risk resulting from the inhalation pathway. These risks are expressed in terms of expected cancer cases per million population based on exposure to the annual mean concentration over 70 years. They are calculated using unit risk factors provided to ARB by the California Office of Environmental Health Hazard Assessment.
b. ng/m^3 = nanograms per cubic meter.
* indicates that insufficient or no data were available to determine the value.
Source: ARB, 2015b

When TAC measurements at the San Francisco–Arkansas Street monitoring station are compared to ambient concentrations of various TACs for the Bay Area as a whole, the estimated average lifetime cancer risk resulting from TAC concentrations monitored at the San Francisco–Arkansas Street station does not appear to be substantially greater or less than that for the Bay Area as whole.

Air Pollution Exposure Zone

The City and BAAQMD conducted a Citywide health risk assessment[2] based on an inventory and assessment of air pollution and exposures from mobile, stationary, and area sources in San Francisco to identify areas of the City most adversely affected by sources of TACs. Citywide dispersion modeling was conducted using AERMOD to

[2] In general, a health risk assessment is required if BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggest a potential public health risk. The applicant is then subject to a health risk assessment for the source in question. Such an assessment generally evaluates chronic, long-term effects, estimating the increased risk of cancer as a result of exposure to one or more TACs.

assess emissions from roadways, permitted stationary sources, port and maritime sources, and Caltrain. Emissions of diesel PM, $PM_{2.5}$ (including brake and tire wear), organic gases, and other TACs from stationary sources were modeled on a 20-by-20-meter receptor grid over the entire City. The results represent existing exposure to $PM_{2.5}$ and excess cancer risk across San Francisco. The procedures used to conduct the modeling are available in *The San Francisco Community Risk Reduction Plan: Technical Support Documentation* (SFDPH et al., 2012).

The modeling results were used to identify areas of the City with poor air quality, many of which buffer major thoroughfares (SFDPH, 2016a). These areas are within the Air Pollutant Exposure Zone (APEZ). The APEZ met either or both of the criteria described below.

- **Excess Cancer Risk of 100 per One Million Persons.** This criterion is based on EPA guidance for conducting air toxic analyses and making risk management decisions at the facility and community-scale levels (BAAQMD, 2009). As described by BAAQMD, EPA considers a cancer risk of 100 per 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 rulemaking (54 *Federal Register* 38044, September 14, 1989), EPA states that it

  > …strives to provide maximum feasible protection against risks to health from hazardous air pollutants by (1) protecting the greatest number of persons possible to an individual lifetime risk level no higher than approximately one in one million and (2) limiting to no higher than approximately one in ten thousand [100 in one 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 one million excess cancer cases is also consistent with the ambient cancer risk in the most pristine portions of the Bay Area based on BAAQMD regional modeling (BAAQMD, 2009).
- **Fine Particulate Matter of 2.5 µg/m^3**. In April 2011, EPA published *Policy Assessment for the Particulate Matter Review of the National Ambient Air Quality Standards*, "Particulate Matter Policy Assessment" (EPA, 2011a). In this document, EPA staff concludes that the then-current federal annual $PM_{2.5}$ standard of 15 µg/m^3 should be revised to a level within the range of 13 to 11 µg/m^3, with evidence strongly supporting a standard within the range of 12 to 11 µg/m^3. An APEZ for San Francisco (SFDPH, 2016a) is based on the health protective $PM_{2.5}$ standard of 11 µg/m^3, as supported by EPA's Particulate Matter Policy Assessment, although lowered to 10 µg/m^3 to account for uncertainty in accurately predicting air pollutant concentrations using emissions modeling programs.

In addition to the APEZ criteria, two other indices have been used to determine whether areas of the City require more stringent criteria:

- **Location in a Health-Vulnerable Zip Code**. In addition to the lots included in the APEZ, zip codes in the lowest 20 percent of Bay Area Health Vulnerability scores (zip codes 94102, 94103, 94105, 94124, and 94130) are identified as health-vulnerable zip codes. For areas that are included in the APEZ and a health-vulnerable zip code, the standard was lowered to an excess cancer risk from the contribution of emissions from all modeled sources greater than 90 per one million persons, and/or cumulative $PM_{2.5}$ concentrations greater than 9 µg/m^3.
- **Proximity to a Major Transportation Thoroughfare.** According to ARB, studies have shown an association between the proximity of sensitive land uses to freeways/other major transportation thoroughfares

and a variety of respiratory symptoms, asthma exacerbations, and decreases in lung function in children. Siting sensitive uses in close proximity to freeways/other major transportation thoroughfares increases both exposure to air pollution and the potential for adverse health effects. As evidence shows that sensitive uses in an area within a 500-foot buffer of any freeway are at an increased health risk from air pollution (ARB, 2005), lots that are within 500 feet of freeways are included in the APEZ.

The project area is not located in the APEZ. However, the project study area is located in a health-vulnerable zip code (94124).

Sensitive Receptors

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, 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.

BAAQMD defines sensitive receptors as children, adults, and seniors occupying or residing in residential dwellings, schools, day care centers, hospitals, and senior-care facilities. The project site is adjacent to an existing residential area. Figure 3.7-2 shows the nearby existing sensitive receptors.

Existing Emission Sources

Project Site

India Basin Shoreline Park Property

The 5.6-acre India Basin Shoreline Park property currently supports recreational amenities, a portion of the Blue Greenway/San Francisco Bay Trail (Bay Trail), and parking areas. India Basin Shoreline Park provides informal access along the Bay shoreline. Although many of the amenities at the park are not highly used, criteria air pollutant and TAC emissions are generated from this property by visitor vehicle trips to and from the site, landscaping and maintenance equipment, and the use of barbeque grills.

The existing $PM_{2.5}$ concentration is 8.2 µg/m³ and existing excess cancer risk is 21.3 in a million, based on Citywide modeling conducted in 2012. This property is not located in an APEZ but is located in a health-vulnerable zip code, and Innes Avenue is not an existing a major transportation thoroughfare.

900 Innes Property

The 900 Innes property consists of seven parcels totaling 2.4 acres and is a former maritime industrial site that contains five buildings and structures. The structures on this property are dilapidated, are not currently used, and lack utilities, and thus generate no criteria air pollutant or TAC emissions. The existing $PM_{2.5}$ concentration is

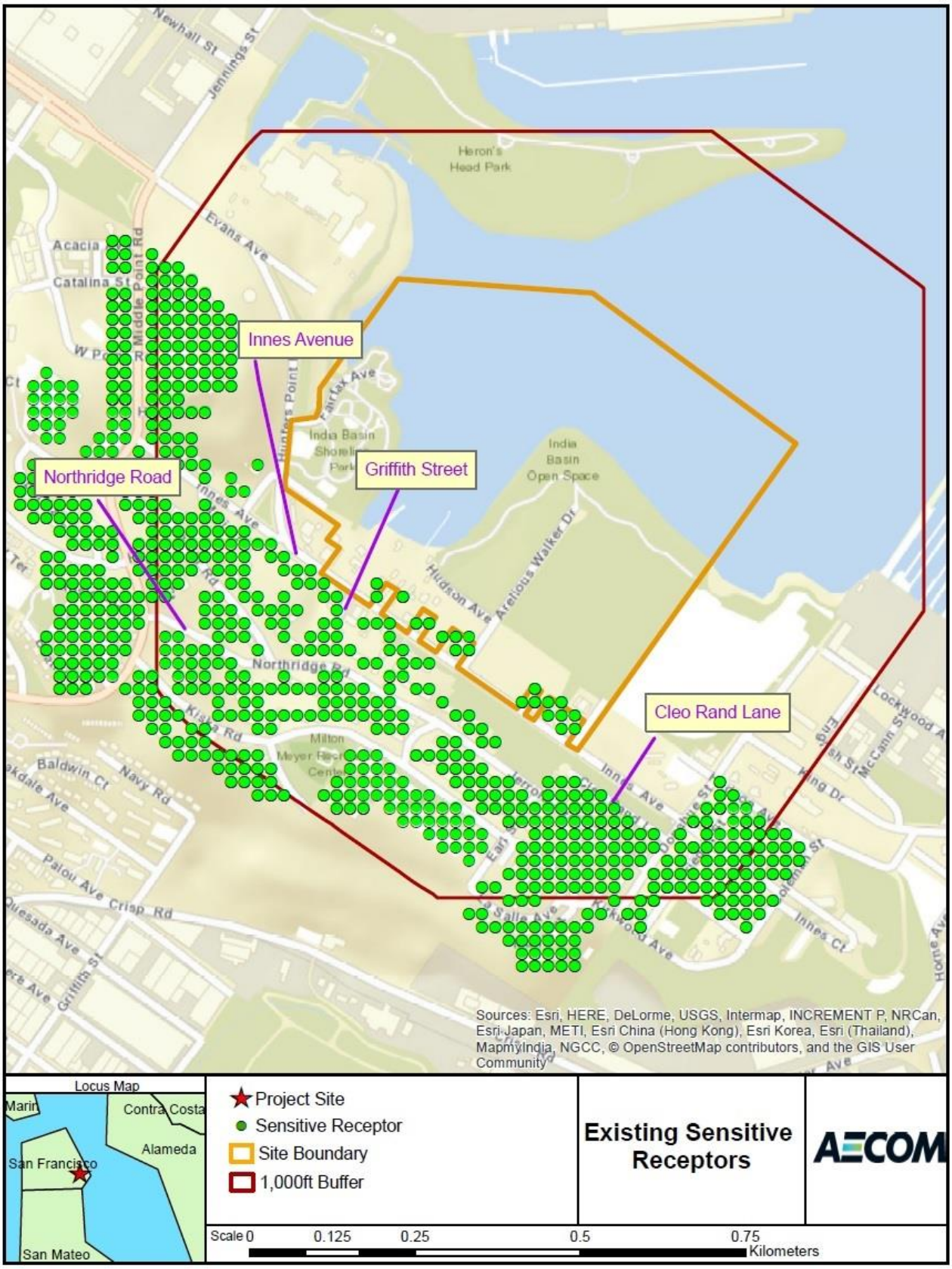

Figure 3.7-2 **Existing Sensitive Receptors**

8.2 µg/m³ and existing excess cancer risk is 21.3 in a million, based on Citywide modeling conducted in 2012. This property is not located in an APEZ but is located in a health-vulnerable zip code, and Innes Avenue is not an existing major transportation thoroughfare.

India Basin Open Space Property

The 6.2-acre India Basin Open Space property is an open space bordering the Bay. This property includes a portion of the Blue Greenway/Bay Trail along its shoreline. The India Basin Open Space contains beaches, upland habitat, tidal salt marsh, mudflats, sand dunes, and native vegetation. Currently, public access to the shoreline is limited to the Blue Greenway/Bay Trail during the day, given the lack of utilities. Two easements to the shoreline exist, but they are not paved or designated for public access. Because of the nature of this property, no criteria air pollutant or TAC emissions are currently generated at this property. The existing $PM_{2.5}$ concentration is 8.2 µg/m³ and existing excess cancer risk is 21.3 in a million, based on Citywide modeling conducted in 2012. This property is not located in an APEZ but is located in a health-vulnerable zip code. Innes Avenue is not an existing major transportation thoroughfare.

700 Innes Property

The 700 Innes property consists of 30 parcels totaling 17.12 acres. This area generally is made of fill materials and is undeveloped except for approximately six structures: a timber-framed industrial building, a residence, a commercial building, and three temporary structures. The primary sources of criteria air pollutant and TAC emissions are vehicle trips to and from this property.

The existing $PM_{2.5}$ concentration is 8.2 µg/m³ and existing excess cancer risk is 29.2 in a million, based on citywide modeling conducted in 2012. This property is not located in an APEZ but is located in a health-vulnerable zip code. Innes Avenue is not an existing major transportation thoroughfare.

3.7.2 Regulatory Framework

Air quality in the SFBAAB is regulated by EPA, ARB, BAAQMD, and the City. Each of these agencies develops rules, regulations, policies, and/or goals to attain the directives imposed through legislation. Although EPA regulations may not be superseded, both State and local regulations may be more stringent.

Federal

EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal Clean Air Act, which was enacted in 1970. The most recent major Clean Air Act amendments were made by Congress in 1990.

Federal Clean Air Act

The Clean Air Act required EPA to establish NAAQS. EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. The primary standards protect public health and the secondary standards protect public welfare. The primary standards are shown in Table 3.7-1. The Clean Air Act also requires each state to prepare an air quality control plan referred to as a state implementation plan (SIP). The federal Clean Air Act Amendments of 1990 added requirements for states with

nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies.

Emission Standards for New Off-Road Equipment

Before 1994, there were no standards to limit the amount of emissions from off-road equipment. In 1994, EPA established emission standards for hydrocarbons, NO_X, CO, and PM to regulate new pieces of off-road equipment. These emission standards came to be known as Tier 1. Since that time, increasingly more stringent Tier 2, Tier 3, and Tier 4 (interim and final) standards were adopted by EPA, as well as by ARB. Each adopted emission standard was phased in over time. New engines built in and after 2015 across all horsepower (hp) sizes must meet Tier 4 final emission standards. In other words, new manufactured engines cannot exceed the emissions established for Tier 4 final emissions standards.

State

A SIP is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain federal standards. The SIP for the State of California is administered by ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's SIP incorporates individual federal attainment plans for regional air districts. The air district prepares its federal attainment plan, which is sent to ARB to be approved and incorporated into the California SIP. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms.

California Clean Air Act

ARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act. The California Clean Air Act was adopted in 1988; it requires ARB to establish CAAQS (Table 3.7-1). ARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned federal criteria air pollutants. In most cases, the CAAQS are more stringent than the NAAQS.

Other ARB responsibilities include but are not limited to overseeing local air district compliance with California and federal laws; approving local air quality plans; submitting SIPs to EPA; monitoring air quality; determining and updating area designations and maps; and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

Verified Diesel Emission Control Strategies

EPA's and ARB's tiered off-road emission standards only apply to new engines and off-road equipment can last several years. ARB has developed Verified Diesel Emission Control Strategies (VDECS), which are devices, systems, or strategies used to achieve the highest level of pollution control from existing off-road vehicles, to help reduce emissions from existing engines. VDECS are designed primarily for the reduction of diesel PM emissions and have been verified by ARB. There are three levels of VDECS, the most effective of which is the Level 3

VDECS. Tier 4 engines are not required to install VDECS because they already meet the emissions standards for lower tiered equipment with installed controls.

ARB In-Use Off-Road Diesel Vehicle Regulation

In 2007, ARB adopted a regulation to reduce diesel PM and NO_X emissions from in-use off-road heavy-duty diesel vehicles in California. The regulation imposes limits on vehicle idling and requires fleets to reduce emissions by retiring, replacing, repowering, or installing exhaust retrofits to older engines. In December 2010, major amendments were made to the regulation, including a delay of the first performance standards compliance date to no earlier than January 1, 2014 (ARB, 2010).

Carl Moyer Memorial Air Quality Standards Attainment Program

The Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program), a partnership between ARB and local air districts, issues grants to replace or retrofit older engines and equipment with engines and equipment that exceed current regulatory requirements to reduce air pollution. Money collected through the Carl Moyer Program complements California's regulatory program by providing incentives to effect early or extra emission reductions, especially from emission sources in environmental justice communities and areas disproportionately affected by air pollution. The program has established guidelines and criteria for the funding of emissions reduction projects.

Within the SFBAAB, BAAQMD administers the Carl Moyer Program. The program establishes cost-effectiveness criteria for funding emission reductions projects, which under the final 2017 Carl Moyer Program Guidelines are $30,000 per weighted ton of NO_X, ROG, and PM (ARB 2017).

Tanner Air Toxics Act and Air Toxics Hot Spots Information and Assessment Act

TACs in California are primarily regulated through the Tanner Air Toxics Act (Assembly Bill 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (Assembly Bill 2588), also known as the Hot Spots Act. To date, ARB has identified more than 21 TACs, and has adopted EPA's list of HAPs as TACs.

ARB Airborne Toxics Control Measures

ARB has adopted Airborne Toxics Control Measures for sources that emit a particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technology to minimize emissions.

ARB Diesel Risk Reduction Plan

The ARB-adopted Diesel Risk Reduction Plan recommends control measures to achieve a diesel PM reduction of 85 percent by 2020 from year 2000 levels. Recent regulations and programs include the low-sulfur diesel fuel requirement and more stringent emission standards for heavy-duty diesel trucks and off-road in-use diesel equipment. As emissions are reduced, it is expected that the risks associated with exposure to the emissions will also be reduced.

Regional

BAAQMD California Environmental Quality Act Air Quality Guidelines

BAAQMD is the primary agency responsible for ensuring that air quality standards (NAAQS and CAAQS) are attained and maintained in the SFBAAB through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. BAAQMD prepares plans to attain ambient air quality standards in the SFBAAB. BAAQMD prepares ozone attainment plans for the national ozone standard, clean air plans (CAPs) for the California standard, and PM plans to fulfill federal air quality planning requirements. BAAQMD also inspects stationary sources of air pollution; responds to citizen complaints; monitors ambient air quality and meteorological conditions; and implements programs and regulations required by the Clean Air Act, the Clean Air Act Amendments of 1990, and the California Clean Air Act.

BAAQMD developed quantitative thresholds of significance for its California Environmental Quality Act (CEQA) guidelines in 2010, which were also included in its updated 2011 guidelines (BAAQMD, 2010, 2011). BAAQMD's adoption of the 2010 thresholds of significance was later challenged in court. In an opinion issued on December 17, 2015, related to the BAAQMD CEQA guidelines, the California Supreme Court held that CEQA does not generally require an analysis of the impacts of locating development in areas subject to environmental hazards unless the project would exacerbate existing environmental hazards. The Supreme Court also found that CEQA requires the analysis of exposing people to environmental hazards in specific circumstances, including the location of development near airports, schools near sources of toxic contamination, and certain exemptions for infill and workforce housing. The Supreme Court also held that public agencies remain free to voluntarily conduct this analysis not required by CEQA for their own public projects (*CBIA v. BAAQMD* [2016] 2 Cal.App.5th 1067,1083).

In view of the Supreme Court's opinion, BAAQMD published a new version of its CEQA guidelines in May 2017. The BAAQMD CEQA guidelines state that local agencies may rely on thresholds designed to reflect the impact of locating development near areas of toxic air contamination where such an analysis is required by CEQA or where the agency has determined that such an analysis would assist in making a decision about the project. However, the thresholds are not mandatory and agencies should apply them only after determining that they reflect an appropriate measure of a project's impacts. BAAQMD's guidelines for implementation of the thresholds are for informational purposes only, to assist local agencies.

BAAQMD 2017 Clean Air Plan

BAAQMD adopted the *Bay Area Clean Air Plan: Spare the Air, Cool the Climate* (Bay Area Clean Air Plan) on April 19, 2017, to provide a regional strategy to improve Bay Area air quality and meet public health goals (BAAQMD, 2017d). The control strategy described in the Bay Area Clean Air Plan includes a wide range of control measures designed to reduce emissions and lower ambient concentrations of harmful pollutants, safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, and reduce greenhouse gas (GHG) emissions to protect the climate.

The Bay Area Clean Air Plan addresses four categories of pollutants: ground-level ozone and its key precursors, ROG and NO_X; PM, primarily $PM_{2.5}$, and precursors to secondary $PM_{2.5}$; air toxics; and GHGs. The control measures are categorized based on the economic sector framework including stationary sources, transportation,

energy, buildings, agriculture, natural and working lands, waste management, and water measures (BAAQMD, 2017d).

BAAQMD Particulate Matter Plan

To fulfill federal air quality planning requirements, BAAQMD adopted a $PM_{2.5}$ emissions inventory for year 2010 at a public hearing on November 7, 2012. The Bay Area Clean Air Plan also included several measures for reducing PM emissions from stationary sources and wood burning. On January 9, 2013, EPA issued a final rule determining that the Bay Area has attained the 24-hour $PM_{2.5}$ NAAQS, suspending federal SIP planning requirements for the SFBAAB (BAAQMD, 2013). Despite this EPA action, the SFBAAB will continue to be designated as nonattainment for the national 24-hour $PM_{2.5}$ standard until BAAQMD submits a redesignation request and a maintenance plan to EPA, and EPA approves the proposed redesignation.

BAAQMD 2001 Ozone Attainment Plan

BAAQMD adopted the Bay Area Ozone Attainment Plan in 2001 in response to EPA's finding that the Bay Area had failed to attain the NAAQS for ozone. The plan includes a control strategy for ozone and its precursors to ensure a reduction in emissions from stationary sources, mobile sources, and the transportation sector (BAAQMD, 2001).

BAAQMD Regulation 2, Rule 5

BAAQMD regulates backup emergency generators, fire pumps, and other sources of TACs through its New Source Review (Regulation 2, Rule 5) permitting process (BAAQMD, 2016a). Although emergency generators are intended to be used only during periods of power outages, monthly testing of each generator is required; however, BAAQMD limits testing to no more than 50 hours per year. Each emergency generator installed is assumed to meet a minimum of Tier 2 emission standards (before control measures). As part of the permitting process, BAAQMD limits the excess cancer risk from any facility to no more than 10 per 1 million population for any permits that are applied for within a 2-year period and would require any source that would result in an excess cancer risk greater than 1 per 1 million to install Best Available Control Technology for Toxics.

BAAQMD Regulations Pertaining to Odorous Emissions

BAAQMD is responsible for investigating and controlling odor complaints in the Bay Area. The agency enforces odor control by helping the public to document a public nuisance. Upon receipt of a complaint, BAAQMD sends an investigator to interview the complainant and to locate the odor source if possible. BAAQMD typically brings a public nuisance court action when there are a substantial number of confirmed odor events within a 24-hour period. An odor source with five or more confirmed complaints per year averaged over 3 years is considered to have a substantial effect on receptors.

Several BAAQMD regulations and rules apply to odorous emissions. Regulation 1, Rule 301 is the nuisance provision that states that sources cannot emit air contaminants that cause nuisance to a considerable number of persons. Regulation 7 specifies limits for the discharge of odorous substances where BAAQMD receives complaints from 10 or more complainants within a 90-day period. Among other things, Regulation 7 precludes discharge of an odorous substance that causes the ambient air at or beyond the property line to be odorous after

dilution with 4 parts of odor-free air, and specifies maximum limits on the emission of certain odorous compounds.

ABAG and MTC Plan Bay Area

On July 18, 2013, the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) approved the *Plan Bay Area*. The *Plan Bay Area* includes integrated land use and transportation strategies for the region and was developed through OneBayArea, a joint initiative between ABAG, BAAQMD, MTC, and the San Francisco Bay Conservation and Development Commission. The plan's transportation policies focus on maintaining the extensive existing transportation network and utilizing these systems more efficiently to handle density in Bay Area transportation cores (ABAG and MTC, 2013). Assumptions for land use development used are taken from local and regional planning documents. Emission forecasts in the Bay Area Clean Air Plan rely on projections of vehicle miles traveled, population, employment, and land use projections made by local jurisdictions during development of *Plan Bay Area*.

Local

San Francisco General Plan Air Quality Element

San Francisco has a number of policies and regulations related to air quality, including those within the Air Quality Element of the *San Francisco General Plan* (General Plan) (San Francisco, 1996) and the City's Building and Health Codes. The objectives specified by the City 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 by coordination of land use and transportation decisions.
- **Objective 4:** Improve air quality by increasing public awareness regarding the negative health effects of pollutants generated by stationary and mobile sources.
- **Objective 5:** Minimize particulate matter emissions from road and construction sites.
- **Objective 6:** Link the positive effects of energy conservation and waste management to emission reductions.

San Francisco Health Code and San Francisco Building Code

San Francisco Construction Dust Control Ordinance

The San Francisco Health Code Article 22B and San Francisco Building Code Section 106A.3.2.6 collectively constitute the Construction Dust Control Ordinance (adopted in July 2008). The ordinance requires that all site preparation work, demolition, or other construction activities in San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specific dust control measures whether or not the activity requires a permit from the Department of Building Inspection (DBI). For projects larger than 0.5 acre, the Dust Control Ordinance requires that the project sponsor submit a dust control

plan for approval by the San Francisco Department of Public Health (SFDPH) before DBI issues a building permit.

Building permits will not be issued without written notification from the Director of Public Health that the applicant has a site-specific dust control plan, unless the Director waives the requirement. The Construction Dust Control Ordinance requires project sponsors and contractors responsible for construction activities to control construction dust on the site or implement other practices that result in equivalent dust control that are acceptable to the Director of Public Health. Dust suppression activities may include watering all active construction areas sufficiently 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.

San Francisco Clean Construction Ordinance

In April 2007, the City adopted an ordinance requiring public projects to reduce emissions at construction sites starting in 2009. In March 2015, the City expanded the existing ordinance to require public projects to further reduce emissions at construction sites in certain areas with high levels of background concentrations of air pollutants. Establishment of the APEZ was used as the basis for approving a series of amendments to the San Francisco Environment and Administrative codes, generally referred to as the Clean Construction Ordinance, or Environment Code Chapter 25 (Ordinance 28-15, effective April 19, 2015). The purpose of the Clean Construction Ordinance is to protect the public health, safety, and welfare by requiring contractors on City public works projects to reduce diesel and other PM emissions generated by construction activities. For projects located within the APEZ, the Clean Construction Ordinance requires the following:

- **Equipment Requirements:**
  - Equipment must meet or exceed Tier 2 standards for off-road engines and operate with the most effective ARB Verified Retrofits for Off-Road Diesel Vehicles available for the engine type (Tier 4 engines automatically meet this requirement).
  - Portable diesel engines are prohibited where access to alternative sources of power is available.
  - Idling of off-road and on-road equipment is limited to two minutes at any location, except as provided in applicable State regulations (e.g., traffic conditions, safe operating conditions). The contractor must 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.
- **Construction Emissions Minimization Plan.** A Construction Emissions Minimization Plan must be prepared before the start of construction. The plan is required to include estimates of the construction timeline by phase and a description of each piece of off-road equipment required for every construction phase (e.g., equipment type, manufacturer, identification number, model year, tier rating, horsepower, expected fuel usage and hours of operation). Additional details may be included for VDECS (e.g., technology type, serial number, make, model, manufacturer, ARB verification number level). For off-road equipment using alternative fuels, the description must specify the type of alternative fuel being used.
- **Monitoring.** Monitoring and reporting actions are required during construction to document compliance with the ordinance.

- **Waivers.** Waivers to the requirements of the Clean Construction Ordinance can be issued under unusual circumstances (e.g., lack of available qualifying equipment)

For projects located outside the APEZ, the Clean Construction Ordinance requires the following:

- **Equipment Requirements:** Utilize only off-road equipment and off-road engines fueled by biodiesel fuel grade B20 and utilize only off-road equipment that either (a) meets or exceeds Tier 2 standards for off-road engines; or (b) operates with the most effective Verified Retrofits for Off-Road Diesel Vehicles available for the engine type.

The Clean Construction Ordinance would apply to work done by RPD, but not to work done at the India Basin Open Space and 700 Innes properties by BUILD.

San Francisco Protection of Sensitive Uses from Air Pollutants

The City adopted Article 38 of the San Francisco Health Code in 2008, and amended it in 2014, to protect new sensitive uses from existing sources of air pollution by requiring enhanced ventilation and filtration systems in certain areas of the city. The amendments make the Health Code and Building Code consistent with the results of the air quality modeling undertaken to identify the City's APEZ, discussed above.

As revised in 2014, Article 38 of the Health Code applies to all development that includes "sensitive uses," as defined in the code, including all residential units; adult, child and infant care centers; schools; and nursing homes. Article 38 considers all existing known sources of TACs and $PM_{2.5}$, and requires "enhanced ventilation," including filtration of outdoor air, for all such sensitive use projects located in the APEZ. The filtration requirement of Article 38 specifies Minimum Efficiency Reporting Value 13 or equivalent, based on American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2, and requires SFDPH to confer with other City departments and report to the Board of Supervisors regarding technologies it has identified or evaluated that may comply with the requirements of the Health Code.

Article 38 also requires periodic updating of the APEZ Map (about every 5 years) to account for changes in sources of TACs and $PM_{2.5}$ emissions or updated health risk quantification methodologies.

3.7.3 Impacts and Mitigation Measures

Significance Thresholds

The thresholds for determining the significance of impacts in this analysis are consistent with the environmental checklist in Appendix G of the State CEQA Guidelines, which has been modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the proposed project or the variant would result in a significant impact related to Air Quality. Implementation of the proposed project or the variant would have a significant effect on Air Quality if the proposed project or variant would:

- violate any air quality standard or contribute substantially to an existing or projected air quality violation or result in a cumulatively considerable net increase in criteria pollutants;

- conflict with or obstruct implementation of the applicable air quality plan;
- expose sensitive receptors to substantial pollutant concentrations; or
- create objectionable odors affecting a substantial number of people.

Approach to Analysis

In general, the proposed project and variant would generate emissions of criteria air pollutants, ozone precursors, and TACs during construction and operation. The air quality technical report (Appendix F) analyzed regional criteria air pollutants and health risks associated with construction, operations, and overlapping construction-related and operational impacts for the proposed project and variant.[3] The analysis was conducted consistent with guidance and methodologies from local, regional, State, and federal agencies, including BAAQMD (2017c), ARB, the California Office of Environmental Health Hazard Assessment (OEHHA), and EPA. Pursuant to BAAQMD's guidance, California Emissions Estimator Model (CalEEMod) Version 2016.3.1 was used to estimate emissions by off-road construction equipment. Emissions were calculated for each year of construction (conservatively assumed to be 2018 through 2022) and full operation.

Construction of the proposed project or variant is estimated to start as early as spring 2018 and conservatively assumed to last approximately 5 years. These assumptions are used in the CEQA analysis to assure a conservative approach. However, given the project's phases, construction would most likely not be continual. Various activities would occur in a sequential manner. Further, the actual timing of construction would be dependent on approval and funding considerations. As a result, actual construction activities may occur over a less-concentrated time than the assumed five years.[4] Total construction emissions were calculated and were converted from total tons to average pounds per day (lb/day) for each construction phase and subphase. For each month during the construction period, average lb/day for the overlapping construction phases and subphases were totaled to estimate the maximum average daily emissions for the proposed project or variant.

Consistent with CEQA requirements, the analysis evaluated the following emissions impacts:

- *Short-term construction and long-term operational emissions of criteria air pollutants and precursors* associated with the proposed project and variant.
- *Health risk and hazard impacts of construction emissions* from the proposed project and variant on the existing off-site receptors located within 1,000 feet of the project site and future on-site sensitive receptors.
- *Health risk and hazard impacts of operational emissions* from the proposed project and variant on existing off-site sensitive receptors and future on-site sensitive receptors.

Construction Air Quality Sources

Off-Road Equipment

Off-road construction equipment would generate exhaust-related emissions of criteria air pollutants, precursors, and TACs. To calculate emissions, the number and types of construction equipment required for each construction

[3] The emissions analysis in the air quality technical report (Appendix F) is based on the worst-case construction scenario. The actual construction scenario and phases could be extended such that fewer phases would overlap and result in fewer impacts related to air quality and health risks.

[4] The project is seeking a development agreement with a term of 25 years to permit implementation and phasing of the project over this 25-year period of time.

phase and subphase were identified. Other parameters used to quantify emissions from construction equipment were hours of operation per day, horsepower, and load factor for each respective piece of equipment.

CalEEMod contains emission factors from ARB's off-road equipment emissions estimator model, OFFROAD. Both EPA and the State of California have set emissions standards for new off-road equipment engines, ranging from Tier 1 to Tier 4. Tier 1 emission standards were phased in between 1996 and 2000, and Tier 4 interim and final emission standards for all new engines were phased in between 2008 and 2015. The emission factors for the engines were based on the fleet average, which includes all tier engines, for the calendar year of the analysis. Default assumptions for the parameters noted above contained in CalEEMod were used to quantify emissions. Default assumptions typically are conservative, providing a reasonable upper boundary for potential construction emissions.

For the health risk assessment, the $PM_{2.5}$ and diesel PM emissions from off-road construction equipment were represented by area sources and the locations varied by construction phase. Excavation and rough and fine grading were represented by an area source of the same footprint as the project site. For building construction under the proposed project or variant, multiple area sources were located over areas of the project site where buildings are assumed to be built in 2018 through 2022.

On-Road Vehicles

On-road construction sources include construction-worker vehicles, haul trucks, material delivery trucks, and on-site work trucks. CalEEMod was used to estimate emissions from on-road vehicles (running exhaust, brake wear, tire wear, and running losses). Haul trips were estimated based on the total volume of soil imported to and exported from the project site. Default assumptions for parameters such as other vehicles, construction worker trips, trip distance, and vehicle type were obtained from CalEEMod. CalEEMod incorporates emission factors from ARB's on-road emissions inventory model, EMission FACtors (EMFAC) 2014 (EMFAC2014) and were used to quantify emissions (ARB, 2015a).

The health risk assessment modeled, as volume sources, the $PM_{2.5}$ and diesel PM emissions from on-road emissions within 1,000 feet of the project site (Innes Avenue, Hunters Point Boulevard, and a portion of Evans Avenue) from construction worker vehicles, haul trucks, material delivery trucks, and on-site work trucks traveling to and from the project site.

Off-Gassing Materials

Asphalt paving and architectural coating materials used during construction would generate off-gas emissions of ROGs. CalEEMod was used to estimate these off-gas ROG emissions. The data collection process determined the acres of asphalt paving required, which CalEEMod uses to determine associated ROG emissions. CalEEMod contains assumptions for application of architectural coatings that are based on the land use type and square footage of the buildings to be constructed and were used to quantify emissions.

These emissions were not modeled as part of the health risk assessment, as these emissions are small compared to diesel PM emissions from the construction equipment, which are the primary risk driver.

In-Water Work

On the India Basin Shoreline Park property and in the northwest corner of the India Basin Open Space property, a barge may be required for removal and construction of the piers in deeper waters. Air pollutant emissions associated with tugboats, work boats, and other waterborne vessels were quantified using ARB's Harbor Craft Emissions Inventory Database. Hours of operation per day, horsepower, and load factor for each respective piece of equipment were provided by RPD.

For the health risk assessment, the $PM_{2.5}$ and diesel PM emissions from the equipment were modeled as area sources matching the footprint of the in-water work area.

Operational Air Quality Sources

Area Sources

CalEEMod Version 2016.3.1 was used to estimate long-term operational emissions of criteria pollutants and precursors from area sources under both scenarios. Area-source emissions include consumer products, landscape maintenance equipment, and natural gas combustion. Emissions from landscape maintenance equipment and natural gas combustion were estimated using CalEEMod default values based on the size and type of land uses to be developed. Based on consultation between the Planning Department and BAAQMD (Wietgrefe, pers. comm., 2014), emissions from consumer products were estimated using an ROG emissions factor of 0.0000151 pound per square foot per day. This emission factor is based on San Francisco ROG emissions data and land use data. These emissions were was not modeled in the health risk assessment, as these emissions are small compared to diesel PM and gasoline vehicle exhaust emissions.

On-Road Vehicles

Mobile-source emissions under both the proposed project and variant scenarios were calculated using vehicle miles traveled results from CalEEMod and compared with the output for the transportation impact study prepared for the project by Fehr & Peers (San Francisco, 2017). As described for construction on-road vehicles, CalEEMod Version 2016.3.1 incorporates EMFAC2014 mobile-source emission factors.

Stationary Sources

For either the project or the variant, up to eight emergency generators would be installed as emergency power sources for the mixed-use buildings at the 700 Innes property. These emergency generators would generate emissions of criteria pollutants and TACs. Based on information provided by BUILD, either the proposed project or the variant would use up to eight emergency generators (stacks) at four locations (two emergency generators at each location).

Each emergency generator is assumed to meet a minimum of Tier 2 emission standards (before control measures) when they are installed in 2019–2020, and to comply with BAAQMD Regulation 2, Rule 5, New Source Review

Overlap of Construction and Operational Sources

During the years 2020 through 2022, construction and operational sources of emissions were conservatively assumed to overlap, as a portion of the proposed project or variant would be completed while construction is ongoing in other project areas. In the year 2020, operational sources associated with the 900 Innes property, as discussed above, would overlap with ongoing construction at the India Basin Shoreline Park, India Basin Open Space, and 700 Innes properties. In the years 2021 and 2022, operational sources associated with the India Basin Shoreline Park and 900 Innes properties, Phase I at the 700 Innes property, and six of the eight emergency generators proposed at the 700 Innes property would overlap with ongoing construction of Phase II at the 700 Innes and India Basin Open Space properties. The overlapping construction and operational emissions are included in the analysis of criteria pollutants, as well as in the health risk assessment. The health risk assessment modeling conducted for off-site and on-site receptors occupied during 2021 and 2022 include the construction areas, traffic, and six emergency generators that would be installed after Phase I of the construction is complete.

Sources and Methodology for Assessing Toxic Air Contaminants

As discussed in the air quality technical report for this project (Appendix F), a health risk assessment for construction-related and operational emissions was completed to evaluate potential health risks to sensitive receptors. Emissions of $PM_{2.5}$ (from vehicle exhaust, tire and brake wear, road dust, and fugitive dust) are assessed on an annual basis whereas excess cancer risk (from diesel vehicle exhaust, diesel generator exhaust, and ROG from gasoline vehicle exhaust) is a longer term exposure, 30 years.

Typically, construction projects generate diesel PM in a single area for a short period of time. The dose of TACs to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure a person has with the substance. Dose is positively correlated with time, meaning that a longer exposure period to a fixed amount of emissions results in a higher exposure level and higher health risks for the maximally exposed individual.

Project Sources

Consistent with the San Francisco Community Risk Reduction Plan health risk assessment (CRRP-HRA) (SFDPH et al., 2012; SFDPH, 2016b), the air toxics analysis evaluated health risks and $PM_{2.5}$ concentrations imposed by the proposed project and variant on the surrounding community per year of construction. The American Meteorological Society/EPA Regulatory Model (AERMOD) dispersion model (Version 16216r) (40 Code of Federal Regulations Part 51) was used to estimate pollutant concentrations at specific distances from emission sources using 1 year (2008) of hourly meteorological data from the Mission Bay station, consistent with the CRRP-Health Risk Assessment.

Maximum annual for $PM_{2.5}$ and period-average for excess cancer risk plot files generated by AERMOD as described above were input to HARP2 with corresponding TAC emission rates for each phase of construction and the project's operational emissions to calculate project concentration contributions. These concentrations were then used to estimate the long-term effects of TACs on nearby off-site and future on-site residential locations. Note that the CRRP-HRA was conducted in 2012 and HARP2 is based on guidance from the OEHHA (2015). Therefore, the risk values in the CRRP-HRA database were scaled to reflect the changes in methodology.

Receptor locations for on-site and off-site receptors under the proposed project and the variant are shown in Figure 3.7-3 and Figure 3.7-4 (the difference between fewer on-site receptors in Figure 3.7-4), respectively. The analysis assumes that there are no on-site receptors before 2021. The Hamman Hillside Cove buildings included in project Phase I would be exposed to project-generated emissions during subsequent construction phases in 2021 and 2022, as well as operational emissions from emergency generators. The Flats and Earl on-site receptors would be completed as part of Phase II and are exposed to operational emissions only.

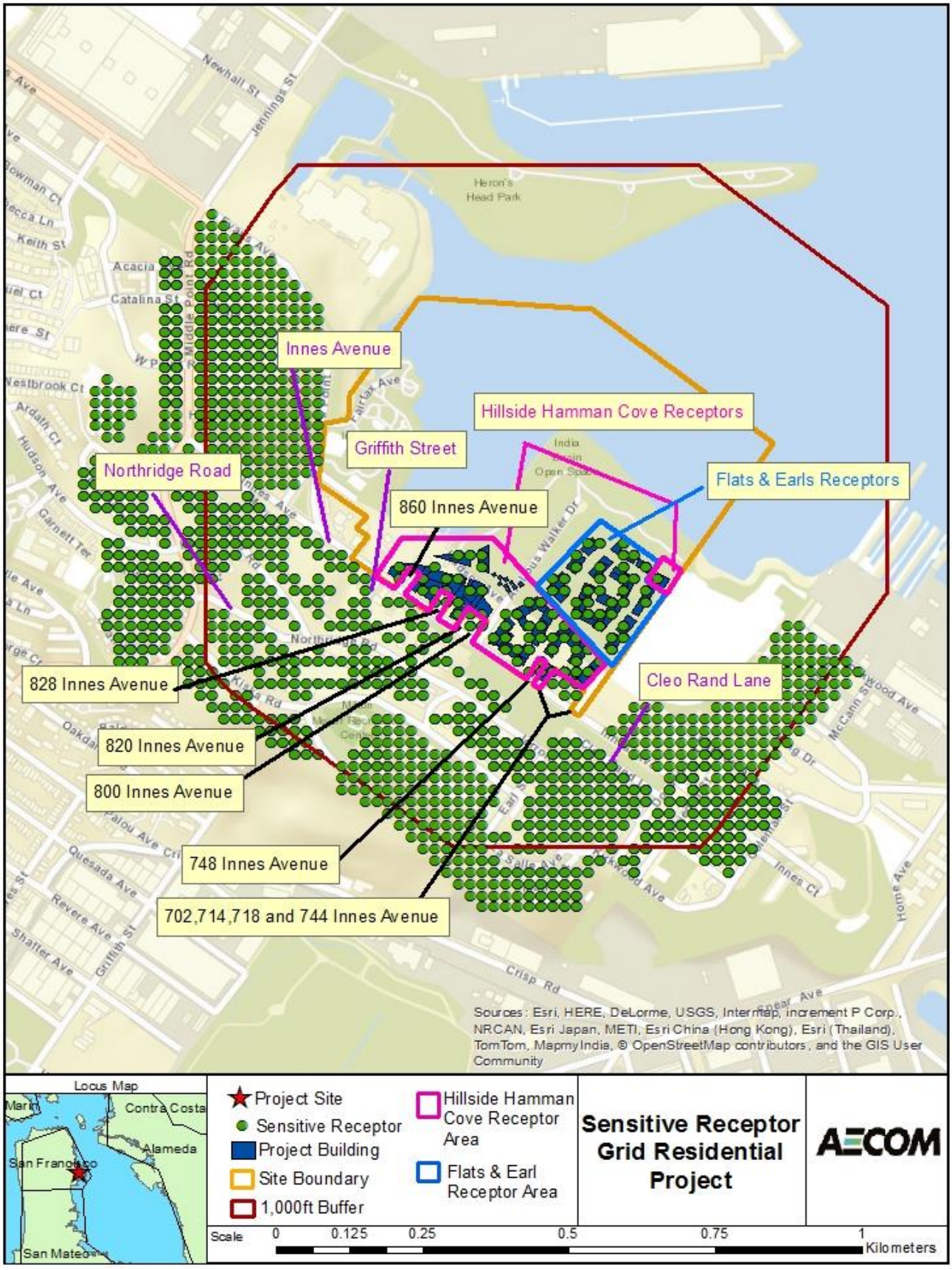

Figure 3.7-3 **Sensitive Receptors Associated with the Proposed Project**

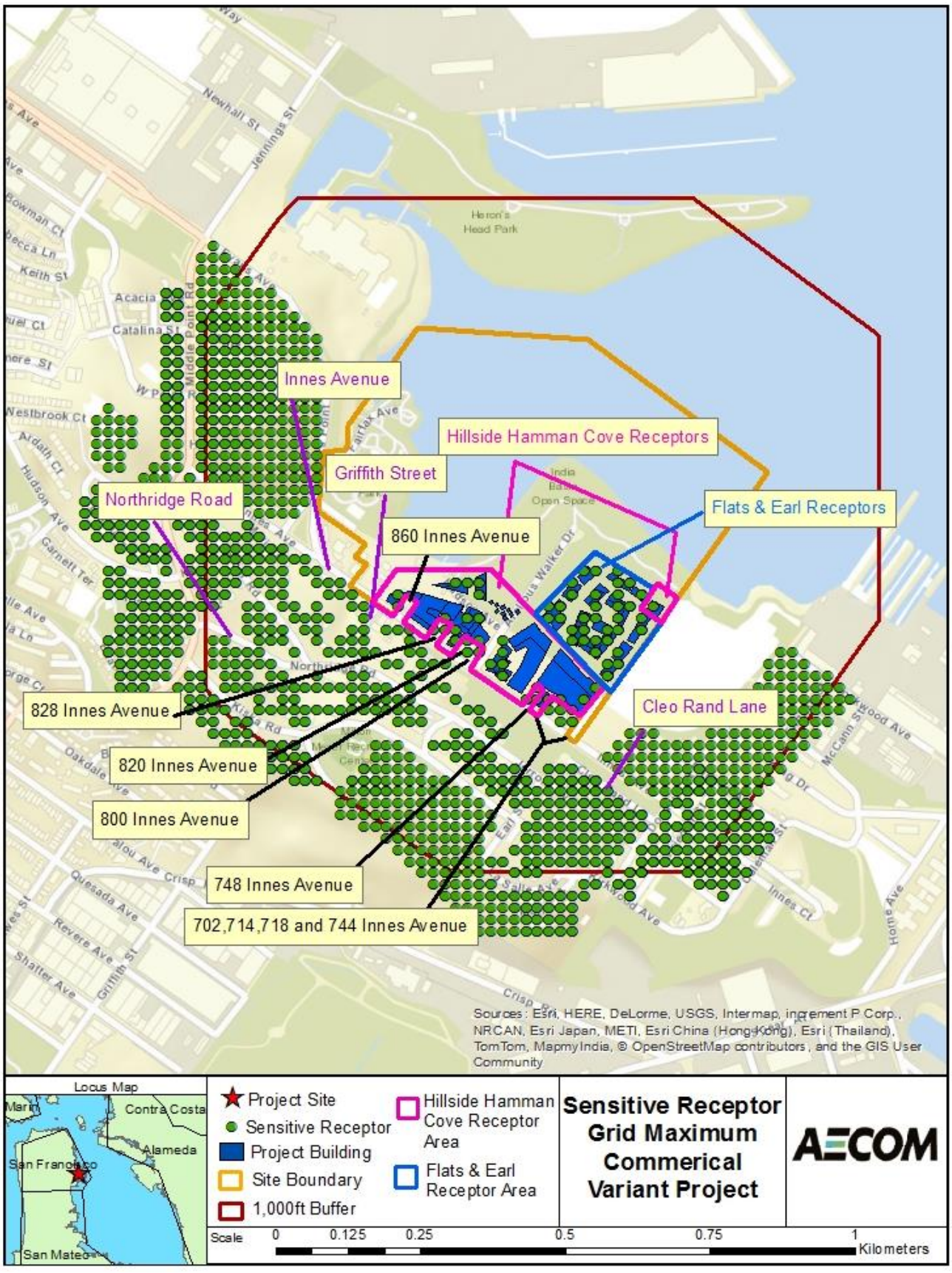

Figure 3.7-4 **Sensitive Receptors Associated with the Variant**

Each emergency generator is assumed to comply with BAAQMD testing limits of no more than 50 hours per year. The generator sizes would range from 300 hp to 600 hp each.

Cumulative Conditions and Nearby Sources

Nearby sources and existing cumulative conditions are derived from the Citywide modeling (CRRP-Health Risk Assessment) that was conducted using AERMOD to assess the emissions from the following primary sources:

- vehicles on local roadways;
- permitted stationary sources including gasoline dispensing stations, prime and standby diesel generators, wastewater treatment plants, recycling facilities, dry cleaners, large boilers, and other industrial facilities;
- port and maritime sources including ships and harbor craft, including cruise ships, excursion boats, and tugboats; and
- Caltrain diesel locomotives and the Transit Center bus depot.

Construction projects were not included in the year 2014 analysis, which was used as the existing conditions in this analysis. The nearby PG&E Hunters Point Shoreline Area Cleanup has been completed based on March 2017 aerial imagery, and the area is being used for small events. As future uses have yet to be determined no future uses were included in the health risk assessment. The Hunters Point Shipyard Phase 1 and 2 Redevelopment will include residential units at the corner of Innes Avenue and Donahue Street, as well as the Hillside area (Navy Road/Block 48), and along Donahue Street (Block 55E) toward the Bay. The portion of Block 48 located within 1,000 feet of the proposed project is scheduled to be completed in 2018. Additional construction in Block 48 would be beyond 1,000 feet of the proposed project or variant. Block 1 and a portion of Block 55E will be located within 1,000 feet of the proposed project or variant and, as of March 2017, had yet to be built. Under Hunters Point Shipyard Phase 2, Northside Park Parcels 1 and 2, HP-01, 2, and 3 will all be built during Major Phase 1 during 2017 through 2022 and would overlap with the proposed project or variant.

Ramboll Environ conducted an air quality assessment as part of an update to the EIR for the Hunters Point Shipyard Phase 1 and 2 Redevelopment in 2013 and provided electronic files associated with the Hunters Point Phase 1 and 2 construction modeling. Impacts associated with the Hunters Point construction were added to the annual $PM_{2.5}$ values and excess cancer risk values at the equivalent receptors in the existing condition (CRRP-Health Risk Assessment [year 2014]) to create the baseline condition as discussed in Appendix F. The project-related impacts are added to the baseline to calculate the combined impact of the existing concentrations, concentrations from Hunters Point construction, and concentrations from construction of the proposed project or variant.

In addition, there are other current or future construction projects whose emissions have not been incorporated into the existing Citywide health risk modeling, as BAAQMD assumed that smaller projects would be assessed individually. BAAQMD has identified a distance of 1,000 feet as an appropriate zone of influence for assessing health risk impacts and specifies that cumulative sources represent the combined total risk values of each individual source within the 1,000-foot evaluation zone. The Blue Greenway/Bay Trail, Hunters View, Executive Park, Brisbane Baylands, Visitacion Valley/Schlage Lock, Eastern Neighborhoods Plan, Muni Forward, *San Francisco Bicycle Plan*, Proposed Expansion of the Auxiliary Water Supply System, and the Biosolids Digester Facilities Project were not explicitly assessed as part of the cumulative analysis. These projects are not

within 1,000 feet of the project site and are not required to be explicitly modeled as part of the health risk assessment modeling.

For future cumulative conditions (CRRP-Health Risk Assessment [year 2040]), vehicle traffic associated with the Hunters Point and Candlestick Point redevelopment projects would generate vehicle traffic that would travel within 1,000 feet of the project area. As emissions from these projects were already included in the 2040 future baseline conditions. Therefore, only the Project Conditions were added to the Cumulative Conditions for the year 2040 to assess future cumulative conditions with the project or variant. The 2040 future baseline concentrations are slightly higher for $PM_{2.5}$ than the existing conditions because of this increased traffic in the project area from these other projects before addition of the project impacts to the baseline conditions.

Specific Thresholds of Significance

Consistency with Air Quality Plan Impacts

The applicable air quality plan is BAAQMD's 2017 Bay Area Clean Air Plan, which identifies measures to:

- reduce emissions and reduce 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 the communities most heavily affected by air pollution; and
- reduce GHG emissions to protect the climate.

The proposed project or variant would be consistent with the Bay Area Clean Air Plan if it would support the plan's goals, include applicable control measures from the Bay Area Clean Air Plan, and would not disrupt or hinder implementation of any control measures from the plan. Consistency with this plan is the basis for determining whether the proposed project or variant would conflict with or obstruct implementation of an applicable air quality plan.

Ambient Air Quality Impacts

As discussed previously, air pollutant standards are identified for six criteria air pollutants in accordance with the Clean Air Act and California Clean Air Act. By its very nature, regional air pollution is largely a cumulative impact, in that no single project is large enough that it alone can result in nonattainment of air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality impacts. If a project's contribution to cumulative air quality impacts would be considerable, then the project's impact on air quality would be significant.

The construction and operational phases of land use projects may contribute to regional emissions of criteria air pollutants. Table 3.7-7 identifies significance thresholds for criteria air pollutants as provided by BAAQMD, followed by a discussion of each threshold (BAAQMD, 2017c). Projects that would result in emissions of criteria air pollutants less than 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 Clean Air Act and California Clean Air Act 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, specifies that any new source emitting criteria air pollutants above a specified emissions limit must offset those emissions. For ozone precursors, ROG and NO_X, the offset emissions level is an annual average of 10 tons per year (tpy) (or 54 parts 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.

Table 3.7-7: Criteria Air Pollutant Thresholds of Significance

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lb/day)	Average Daily Emissions (lb/day)	Maximum Annual Emissions (tpy)
ROG	54	54	10
NO_X	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
Fugitive Dust	Construction Dust Ordinance or other best management practices	Not Applicable	

Notes: lb/day = pounds per day; NO_X = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases; tpy = tons per year
Source: BAAQMD, 2017c

Ozone Precursors

As discussed previously, the SFBAAB is currently designated as nonattainment for ozone and PM. Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving ROG and NO_X. The potential for a project to result in a cumulatively considerable net increase in criteria air pollutants, which may contribute to an existing or projected air quality violation, is based on the Clean Air Act and California Clean Air Act 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 states that any new source emitting criteria air pollutants above a specified emissions limit must offset those emissions. For ozone precursors ROG and NO_X, the offset emissions level is an annual average of 10 tpy (or 54 lb/day) (BAAQMD, 2009:17). These levels represent emissions below which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants.

Although this regulation applies to new or modified stationary sources, land use development projects generate ROG and NO_X emissions as a result of increases in vehicle trips, architectural coatings, and construction activities. Therefore, the above thresholds can be applied to the construction and operational phases of land use projects. Projects resulting in emissions below these thresholds would not be considered to contribute to an existing or projected air quality violation or result in a considerable net increase in ROG and NO_X emissions. Because construction activities are temporary, only average daily thresholds are applicable to construction-phase emissions.

Particulate Matter (PM_{10} and $PM_{2.5}$)

BAAQMD has not established an offset limit for $PM_{2.5}$. However, the emissions limit in the federal New Source Review (NSR) for stationary sources in nonattainment areas is an appropriate significance threshold. For PM_{10} and $PM_{2.5}$, the emissions limits under NSR are 15 tpy (82 lb/day) and 10 tpy (54 lb/day), respectively. These emissions limits represent the levels below which a source is not expected to have an impact on air quality (BAAQMD, 2009:16). Similar to the ozone precursor thresholds identified above, land use development projects typically generate PM emissions as a result of increases in vehicle trips, space heating and natural gas combustion, landscape maintenance, and construction activities. Therefore, the above thresholds can be applied to the construction and operational phases of a land use project. Again, because construction activities are temporary, only average daily thresholds are applicable to construction-phase emissions.

Fugitive Dust

Fugitive dust emissions are typically generated during construction phases. Studies have shown that applying best management practices (BMPs) at construction sites significantly controls fugitive dust (WRAP, 2006) and individual measures have been shown to reduce fugitive dust by anywhere from 30 to 90 percent (BAAQMD, 2009:27). BAAQMD has identified BMPs to control fugitive dust emissions from construction activities (BAAQMD, 2011). The City's Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008) requires measures to control fugitive dust. BMPs employed in compliance with this ordinance are an effective strategy for controlling construction-related fugitive dust.

Other Criteria Pollutants

Regional concentrations of CO in the Bay Area have not exceeded State standards in the past 11 years and SO_2 concentrations have never exceeded the standards. The primary source of CO emissions from development projects is vehicle traffic. Construction-related SO_2 emissions represent a negligible portion of the total basinwide emissions and construction-related CO emissions represent less than 5 percent of the Bay Area's total basinwide CO emissions.

As discussed previously, the Bay Area is in attainment for both CO and SO_2. Furthermore, BAAQMD has demonstrated, based on modeling, that to exceed the CAAQS of 9.0 parts per million (ppm) (8-hour average) or 20.0 ppm (1-hour average) for CO, project traffic in addition to existing traffic would need to exceed 44,000 vehicles per hour at affected intersections (or 24,000 vehicles per hour where vertical and/or horizontal mixing is limited). Therefore, given the Bay Area's attainment status and the limited CO and SO_2 emissions that could result from development projects, such projects would not result in a cumulatively considerable net increase in CO or SO_2, and quantitative analysis is not required.

Local Air Quality Health Risks/Hazards Impacts

The thresholds of significance used to evaluate health risks from new sources of TACs are based on the potential for a proposed project to substantially affect the geography and severity of the APEZ at the locations of sensitive receptors.

The project site is not located in an APEZ or near a major transportation thoroughfare, but is located in a health-vulnerable zip code (94124). Therefore, a lower significance standard is required to ensure that the contribution of

the proposed project or variant to existing health risks would not be significant. The proposed project or variant would result in a significant impact if the excess cancer risk would exceed 90 in a million or annual $PM_{2.5}$ concentrations would exceed 9 $\mu g/m^3$ and the the project's contribution would be greater than 7 in a million or 0.2 $\mu g/m^3$, respectively.

Odors Impacts

The impact analysis qualitatively evaluates the types of land uses proposed to evaluate whether major sources of anticipated odors would be present and, if so, whether those sources would likely generate objectionable odors.

Cumulative Impacts

The cumulative impact analysis assumes that construction and operation of other projects in the geographical area, listed in Table 3-1, would be required to comply with the same regulatory requirements as the project, which may serve to avoid and reduce many impacts to less than significant on a project-by-project basis. The analysis then considers whether there would be a significant adverse cumulative impact associated with project implementation in combination with past, present, and probable future projects in the geographical area, and if so, whether the project's incremental contribution to the cumulative impact would be considerable. Both conditions must apply for a project's contribution to cumulative effects to be deemed cumulatively considerable (significant). If so, then mitigation measures are identified to reduce the project's contribution to the extent feasible.

The contribution of a project's individual air pollutant 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 sufficient in size to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality conditions.

As described 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 to result in a considerable contribution to cumulative regional air quality impacts.

Similarly, the health risk assessment takes into account the cumulative contribution of localized health risks to sensitive receptors from sources included in the Citywide modeling (CRRP-Health Risk Assessment) in addition to the project's sources and other cumulative project sources as discussed above.

Project Features

Both the proposed project and the variant would involve demolishing some of the existing buildings on the project site and constructing a mixed-use development that would include residential, commercial, institutional/ educational, research and development, parking, and open space uses. The construction and operation of either the proposed project or the variant would result in emissions of air pollutants. Also, emergency generators would be designed to emit exhaust from the roof elevations of the proposed buildings where they would be located.

Impact Evaluation

Impact AQ-1: The proposed project or variant would generate emissions of criteria pollutants and precursors during construction, operations, and overlapping construction and operational activities that could 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 pollutants. ***(Significant and Unavoidable with Mitigation)***

Construction—Criteria Air Pollutants

Construction emissions are described as "short term" or temporary; however, they have the potential to represent a significant impact with respect to air quality. Construction of either the proposed project or the variant would temporarily generate emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$. ROG and NO_X emissions are associated primarily with mobile equipment exhaust, including off-road construction equipment and on-road motor vehicles.

India Basin Shoreline Park Property

Under the proposed project and variant, construction at the India Basin Shoreline Park property would involve emissions of criteria air pollutants during the demolition, grading, building construction, paving, and architectural coating phases. Construction would span approximately 1 year, estimated to occur in 2020, and would involve a maximum of 12 workers per day.

The primary source of emissions during construction would be exhaust from mobile equipment, including off-road equipment and hauling trips during the grading phase. The grading phase for India Basin Shoreline Park and 900 Innes would involve a combined estimate of approximately 6,860 hauling trips. Under either the proposed project or the variant, estimated average daily unmitigated emissions during construction at the India Basin Shoreline Park property would be 3 lb/day of ROG, 32 lb/day of NO_X, 1 lb/day of PM_{10}, and 1 lb/day of $PM_{2.5}$ (Table 3.7-8).

Table 3.7-8: Proposed Project and Variant—India Basin Shoreline Park: Average Daily Construction Emissions

Construction Year/Phase	ROG	NOx	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
Maximum Average Daily (2020) Construction Emissions (lb/day)	3.2	31.8	1.2	1.1

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases
Maximum average daily emissions represent the greatest emissions that would occur over the entire construction period based on the overlapping construction phases and subphases. Maximum average daily emissions would occur in 2020 for this property.
Source: Compiled by AECOM in 2017

900 Innes Property

Under the proposed project and variant, construction at the 900 Innes property would involve emissions of criteria air pollutants during the demolition, grading, building construction, paving, and architectural coating phases. Construction would span approximately 1 year and would involve a maximum of 12 workers per day.

The primary source of emissions during construction would be exhaust from mobile equipment, including off-road equipment and hauling trips during grading. As discussed above, the grading phase for India Basin Shoreline Park and 900 Innes would involve a combined estimate of approximately 6,860 hauling trips Under either the proposed project or the variant, the average daily unmitigated emissions during construction at the 900 Innes property would be 3 lb/day of ROG, 30 lb/day of NO_X, 2 lb/day of PM_{10}, and 2 lb/day of $PM_{2.5}$ (Table 3.7-9).

Table 3.7-9: Proposed Project and Variant—900 Innes: Average Daily Construction Emissions

Construction Year/Phase	ROG	NO_X	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
Maximum Average Daily (2019) Construction Emissions (lb/day)	3.4	29.4	1.5	1.4

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases
Maximum average daily emissions represent the greatest emissions that would occur over the entire construction period based on the overlapping construction phases and subphases. Maximum average daily emissions would occur in 2019 for this property.
Source: Compiled by AECOM in 2017

India Basin Open Space Property

Under the proposed project and variant, construction at the India Basin Open Space property would generate emissions of criteria air pollutants during grading, building construction, paving, and architectural coating. Construction would span approximately 1 year and would involve approximately 10–12 workers per day.

The primary source of emissions during construction would be exhaust from mobile equipment. Under either the proposed project or the variant, the average daily unmitigated emissions during construction at the India Basin Open Space property would be 2 lb/day of ROG, 17 lb/day of NO_X, 1 lb/day of PM_{10}, and 1 lb/day of $PM_{2.5}$ (Table 3.7-10).

Table 3.7-10: Proposed Project and Variant—India Basin Open Space: Average Daily Construction Emissions

Construction Year/Phase	ROG	NOx	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
Maximum Average Daily (2020–2021) Construction Emissions (lb/day)	1.9	17.1	0.9	0.9

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases
Maximum average daily emissions represent the greatest emissions that would occur over the entire construction period based on the overlapping construction phases and subphases. Maximum average daily emissions would occur in 2020 and 2019 for this property.
Source: Compiled by AECOM in 2017

700 Innes Property

Under the proposed project and variant, construction at the 700 Innes property would generate emissions of criteria air pollutants during grading and excavation, and construction of the Hamman Hillside Cove, Big Green, and Flats and Earl. Typical construction activities would include the demolition, grading, building construction, paving, and architectural coating phases. It is conservatively assumed that construction would span approximately 5 years and would involve a maximum of 189 workers per day during the Flats and Earl construction.

The primary source of emissions during construction would be exhaust from mobile equipment, including off-road equipment and hauling trips during the demolition and grading phases. The demolition and grading phase would involve approximately 140 and 68,200 hauling trips, respectively. Under the proposed project, the average daily unmitigated emissions during construction at the 700 Innes property would be 49 lb/day of ROG, 216 lb/day of NO_X, 4 lb/day of PM_{10}, and 4 lb/day of $PM_{2.5}$ (Tables 3.7-11 and 3.7-12). Under the variant, the average daily unmitigated emissions during construction at the 700 Innes property would be 44 lb/day of ROG, 219 lb/day of NOx, 3 lb/day of PM_{10}, and 3 lb/day of $PM_{2.5}$ (Tables 3.7-11 and 3.7-12).

Table 3.7-11: Proposed Project—700 Innes: Average Daily Construction Emissions

Construction Year/Phase	ROG	NOx	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
Maximum Average Daily (2018–2019) Construction Emissions (lb/day)	48.9	215.7	4.3	4.0

Notes: NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases
Maximum average daily emissions represent the greatest emissions that would occur over the entire construction period based on the overlapping construction phases and subphases. Maximum average daily emissions for each pollutant would vary by year: Maximum average daily ROG emissions would occur in 2020 and 2021, and maximum average daily NOx and PM emissions would occur in 2018 and 2019.
Source: Compiled by AECOM in 2017

Overall Construction Impact for Criteria Air Pollutants

Tables 3.7-13 and 3.7-14 present the average daily emissions associated with the proposed project and variant, respectively, for all project site properties with overlapping construction phases. The primary source of construction-related emissions would be exhaust from mobile equipment, including off-road equipment and hauling trips during the demolition and grading phases. The majority of the emissions would result from construction at the 700 Innes property. Additional modeling details are provided in Appendix F.

Table 3.7-12: Variant—700 Innes: Average Daily Construction Emissions

Construction Year/Phase	ROG	NOx	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
Maximum Average Daily (2019–2020) Construction Emissions (lb/day)	48.4	218.8	4.3	4.0

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases
Maximum average daily emissions represent the greatest emissions that would occur over the entire construction period based on the overlapping construction phases and subphases.
Source: Compiled by AECOM in 2017

Table 3.7-13: Proposed Project: Average Daily Construction Emissions

Construction Year/Phase	Emissions (lb/day)			
	ROG	NOx	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
2018	37.8	215.7	4.3	4.0
2019	41.2	245.0	5.8	5.4
2020	54.0	140.8	5.7	5.3
2021	50.9	109.0	4.5	4.2
2022	18.3	39.0	1.7	1.6
Maximum Average Daily Construction Emissions	54.0	245.0	5.8	5.4
Threshold	54	54	82	54
Exceed Threshold?	NO	YES	NO	NO

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases
Maximum average daily emissions represent the greatest emissions that would occur over the entire construction period based on the overlapping construction phases and subphases.
Source: Compiled by AECOM in 2017

Table 3.7-14: Variant: Average Daily Construction Emissions

Construction Year/Phase	Emissions (lb/day)			
	ROG	NOx	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
2018	33.0	218.8	4.3	4.0
2019	36.4	248.2	5.8	5.4
2020	53.5	150.1	6.0	5.6
2021	50.4	118.4	4.8	4.5
2022	22.6	45.1	2.0	1.9
Maximum Average Daily Construction Emissions	53.5	248.2	6.0	5.6
Threshold	54	54	82	54
Exceed Threshold?	NO	YES	NO	NO

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases
Maximum average daily emissions represent the greatest emissions that would occur over the entire construction period based on the overlapping construction phases and subphases.
Source: Compiled by AECOM in 2017

As shown in Tables 3.7-13 and 3.7-14, construction-related emissions of NO_X under either the proposed project or the variant would exceed the thresholds of significance. Therefore, construction emissions could violate an ambient air quality standard or contribute substantially to an existing violation. Thus, this overall construction air quality impact could be significant. Mitigation Measures M-AQ-1a through M-AQ-1d would be implemented to reduce NO_X emissions to the greatest extent feasible. Although the RPD portion of the proposed project or variant would be subject to the requirements of the City's Clean Construction Ordinance, the mitigation measure requirements in M-AQ-1a would exceed the requirements of the City's Clean Construction Ordinance. Mitigation Measures M-AQ-1a and M-AQ-1d would be consistent with or exceed the requirement of this ordinance and would apply to all project site properties during construction of the proposed project or variant.

Mitigation Measure M-AQ-1a: Minimize Off-Road Construction Equipment Emissions

The project sponsors shall comply with the following requirements:

A. Construction Emissions Minimization Plan. *Before a construction permit is issued for each project phase or property, as applicable, the project sponsors shall submit construction emissions minimization plans to the Environmental Review Officer (ERO) or the ERO's designated representative for review and approval. The construction emissions minimization plans shall detail compliance with the following requirements:*

(1) All off-road equipment greater than 25 hp and operating for more than 20 total hours over the entire duration of construction activities shall meet the following requirements:

a) Where access to alternative sources of power is reasonably available, portable diesel engines shall be prohibited.

b) Where portable diesel engines are required because alternative sources of power are not reasonably available, all off-road equipment shall have engines that meet either EPA or ARB Tier 4 Final off-road emission standards. If engines that comply with Tier 4 Final off-road emission standards are not commercially available, then the project sponsor shall provide the next cleanest piece of off-road equipment as provided by the step-down schedules in Table M-AQ-1a-1.

i. For purposes of this mitigation measure, "commercially available" shall mean the availability of Tier 4 Final engines taking into consideration factors such as (i) critical-path timing of construction; (ii) geographic proximity to the project site of equipment; and (iii) geographic proximity of access to off-haul deposit sites.

ii. The project sponsor shall maintain records concerning its efforts to comply with this requirement.

TABLE M-AQ-1a-1
OFF-ROAD EQUIPMENT COMPLIANCE STEP-DOWN SCHEDULE

Compliance Alternative	*Engine Emissions Standard*	*Emissions Control*
1	*Tier 4 Interim*	*N/A*
2	*Tier 3*	*ARB Level 3 VDECS*
3	*Tier 2*	*ARB Level 3 VDECS*

How to use the table*: If the requirements of (A)(1)(b) cannot be met, then the project sponsor would need to meet Compliance Alternative 1. Should the project sponsor not be able to supply off-road equipment meeting Compliance Alternative 1, then Compliance Alternative 2 would need to be met. Should the project sponsor not be able to supply off-road equipment meeting Compliance Alternative 2, then Compliance Alternative 3 would need to be met, etc.*

(2) The project sponsor shall require in its construction contracts that the idling time for off-road and on-road equipment be limited to no more than 2 minutes, except as provided in exceptions to the applicable State regulations regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, and Chinese) in designated queuing areas and at the construction site to remind operators of the 2-minute idling limit.

(3) The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications.

(4) The construction emissions minimization plan shall include estimates of the construction timeline by phase with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information may include but are 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: 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, reporting shall indicate the type of alternative fuel being used.

(5) The project sponsor shall keep the construction emissions minimization plan available for public review on-site during working hours. The project sponsor shall post at the perimeter of the project site a legible and visible sign summarizing the requirements of the plan. The sign shall also state that the public may ask to inspect the construction emissions minimization plan at any time during working hours, and shall explain how to request inspection of the plan. Signs shall be posted on all sides of the construction site that face a public right-of-way. The project sponsor shall provide copies of the construction emissions minimization plan to members of the public as requested.

B. Reporting. *Quarterly reports shall be submitted to the ERO or the ERO's designated representative indicating the construction phase and off-road equipment information used during each phase, including the information required in A(4).*

(1) Within 6 months of the completion of construction activities, the project sponsor shall submit to the ERO or the ERO's designated representative a final report summarizing construction activities. The final report shall indicate the start and end dates and duration of each construction phase. For each phase, the report shall include detailed information required in A(4).

C. Certification Statement and On-site Requirements. *Before the start of construction activities, the project sponsor must certify that it is in compliance with the construction emissions minimization plan, and that all applicable requirements of the plan have been incorporated into contract specifications.*

Mitigation Measure M-AQ-1b: Minimize On-Road Construction Equipment Emissions

The project sponsors shall include in all construction contracts a requirement for construction contractors to implement the following measures to reduce construction haul truck emissions, to the extent commercially available (taking into consideration such factors as critical-path timing and geographic proximity).

A. Engine Requirements

(1) All on-road heavy-duty diesel trucks with a gross vehicle weight rating of 19,500 pounds or greater used in connection with the project site (such as haul trucks, water trucks, dump trucks, and concrete trucks) shall be model year 2010 or newer, where feasible in light of commercial availability.

B. Construction Emissions Minimization Plan. *As part of the construction emissions minimization plan identified above in Mitigation Measure M-AQ-1a, Section A, the construction contract shall state, in reasonable detail, how the contractor shall meet the requirements of Section A.*

(1) The construction emissions minimization plan shall include the model year of the heavy-duty trucks with a gross vehicle weight rating of 19,500 pounds or greater and estimates of the expected fuel usage (or miles traveled or hours of operation, as relevant) 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.

(2) See Mitigation Measure M-AQ-1a, Section A, Part 5.

C. Reporting. *See Mitigation Measure M-AQ-1a, Section* B.

D. Monitoring. *See Mitigation Measure M-AQ-1a, Section C.*

Mitigation Measure M-AQ-1c: Utilize Best Available Control Technology for In-Water Construction Equipment

The project sponsors shall include in construction contracts a requirement to implement the following measures to reduce emissions from in-water equipment:

A. Engine Requirements

(1) The construction barge shall have engines that meet or exceed EPA marine engine Tier 3 emissions standards, if commercially available (taking into consideration such factors such as critical-path timing and geographic proximity).

(2) The project sponsors shall also ensure that the construction work boat engines shall be model year 2005 or newer or meet NO_X and PM emissions standards for that model year, if commercially available (taking into consideration such factors such as critical-path timing and geographic proximity).

B. Construction Emissions Minimization Plan. *As part of the construction emissions minimization plan identified above under Mitigation Measure M-AQ-1a, Section A, the contractor shall state, in reasonable detail, how the contractor shall meet the requirements of Section A.*

(1) The construction emissions minimization 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.

(2) See Mitigation Measure M-AQ-1a, Section A, Part 5.

C. Reporting. *See Mitigation Measure M-AQ-1a, Section B.*

D. Monitoring. *See Mitigation Measure M-AQ-1a, Section C.*

Mitigation Measure M-AQ-1d: Offset Emissions for Construction and Operational Ozone Precursor (NOx and ROG) Emissions

Before the first construction permit is issued, the project sponsors, with oversight of the ERO or the ERO's designated representative, shall implement one of the following measures:

(1) Directly fund or implement specific emissions offset project(s) within the SFBAAB to achieve the one-time reduction of 6 tons of ozone precursor emissions. This amount is intended to offset the maximum emissions year during construction or operations (or overlapping construction and operations) that would exceed the 10 tons per year thresholds for each NOx and ROG, which would occur during operations of the fully built project. Specifically, the worst-case mitigated operational emissions are associated with the variant and are estimated at 11.96 tons per year of ROG emissions and 14 tons per year of NOx emissions, which would exceed the 10-tons NOx and ROG annual thresholds by 1.96 tons and 4 tons, respectively. Thus, the combined ozone precursor emissions (NOx and ROG) would exceed the annual 10-tons threshold in total by 5.96 tons and requires an offset of 6 tons of NOx and ROG emissions. To qualify under this mitigation measure, the specific offset project(s) shall result in 6 tons of NOx and ROG emissions reductions within the SFBAAB that would not otherwise be achieved through compliance with existing regulatory requirements. Preferred offset project(s) are implemented locally within the City and County of San Francisco. Before implementation of the offset project(s), the project sponsors shall obtain the ERO's approval of the offset project(s) by providing documentation of the associated estimated reduction amount of NO_X and ROG emissions (in tons per year) within the SFBAAB. The project sponsors shall also notify the ERO within 6 months of completion of the offset project(s) for verification.

or

(2) Pay a one-time mitigation emissions offset fee to the BAAQMD Bay Area Clean Air Foundation to fund BAAQMD's reduction effort in the SFBAAB of 6 tons of ozone precursor emissions. Specifically, the worst-case mitigation offset fee is asociated with the variant offset amount of 6 annual tons of combined NO_X and ROG emissions and will be at a cost per ton consistent with Appendix G of the Carl Moyer grant guidelines in effect at the date of the first construction permit issuance. This fee is currently estimated to be $30,000 per weighted ton per year of ozone precursor emissions (plus a 5 percent administrative fee). The mitigation offset fee shall fund one

or more emissions reduction projects within the SFBAAB. This one-time fee is intended to fund reduction project(s) for purposes of offsetting the estimated annual tonnage of combined construction and operational emissions under the variant buildout scenario, which is conservatively assumed to occur in 2022. The project sponsors shall also provide documentation of offset fee payment to the ERO.

Acceptance of this fee by BAAQMD shall serve as acknowledgment and a commitment by BAAQMD to one or more emissions reduction project(s) within one year of receipt of the mitigation fee to achieve the emissions reduction objectives specified above. BAAQMD shall provide documentation to the ERO and to the project sponsors describing the emission reduction project(s) funded by the mitigation fee, including the amount of emissions of ROG and NO_X reduced (in tons per year) within the SFBAAB from the emissions reduction project(s). If any portion of the mitigation offset fee remains unspent after implementation of the emission reduction project(s), the project sponsors shall be entitled to a refund in that amount from BAAQMD. To qualify under this mitigation measure, the specific emissions reduction project(s) shall result in emission reductions within the SFBAAB that would not otherwise be achieved through compliance with existing regulatory requirements.

If the project sponsors commit to the land use assumptions consistent with the proposed project (rather than with the variant) for the term of the development agreement, the one-time reduction of 6 tons of ozone precursor emissions listed above under (1) and (2) shall be reduced to a one-time reduction of 3 tons of ozone precursor emissions. This 3 tons reduction amount is intended to offset the maximum emissions year conservatively assumed to occur during the second year of proposed project construction in 2019. Specifically, the mitigated construction related NOx emissions for the proposed project are estimated at 12.60 tons, which would exceed the 10-tons threshold by 2.6 tons and require an offset of 3 tons of NOx.

Mitigation Measure M-AQ-1a requires engines in diesel-fueled construction equipment exceeding 50 hp to meet Tier 4 Final emission standards. Interim Tier 4 and Tier 4 Final emission standards went into effect between 2008 and 2015, with the effective date dependent on engine horsepower. Based on the start date of construction for the proposed project and variant, Tier 4 Final engines for off-road equipment are anticipated to be available, and the step-down compliance schedule process would not typically be granted. The improvements in emissions standards required by ARB for off-road construction equipment with Tier 4 Final engines would result in an additional 94 percent reduction in NO_X emissions from the use of Tier 2 engines, depending on the horsepower of the equipment (SCAQMD, 2017). The emission reductions associated with Mitigation Measure M-AQ-1a were quantified and included in Tables 3.7-15 and 3.7-16.

Mitigation Measure M-AQ-1b could reduce on-road truck NOx emissions by up to 96 percent per vehicle (EPA 2016a). However, the overall reduction in emissions for the project would depend on the model years of the fleet and the ability of the contractor(s) to locate newer year trucks. Mitigation Measure M-AQ-1c could reduce NO_X emissions by 80 percent per marine engine, depending on the availability of newer year boat and barge engines (EPA, 2016b). However, because of uncertainty regarding the availability of the newer year vehicles called for by Mitigation Measures M-AQ-1b and M-AQ-1c, estimated emissions reductions from these measures cannot be

calculated with certainty. Therefore, emission reductions associated with those measures were not estimated for the purpose of this analysis.

As shown in Tables 3.7-15 and 3.7-16, Mitigation Measure M-AQ-1a would reduce construction-related emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$; however, NO_X emissions would continue to exceed the threshold. Therefore, implementation of Mitigation Measure M-AQ-1d, which would require offsets for the maximum year of combined construction and operational emissions as shown in Tables 3.7-24 and 3.7-25 and discussed below under "Overlap of Construction and Operation," has the potential to reduce construction-related NO_X emissions. While use of the step-down schedules in Table M-AQ-1a-1 could alter the residual NO_X emissions requiring offsets under Mitigation Measure M-AQ-1d, use of these waivers is not expected to occur frequently enough to alter the amount of offsets that would be required under Mitigation Measure M-AQ-1d. However, at this time, the project sponsors have not identified a specific offset project that could achieve the amount of offset needed to fully offset otherwise unmitigated ROG and NO_X emissions by Mitigation Measures M-AQ-1a through M-AQ-1c. BAAQMD may be able to identify and implement an emissions reduction project funded with the fee provided by Mitigation Measure M-AQ-1d. However, implementation of an offset project through BAAQMD is outside the control of the project sponsors or the City and is therefore uncertain. Thus, even with the implementation of Mitigation Measures M-AQ-1a through M-AQ-1d, both the proposed project and the variant would violate an air quality standard, contribute to an existing or projected air quality violation, and cause a cumulatively considerable net increase in criteria air pollutants during construction. This overall construction air quality impact of the proposed project or variant would be *significant and unavoidable with mitigation*.

Table 3.7-15: Proposed Project: Mitigated Average Daily Construction Emissions

Construction Year/Phase	Emissions (lb/day)			
	ROG	NOx	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
2018	31.7	145.7	0.8	0.7
2019	32.4	149.7	0.9	0.8
2020	45.2	53.6	0.5	0.5
2021	44.0	41.6	0.4	0.4
2022	15.3	12.2	0.1	0.1
Maximum Average Daily Construction Emissions	45.2	149.7	0.9	0.8
Threshold	54	54	82	54
Exceed Threshold?	NO	YES	NO	NO

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases
Maximum average daily emissions represent the greatest emissions that would occur over the entire construction period based on the overlapping construction phases and subphases.
Source: Compiled by AECOM in 2017

Table 3.7-16: Variant: Mitigated Average Daily Construction Emissions

Construction Year/Phase	Emissions (lb/day)			
	ROG	NOx	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
2018	27.0	149.3	0.8	0.7
2019	27.7	153.3	0.9	0.8
2020	40.6	57.3	0.5	0.5
2021	39.3	45.2	0.4	0.4
2022	15.3	12.3	0.1	0.1
Maximum Average Daily Construction Emissions	40.6	153.3	0.9	0.8
Threshold	54	54	82	54
Exceed Threshold?	NO	YES	NO	NO

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases
Maximum average daily emissions represent the greatest emissions that would occur over the entire construction period based on the overlapping construction phases and subphases.
Source: Compiled by AECOM in 2017

Construction-Related Fugitive Dust

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Fugitive PM dust emissions are associated primarily with site preparation, and vary as a function of parameters such as soil silt content, soil moisture, wind speed, acreage of disturbance area, and vehicle miles traveled by construction vehicles on- and off-site. Earthmoving and material handling operations would be the primary sources of fugitive PM dust emissions from project construction activities.

The Construction Dust Control Ordinance requires all site preparation work, demolition, or other construction activities in 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. 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. All four project properties would be subject to the requirements of the Construction Dust Control Ordinance.

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 sweeping or vacuuming the streets, sidewalks, paths, and intersections where work is in progress at the end of the work day;
- 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 include but are not limited to:

- wetting down the area around soil improvements;
- analyzing wind direction;
- placing dust monitors;
- keeping records of PM monitoring results;
- conducting inspections and keeping records of visible dust; and
- establishing a hotline for surrounding community members to call and report visible dust problems.

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 *less than significant* for all project properties. No mitigation measures are necessary.

Operational Emissions of Criteria Air Pollutants

After construction, long-term emissions of criteria air pollutants would be generated from stationary, area, energy, and mobile sources under either the proposed project or the variant. Stationary sources would include emissions from operation of up to eight diesel emergency generators in residential and commercial buildings at the 700 Innes property. Area sources would include consumer products, periodic architectural coatings, and landscape equipment for residential land uses. Energy sources would include natural gas combustion for space and water heating in residences. Mobile sources would involve vehicle trips associated with residential, recreational, and visitor activities (e.g., work, shopping, and other trips). Additional modeling details are provided in Appendix F.

India Basin Shoreline Park Property

Operational emissions at the India Basin Shoreline Park property would be generated from area, energy, and mobile sources. Energy sources would include natural gas combustion for space and water heating in the commercial land uses. Mobile sources would be the primary source of emissions and would involve vehicle trips associated with commercial and recreational uses. Under either the proposed project or the variant, estimated average daily unmitigated emissions during operation of the India Basin Shoreline Park property would be approximately 1 lb/day of NO_X and less than1 lb/day of ROG, PM_{10}, and $PM_{2.5}$ (Table 3.7-17).

Table 3.7-17: Proposed Project and Variant—India Basin Shoreline Park Property: Operational Emissions

Source	Emissions (lb/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Area	0.2	0.0	0.0	0.0
Energy	0.0	<0.1	0.0	0.0
Mobile	0.2	0.5	0.2	0.1
Stationary				
Waste	0.0	0.0	0.0	0.0
Water	0.0	0.0	0.0	0.0
Average Daily Emissions	0.3	0.6	0.2	0.1

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases
Source: Compiled by AECOM in 2017.

900 Innes Property

Operational emissions at the 900 Innes property would be generated from area, energy, and mobile sources. Energy sources would include natural gas combustion for space and water heating in the institutional and commercial land uses. Mobile sources would be the primary source of emissions and would involve vehicle trips for commercial and recreational uses. Under either the proposed project or the variant, estimated average daily unmitigated emissions during operation of the 900 Innes property would be approximately 1 lb/day of NO_X and less than 1 lb/day of ROG, PM_{10}, and $PM_{2.5}$ (Table 3.7-18).

Table 3.7-18: Proposed Project and Variant—900 Innes Property: Operational Emissions

Source	Emissions (lb/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Area	0.2	0.0	0.0	0.0
Energy	0.0	<0.1	0.0	0.0
Mobile	0.1	0.5	0.3	0.1
Stationary				
Waste	0.0	0.0	0.0	0.0
Water	0.0	0.0	0.0	0.0
Average Daily Emissions	0.4	0.5	0.3	0.1

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases
Source: Compiled by AECOM in 2017.

India Basin Open Space Property

Under either the proposed project or the variant, operational emissions at the India Basin Open Space property would be minimal, generated from area, energy, and mobile sources. Energy sources would include natural gas combustion for space and water heating in the institutional and commercial land uses. Mobile sources would be the primary source of emissions because of vehicle trips for commercial and recreational uses. Under either the proposed project or the variant, estimated average daily unmitigated emissions during operation of the India Basin Open Space property would be less than 1 lb/day of ROG, NO_X, PM_{10}, and $PM_{2.5}$ (Table 3.7-19).

Table 3.7-19: Proposed Project and Variant—India Basin Open Space Property: Operational Emissions

Source	Emissions (lb/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Area	0.0	0.0	0.0	0.0
Energy	0.0	0.0	0.0	0.0
Mobile	0.1	0.2	0.0	0.0
Stationary	0.0	0.0	0.0	0.0
Waste	0.0	0.0	0.0	0.0
Water	0.0	0.0	0.0	0.0
Average Daily Emissions	0. 1	0.2	0.0	0.0

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases
Source: Compiled by AECOM in 2017.

700 Innes Property

Under the proposed project and the variant, operational emissions at the 700 Innes property would be generated from stationary, area, energy, and mobile sources. Energy sources would include natural gas combustion for space and water heating in the commercial and residential land uses. Mobile sources would involve vehicle trips for commercial, residential, and educational uses and would be the primary source of NO_X, PM_{10}, and $PM_{2.5}$ emissions. Area sources would be the primary source of ROG emissions and would be generated from the use of consumer products, periodic architectural coatings, and landscape equipment for the residential land uses. Under the proposed project, estimated average daily unmitigated emissions during operation of the 700 Innes property would be approximately 78 lb/day of ROG, 61 lb/day of NO_X, 35 lb/day of PM_{10}, and 13 lb/day of $PM_{2.5}$ (Table 3.7-20). Under the variant, estimated average daily unmitigated emissions during operation would be approximately 77 lb/day of ROG, 96 lb/day of NO_X, 45 lb/day of PM_{10}, and 14 lb/day of $PM_{2.5}$ (Table 3.7-21). As shown in Tables 3.7-20 and 3.7-21, the variant would result in higher emissions of NO_X, PM_{10}, and $PM_{2.5}$ than the proposed project because of the larger amount of vehicle trips associated with the variant's land uses.

Table 3.7-20: Proposed Project—700 Innes Property: Operational Emissions

Source	Emissions (lb/day)			
	ROG	NOx	PM_{10}	$PM_{2.5}$
Area	62.7	1.0	3.4	3.4
Energy	0.6	4.8	0.4	0.4
Mobile	13.8	48.5	30.8	8.6
Stationary	1.0	6.7	0.1	0.1
Waste	0.0	0.0	0.0	0.0
Water	0.0	0.0	0.0	0.0
Average Daily Emissions	78.0	60.9	34.7	12.5

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases
Source: Compiled by AECOM in 2017.

Table 3.7-21: Variant—700 Innes Property: Operational Emissions

Source	Emissions (lb/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Area	50.6	0.4	1.4	1.4
Energy	0.7	6.3	0.5	0.5
Mobile	24.9	82.0	42.7	12.0
Stationary	1.1	7.3	0.2	0.2
Waste	0.0	0.0	0.0	0.0
Water	0.0	0.0	0.0	0.0
Average Daily Emissions	77.3	96.0	44.7	14.0

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases
Source: Compiled by AECOM in 2017.

Overall Operational Impact for Criteria Air Pollutants

Tables 3.7-22 and 3.7-23 show the average daily operational emissions from all project site properties associated with the proposed project and variant, respectively. As shown in Tables 3.7-22 and 3.7-23, operational emissions would exceed thresholds for ROG and NO_X. The primary source of ROG emissions would be area sources at the 700 Innes property. Mobile sources would be the primary source of NO_X emissions across all properties. The variant includes a larger amount of vehicle trips associated with the land uses, resulting in greater emissions from mobile sources. Therefore, implementation of Mitigation Measures M-AQ-1e and M-AQ-1f would be required to reduce operational emissions.

Table 3.7-22: Proposed Project: Operational Emissions

Source	Emissions (lb/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Area	63.1	0.9	3.4	3.4
Energy	0.6	4.9	0.4	0.4
Mobile	14.2	49.7	31.3	8.7
Stationary	1.0	6.7	0.2	0.2
Waste	0.0	0.0	0.0	0.0
Water	0.0	0.0	0.0	0.0
Average Daily Emissions	78.8	62.2	35.2	12.6
Threshold	54	54	82	54
Exceed Threshold?	YES	YES	NO	NO

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases
Source: Compiled by AECOM in 2017.

Table 3.7-23: Variant: Operational Emissions

Source	Emissions (lb/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Area	51.0	0.4	1.4	1.4
Energy	0.7	6.4	0.5	0.5
Mobile	25.3	83.2	43.2	12.2
Stationary	1.1	7.3	0.2	0.2
Waste	0.0	0.0	0.0	0.0
Water	0.0	0.0	0.0	0.0
Average Daily Emissions (lb/day)	78.0	97.3	45.2	14.2
Threshold	54	54	82	54
Exceed Threshold?	YES	YES	NO	NO

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases
Source: Compiled by AECOM in 2017.

Mitigation Measure M-AQ-1e: Implement Best Available Control Technology for Operational Diesel Generators

To reduce operational NO_X and PM emissions under the proposed project or variant, the project sponsors, as applicable, shall require in applicable contracts that the operational backup diesel generators:

(1) comply with ARB Airborne Toxic Control Measure 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 final certified engine or (B) Tier 4 interim 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 PM reduction as the identical ARB-verified model and BAAQMD approves of its use.

The project sponsors, as applicable, 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 before a permit for a backup diesel generator is issued by any City agency.

Once operational, all diesel backup generators shall be maintained in good working order for the life of the equipment and any future replacement of the diesel backup generators shall be required to be consistent with these emissions specifications. The operator of the facility at which the generator is located shall maintain records of the testing schedule for each diesel backup generator for the life of that diesel backup generator. The facility operator shall provide this information for review to the Planning Department within 3 months of a request for such information.

Mitigation Measure M-AQ-1f: Prepare and Implement Transportation Demand Management

To reduce operational mobile source emissions, 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 associated with the 700 Innes and India Basin Open Space properties by at least 15 percent compared to the aggregate daily one-way vehicle trips identified in the project-related Transportation Impact Study dated July 2017 and included in EIR Appendix F.

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 at least 15 percent compared to the aggregate daily one-way vehicle trips identified in the project-related Transportation Impact Study dated July 2017 and included in EIR Appendix F.

To ensure that this reduction goal could be reasonably achieved, the TDM plan will have a monitoring goal of reducing by 15 percent the daily one-way vehicle trips for each building that has received a certificate of occupancy and that is at least 75 percent occupied, relative to the one-way vehicle trips anticipated for that building based on expected development on that parcel. The calculations shall use the trip generation rates contained in the project's Transportation Impact Study. There shall be a transportation management association that would be responsible for the administration, monitoring, and

adjustment of the TDM plan. The project sponsors shall be responsible for monitoring implementation of the TDM plan and proposing adjustments to the 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. Actual TDM measures selected should include those from the City's adopted TDM Program Standards, which describe the scope and applicability of candidate measures in detail and include:

- ***Active Transportation:*** *Streetscape improvements to encourage walking, secure bicycle parking, shower and locker facilities for cyclists, subsidized bikeshare memberships for project occupants, bicycle repair and maintenance services, and other bicycle-related services.*
- ***Car-Share:*** *Car-share parking spaces and subsidized memberships for project occupants.*
- ***Delivery:*** *Amenities and services to support delivery of goods to project occupants.*
- ***Family-Oriented Measures:*** *On-site childcare and other amenities to support the use of sustainable transportation modes by families.*
- ***High-Occupancy Vehicles:*** *Carpooling/vanpooling incentives and shuttle bus service.*
- ***Information and Communications:*** *Multimodal wayfinding signage, transportation information displays, and tailored transportation marketing services.*
- ***Land Use:*** *On-site affordable housing and healthy food retail services in underserved areas.*
- ***Parking:*** *Unbundled parking, short-term daily parking, 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) 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 of vehicle trips to and from the project site to determine the plan's effectiveness, as described in "TDM Plan Monitoring and Reporting" below. The TDM plan shall have been approved by the Planning Department before site permit application for the first building, and the plan shall be implemented for each new building upon the issuance of the certificate of occupancy for that building.

The TDM plan shall be submitted to the Planning Department for approval to ensure that components of the plan intended to meet the reduction target are shown in the plan and/or ready to be implemented upon the issuance of each certificate of occupancy

The TDM plan shall remain a component of the proposed project and variant to be implemented for the duration of the proposed project or variant.

TDM Plan Monitoring and Reporting: *The TDM Coordinator shall collect data, prepare monitoring reports, and submit them to the Planning Department. To ensure that the goal of reducing by at least 15*

percent the aggregate daily one-way vehicle trips is reasonably achievable, the project sponsor shall monitor daily one-way vehicle trips for all buildings that have received a certificate of occupancy, and shall 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 project's Transportation Impact Study.

Timing. *The TDM Coordinator shall collect monitoring data and shall begin submitting monitoring reports to the Planning Department 18 months after issuance of the first certificate of occupancy for buildings on the 700 Innes property that include off-street parking or the establishment of surface parking lots or garages. Thereafter, annual monitoring reports shall be submitted (referred to as "reporting periods") until five consecutive reporting periods show that the full built project has met the reduction goal. From that point on, monitoring data shall be submitted to the Planning Department once every three years. Each trip count and survey (see below for description) shall be completed within 30 days after the end of the applicable reporting period. Each monitoring report shall be completed within 90 days after the applicable reporting period. The timing of monitoring reports shall be modified such that a new monitoring report is submitted 12 months after adjustments are made to the TDM plan 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 proposed project or variant, such as annual reporting under the proposed project's or variant's development agreement.*

Term. *The project sponsors shall monitor, submit monitoring reports, and make plan adjustments until the earlier of: (i) the expiration of the development agreement, or (ii) the date the Planning Department determines that the reduction goal has been met for up to eight consecutive reporting periods.*

Notwithstanding the foregoing or any other provision of this mitigation measure, all obligations for monitoring, reporting, and adjusting 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:

(1) Trip Count and Intercept Survey: Provide a site-wide trip count and intercept survey of persons and vehicles arriving and leaving the project site 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.

(2) 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 based on the monitoring results if three consecutive reporting periods demonstrate that measures in the TDM plan are not achieving the reduction goal. The TDM plan adjustments shall be made in consultation with Planning Department staff and may require refinements to existing measures (e.g., change to subsidies, increased bicycle parking), inclusion of new measures (e.g., a new technology), or removal of existing measures (e.g., measures shown to be ineffective or induce vehicle trips).*

If the monitoring results from three consecutive reporting periods demonstrate that measures in the TDM plan are not achieving the reduction goal, the TDM plan adjustments shall occur within 270 days after the last consecutive reporting period. The TDM plan adjustments shall occur until the monitoring results of three consecutive reporting periods demonstrate that the reduction goal is achieved.

If after implementing TDM plan adjustments, the project sponsors have not met the reduction goal for up to eight consecutive reporting periods, as determined by the Planning Department, then the project sponsors may, at any time thereafter, elect to use another means to address the shortfall in meeting the TDM plan reduction target. Specifically, in addition to paying the emission offset fees set forth in Mitigation Measure M-AQ-1d, the project sponsors may pay an additional offset fee in accordance with Mitigation Measure M-AQ-1d. This additional offset fee would be 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 anticipated shortfall 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 15 percent TDM goal, adjusted for the actual percentage of aggregate daily one-way vehicle trip reduction achieved in the most recently monitored year.

Table 3.7-24: Proposed Project: Mitigated Operational Emissions

Source	Emissions (lb/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Area	63.1	0.9	3.4	3.4
Energy	0.6	4.9	0.4	0.4
Mobile	12.1	42.2	26.6	7.4
Stationary	0.2	0.3	<0.1	<0.1
Waste	0.0	0.0	0.0	0.0
Water	0.0	0.0	0.0	0.0
Average Daily Emissions	76.0	48.3	30.4	11.2
Threshold	54	54	82	54
Exceed Threshold?	YES	NO	NO	NO

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases
Source: Compiled by AECOM in 2017.

Table 3.7-25: Variant: Mitigated Operational Emissions

Source	Emissions (lb/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Area	51.0	0.4	1.4	1.4
Energy	0.7	6.4	0.5	0.5
Mobile	21.5	70.7	36.7	10.4
Stationary	0.2	0.3	<0.1	<0.1
Waste	0.0	0.0	0.0	0.00
Water	0.0	0.0	0.0	0.00
Average Daily Emissions	73.4	77.8	38.6	12.3
Threshold	54	54	82	54
Exceed Threshold?	YES	YES	NO	NO

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases
Source: Compiled by AECOM in 2017.

Mitigation Measure M-AQ-1e would require that operational backup diesel generators include Tier 4 final or Tier 4 interim or Tier 3 certified engines equipped with a Level 3 VDECS, resulting in an estimated 93 percent reduction in NOx emissions and an 85 percent reduction in PM emissions. Tables 3.7-24 and 3.7-25 show the average daily operational emissions from all project site properties associated with the proposed project and variant with implementation of Mitigation Measure M-AQ-1e. In addition to the emissions presented in Tables 3.7-24 and 3.7-25, Mitigation Measure M-AQ-1f would require a TDM plan with a goal of reducing estimated one-way vehicle trips by 15 percent and mobile-source ROG and NO_X emissions by 15 percent. The TDM plan would result in an estimated reduction of 2 lb/day of ROG emissions and 7 lb/day of NO_X emissions for the proposed project and 4 lb/day of ROG emissions and 12 lb/day of NO_X emissions for the variant. Even with implemention of Mitigation Measures M-AQ-1e and the estimated emissions reductions from M-AQ-1f assuming implementation to the maximum extent feasible, the proposed project would continue to exceed thresholds for ROG emissions and the variant would continue to exceed thresholds for ROG and NO_X emissions. Implementation of Mitigation Measure M-AQ-1d has the potential to further reduce operational mobile-source emissions of ROG and NO_X to below the BAAQMD threshold. However, at this time, the project sponsors have not identified a specific offset project that could achieve the amount of offset needed to fully offset otherwise

unmitigated ROG and NO_X emissions by Mitigation Measures M-AQ-1a through M-AQ-1c, M-AQ-1e, and M-AQ-1f. BAAQMD may be able to identify and implement an emissions reduction project funded with the fee provided by Mitigation Measure M-AQ-1d. However, implementation of an offset project through BAAQMD is outside the control of the project sponsors or the City and is therefore uncertain. Therefore, operation of either the proposed project or the variant could violate an air quality standard, contribute to an existing or projected air quality violation, and cause a cumulatively considerable increase in criteria air pollutants. This overall operational air quality impact would be *significant and unavoidable with mitigation* with implementation of M-AQ-1d through M-AQ-1f.

Overlap of Construction and Operation

During the years 2020 through 2022, construction-related and operational emissions were assumed tooverlap, as a portion of the proposed project would be completed while construction is completed in other project areas. Tables 3.7-26 and 3.7-27 show the average daily overlapping construction and operational emissions from all project site properties associated with the proposed project and variant, respectively. As shown in Table 3.7-26, the combined construction-related and operational emissions for the proposed project would exceed the thresholds for ROG and NO_X emissions in 2020 through 2022. As shown in Table 3.7-27, the combined construction-related and operational emissions for the variant would exceed the thresholds for ROG in 2021 and 2022 and for NO_X emissions in 2020 through 2022.

Tables 3.7-28 and 3.7-29 present the combined construction-related and operational emissions with mitigation for the proposed project and variant, respectively. Although implementing Mitigation Measures M-AQ-1a through M-AQ-1c and Mitigation Measures M-AQ-1e and M-AQ-1f would reduce emissions to the maximum extent feasible, the combined construction-related and operational emissions for the proposed project would exceed the thresholds for ROG emissions in 2021 and NO_X emissions in 2020. The combined construction-related and operational emissions for the variant would exceed the thresholds for ROG emissions in 2021 and 2022 and for NO_X emissions in 2020 through 2022.

Table 3.7-26: Proposed Project: Overlapping Construction and Operational Emissions

Source	Emissions (lb/day)			
	ROG	**NO_X**	**PM_{10}[1]**	**$PM_{2.5}$[1]**
2020				
Construction	54.0	140.8	5.7	5.3
Operations (900 Innes)	0.3	0.5	0.3	0.1
Total	**54.4**	**141.4**	**6.0**	**5.4**
2021				
Construction	18.5	42.2	1.9	1.8
Operations (India Basin Shoreline Park, 900 Innes, 700 Innes Phase I)	52.9	44.8	26.1	9.1
Total	**71.4**	**87.0**	**28.1**	**10.9**
2022				
Construction	18.3	39.0	1.7	1.6
Operations (India Basin Shoreline Park, 900 Innes, 700 Innes Phase I)	53.0	45.0	26.1	9.1
Total	**71.3**	**84.0**	**27.8**	**10.7**
Threshold	54	54	82	54
Exceed Threshold?	YES	YES	NO	NO

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases

[1] Construction PM_{10} and $PM_{2.5}$ emissions are exhaust emissions only. Operational PM_{10} and $PM_{2.5}$ emissions are total (includes exhaust and fugitive emissions).

Source: Compiled by AECOM in 2017.

Table 3.7-27: Variant: Overlapping Construction and Operational Emissions

Source	Emissions (lb/day)			
	ROG	**NOx**	**PM_{10}[1]**	**$PM_{2.5}$[1]**
2020				
Construction	53.5	150.1	6.0	5.6
Operations (900 Innes)	0.3	0.5	0.3	0.1
Total	**53.9**	**150.7**	**6.3**	**5.7**
2021				
Construction	24.7	65.5	3.2	3.0
Operations (India Basin Shoreline Park, 900 Innes, 700 Innes Phase I)	53.3	81.0	36.2	10.7
Total	**78.0**	**146.4**	**39.4**	**13.7**
2022				
Construction	22.6	45.1	2.0	1.9
Operations (India Basin Shoreline Park, 900 Innes, 700 Innes Phase I)	53.4	81.1	36.2	10.7
Total	**76.0**	**126.2**	**38.2**	**12.6**
Threshold	54	54	82	54
Exceed Threshold?	YES	YES	NO	NO

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases

[1] Construction PM_{10} and $PM_{2.5}$ emissions are exhaust emissions only. Operational PM_{10} and $PM_{2.5}$ emissions are total (includes exhaust and fugitive emissions).

Source: Compiled by AECOM in 2017.

Table 3.7-28: Proposed Project: Overlapping Mitigated Construction and Operational Emissions

Source	Emissions (lb/day)[1]			
	ROG	NO_X	PM_{10}[2]	$PM_{2.5}$[2]
2020				
Construction	45.2	53.6	0.5	0.5
Operations (900 Innes)	0.3	0.5	0.3	0.1
Total	45.6	54.1	0.8	0.5
2021				
Construction	15.4	11.3	0.1	0.1
Operations (India Basin Shoreline Park, 900 Innes, 700 Innes Phase I)	52.3	40.2	26.0	9.0
Total	67.7	51.4	26.2	9.1
2022				
Construction	15.3	12.3	0.1	0.1
Operations (India Basin Shoreline Park, 900 Innes, 700 Innes Phase I)	52.4	40.3	26.0	9.0
Total	67.7	52.6	26.2	9.1
Threshold	54	54	82	54
Exceed Threshold?	YES	YES	NO	NO

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases

[1] Assumes implementation of Mitigation Measures M-AQ-1a through M-AQ-1c and Mitigation Measures M-AQ-1e and M-AQ-1f.

[2] Construction PM_{10} and $PM_{2.5}$ emissions are exhaust emissions only. Operational PM_{10} and $PM_{2.5}$ emissions are total (includes exhaust and fugitive emissions).

Source: Compiled by AECOM in 2017.

Table 3.7-29: Variant: Overlapping Mitigated Construction and Operational Emissions

Source	Emissions (lb/day)[1]			
	ROG	NO_X	PM_{10}[2]	$PM_{2.5}$[2]
2020				
Construction	40.6	57.3	0.5	0.5
Operations (900 Innes)	0.3	0.5	0.3	0.1
Total	40.9	57.8	0.8	0.5
2021				
Construction	15.4	11.3	0.1	0.1
Operations (India Basin Shoreline Park, 900 Innes, 700 Innes Phase I)	52.7	75.7	36.1	10.6
Total	68.0	87.0	36.2	10.7
2022				
Construction	15.3	12.3	0.1	0.1
Operations (India Basin Shoreline Park, 900 Innes, 700 Innes Phase I)	52.7	75.9	36.1	10.6
Total	68.0	88.2	36.2	10.7
Threshold	54	54	82	54
Exceed Threshold?	YES	YES	NO	NO

Notes: lb/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; ROG = reactive organic gases

[1] Assumes implementation of Mitigation Measures M-AQ-1a through M-AQ-1c and Mitigation Measures M-AQ-1e and M-AQ-1f.

[2] Construction PM_{10} and $PM_{2.5}$ emissions are exhaust emissions only. Operational PM_{10} and $PM_{2.5}$ emissions are total (includes exhaust and fugitive emissions).

Source: Compiled by AECOM in 2017.

Under either the proposed project or the variant, the combined construction and operation even with implementation of Mitigation Measures M-AQ 1a through M-AQ-1c and M-AQ-1e and M-AQ-1f, the proposed project or the variant would generate emissions that would exceed the thresholds for ROG and NO_X emissions. Therefore, Mitigation Measures M-AQ-1d also would be required.

Implementation of Mitigation Measures M-AQ-1a through M-AQ-1f has the potential to mitigate ROG and NO_X emissions to a level of insignificance. However, at this time, the project sponsors have not identified a specific offset project that could achieve the amount of offset needed to fully offset otherwise unmitigated ROG and NO_X emissions by Mitigation Measures M-AQ-1a through M-AQ-1c, M-AQ-1e, and M-AQ-1f. BAAQMD may be able to identify and implement an emissions reduction project funded with the fee provided by Mitigation Measure M-AQ-1d. However, implementation of an offset project through BAAQMD is outside the control of the project sponsors or the City and is therefore uncertain.

The proposed project or variant's ROG and NO_X residual emissions increases after the application of all feasible mitigation measures could contribute to new, or exacerbate existing, air quality violations in the SFBAAB by contributing to ozone or resulting in Air Quality Index values that would be unhealthy for sensitive groups and others. As discussed in Section 3.7.1, "Environmental Setting," the Air Quality Index refers to specific amounts of pollution in the air and is based on the federal air quality standards. Air Quality Index statistics from 2012 to 2016 indicate that air quality in the Bay Area is predominantly in the "good" or moderate" category and healthy on most days for most people. When air quality is "moderate," unusually sensitive people should consider limited prolonged outdoor exertion. The main health concern of exposure to ground-level ozone is the effect on the respiratory system. Several factors influence health impacts, including the concentrations of ground-level ozone, the duration of exposure, breathing rate, the length of intervals between exposures, and the sensitivity of the person to the exposure. 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. Given these various factors, it is difficult to predict the magnitude of health effects from the proposed project or variant's exceedance of significance criteria for regional ROG and NO_X emissions.

However, because residual emissions generated from construction and operation of the proposed project or variant could violate an air quality standard, contribute substantially to an existing or projected air quality violation, and would be cumulatively considerable, these residual air pollutant emissions are conservatively considered *significant and unavoidable with mitigation.*

Overall Impact Conclusion

The impact conclusion would be significant and unavoidable with mitigation for ROG and NO_X emissions during construction, operation, and overlapping construction and operation, and cumulatively even with implementation of Mitigation Measures M-AQ-1a through M-AQ-1f discussed above under Impact AQ-1a. Therefore, the overall impact related to generation of emissions that could contribute to new, or exacerbate existing, air quality violations in the SFBAAB would be *significant and unavoidable with mitigation*.

Impact AQ-2: The proposed project or variant would generate construction-related and operational emissions of criteria pollutants and precursors that could conflict with or obstruct implementation of the applicable air quality plan. ***(Less than Significant with Mitigation)***

Air quality plans describe air pollution control strategies to be implemented by a city, county, or region. The primary purpose of an air quality plan is to bring an area that does not attain federal and State air quality standards into compliance with the requirements of the Clean Air Act and California Clean Air Act. As discussed previously, the most recent air quality plan is the 2017 Bay Area Clean Air Plan. Construction or operation under the proposed project or variant would be consistent with the 2017 Bay Area Clean Air Plan if it would support the plan's goals, include applicable control measures from the plan, and would not disrupt or hinder implementation of any of the plan's control measures.

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

The primary goals of the 2017 Bay Area Clean Air Plan are to protect public health and protect the climate by reducing emissions, concentrations of harmful air pollutants, and exposure to the pollutants that pose the greatest health risk. To meet the primary goals, the Bay Area Clean Air Plan includes individual control measures that describe specific actions to reduce emissions of air pollutants and GHGs, with measures assigned into categories such as mobile-source, stationary-source, and land use and local impacts measures. The 2017 Bay Area Clean Air Plan control strategy is based upon the control measure categories of stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and short lived climate pollutants.

The proposed project and variant include mitigation measures identified to reduce emissions of criteria pollutants during both project construction and operations. For construction, Mitigation Measures M-AQ-1a through M-AQ-1c would reduce ROG, NO_X, PM_{10}, and $PM_{2.5}$ emissions from off-road equipment, on-road truck trips, and in-water construction equipment. For operations, Mitigation Measures M-AQ-1e and M-AQ-1f would reduce ROG, NO_X, PM_{10}, and $PM_{2.5}$ emissions from emergency generators and on-road vehicles. Mitigation Measure M-AQ-1d would require offsets for the maximum year of construction or operations or combined construction and operational emissions.

For mobile sources, the 2017 Bay Area Clean Air Plan includes measures applicable to the project related to the use of off-road construction equipment. Control measure TR22, Construction, Freight and Farming Equipment, calls for incentives to retrofit construction equipment with diesel PM filters or upgrade to Tier 3 or 4 engines and use renewable alternative fuels in applicable equipment. Both the proposed project and variant would be consistent with TR22 because they would use construction equipment equipped with diesel PM filters or Tier 4 Final engines, as required by the Clean Construction Ordinance and Mitigation Measure M-AQ-1a. Implementation of control measure TR19, Medium- and Heavy-Duty Trucks, will directly provide incentives for the purchase of new trucks with engines that exceed ARB's 2010 NOx emission standards for heavy-duty engines, hybrid trucks, and zero-emission trucks. Both the proposed project and variant would be consistent with TR19 through implementation of Mitigation Measure M-AQ-1b. Control measure TR21, Boats: Cleaner Commercial Harbor Craft, would develop financial incentives for wind assist, hybrid systems, use of alternative fuels, retrofit of existing older marine engines with selective catalytic converters, and diesel particulate filters. Both the proposed project and variant would be consistent with TR21 with the implementation of Mitigation Measure M-AQ-1c.

For stationary sources, the Bay Area Clean Air Plan includes stationary-source control measures (SSMs) to enhance BAAQMD's regulatory program. SS21, "Revise Regulation 2, Rule 5: New Source Review for Air Toxics," would be applicable to the project. SS21 supports implementing more stringent requirements through BAAQMD's New Source Review program and the Air Toxics Hot Spots program, based on revisions to OEHHA risk factors and methodologies. This analysis uses the more stringent 2015 OEHHA guidance in evaluating the project's health risks and hazards. Mitigation Measure M-AQ-1e, "Implement Best Available Control Technology for Operational Diesel Generators," would reduce ROG, NOx, PM_{10}, and $PM_{2.5}$ emissions from emergency generators.

The 2017 Bay Area Clean Air Plan also includes TR2, Trip Reduction Programs. TR2 includes a mandatory and voluntary program to implement strategies that encourage trip reduction from worker commutes. Additional measures in the 2017 Bay Area Clean Air Plan that encourage trip reduction include TR1 (Clean Air Teleworking), TR8 (Ridesharing and Last-Mile Connections), and TR9 (Bicycle and Pedestrian Access and Facilities). Mitigation Measure M-AQ-1f requires developing a TDM plan to reduce the use of single-occupancy vehicles and encourage the use of transit and nonmotorized travel modes. Thus, the proposed project or variant would include the applicable control measures identified in the Bay Area Clean Air Plan.

Therefore, the proposed project or variant would not conflict with or obstruct implementation of the 2017 Bay Area Clean Air Plan, particularly with implementation of Mitigation Measures M-AQ-1a through M-AQ-1c, M-AQ-1e and M-AQ-1f. This impact would be *less than significant with mitigation* with implementation of Mitigation Measures M-AQ-1a through M-AQ-1c, M-AQ-1e and M-AQ-1f.

Impact AQ-3: The proposed project or variant would generate emissions that could expose sensitive receptors to substantial pollutant concentrations. *(Significant and Unavoidable with Mitigation)*

The project site is located in an area with nearby sensitive receptors. In addition, the proposed project and variant would develop residential land uses that would be considered sensitive receptors. During construction of either the proposed project or the variant, construction-related emissions of TACs and $PM_{2.5}$ could expose nearby sensitive receptors to substantial pollutant concentrations. Furthermore, because residential receptors would be developed on the project site while construction continues to build out the remainder of the project, proposed residents could be exposed to concentrations of pollutants generated by construction under the proposed project or variant, which could exacerbate conditions. After buildout of the proposed project or variant, air pollutant emissions generated during day-to-day activities could expose nearby sensitive receptors to substantial pollutant concentrations.

The greatest potential risk from TAC and $PM_{2.5}$ emissions associated with the proposed project or variant would come from diesel PM emissions generated by operation of heavy equipment during construction and brake and tire wear from increased vehicle traffic during operations. Off-road diesel equipment used for clearing and grading, materials handling and installation, and other construction activities would generate diesel PM emissions.

Construction—Annual $PM_{2.5}$ Concentrations

India Basin Shoreline Park Property

Construction at the India Basin Shoreline Park property is assumed to occur in the year 2020. $PM_{2.5}$ impacts associated with construction at the India Basin Shoreline Park property at all off-site sensitive receptors in the

study area as described above would be less than 8 percent of the total maximum $PM_{2.5}$ impact of 1.4 µg/m^3 and 1.1 µg/m^3 in the year 2020 for the proposed project and variant, respectively (Table 3.7-30). There would be no on-site sensitive receptors in the year 2020.

900 Innes Property

Construction at the 900 Innes property is assumed to occur in the year 2019, overlapping with construction at the 700 Innes property. $PM_{2.5}$ impacts in the year 2019 would be approximately 20 percent of the total maximum 2.5 µg/m^3 for the proposed project and 2.2 µg/m^3 for the variant, respectively (Table 3.7-30). There would be no on-site sensitive receptors in the year 2019.

India Basin Open Space Property

Construction at the India Basin Open Space property is conservatively assumed to occur in the years 2020 through 2022, with the shoreline wetlands being constructed in 2020 through 2021 and the beach area being constructed in late 2021 through 2022. $PM_{2.5}$ impacts associated with construction at the India Open Space property at all off-site sensitive receptors described above in the years 2020 through 2022 and on-site sensitive receptors at Hillside Hamman Cove (Figures 3.7-3 and 3.7-4) would be approximately 20 percent of the maximum $PM_{2.5}$ impacts for the years 2020 through 2022 (Table 3.7-30).

700 Innes Property

Construction at the 700 Innes property is conservatively assumed to occur in all 5 years of the construction period, 2018 through 2022, peaking in 2019. $PM_{2.5}$ impacts associated with construction at the 700 Innes property in the year 2019 at all off-site receptors and on-site sensitive receptors at Hillside Hamman Cove (Figures 3.7-3 and 3.7-4) would be approximately 80 percent (Table 3.7-30). $PM_{2.5}$ impacts associated with the construction at the 700 Innes property in the year 2020 would be approximately 70 percent and approximately 80 percent in the years 2021 and 2022.

Overall Construction Impact

The following details are presented in Table 3.7-30 for the maximally exposed resident receptor during each year of construction for the proposed project and variant. The maximum annual average concentration for $PM_{2.5}$, occurring in the year 2019, is equal to 2.5 µg/m^3 for the proposed project and 2.2 µg/m^3 for the variant. When the impacts of the proposed project and the variant are added to baseline conditions from the CRRP-HRA [2014] modeling (Table 3.7-31), the proposed project and the variant in addition to baseline conditions would result in totals of 10.8 µg/m^3 and 10.6 µg/m^3, respectively. Therefore, both the proposed project and variant would result in a significant impact before mitigation at a limited number of receptors along Innes Avenue, as the total concentration would exceed the threshold for health-vulnerable zip codes of 9.0 µg/m^3, and the proposed project and variant contribution would be greater than 0.2 µg/m^3.

Implementing Mitigation Measure M-AQ-1a with the requirement to use Tier 4 Final construction equipment would reduce the maximum annual average concentration of $PM_{2.5}$ during the year 2019 to 1.1 µg/m^3 for the proposed project and 1.0 µg/m^3 for the variant (Table 3.7-32). The maximum annual average $PM_{2.5}$ concentration for 2019 in combination with baseline conditions would still be above the respective thresholds of 9.0 µg/m^3

(Table 3.7-33 and Figure 3.7-5). Therefore, implementing Mitigation Measure M-AQ-1a would reduce the overall construction-related concentration of $PM_{2.5}$ emissions generated during construction; however, the concentration impact would still exceed the threshold of 9.0 µg/m^3 and the project contribution threshold of 0.2 µg/m^3 because of haul truck impacts (75 percent) and construction equipment at 700 Innes (21 percent) and 900 Innes (4 percent) in 2019 and 2020 at a limited number of receptors along Innes Avenue. Mitigation Measures M-AQ-1b through M-AQ-1d have the potential to further reduce $PM_{2.5}$ impacts, but these mitigation measures are not accounted for in Table 3.7-32 because of uncertainty as to their effectiveness. Therefore, even with implementation of Mitigation Measures M-AQ-1a through M-AQ-1d, the construction impact would still be *significant and unavoidable with mitigation.*

Table 3.7-30: $PM_{2.5}$ Concentrations with Construction of the Proposed Project or Variant

Year	X (UTM)	Y (UTM)	Proposed Project (µg/m^3)	X (UTM)	Y (UTM)	Variant (µg/m^3)
Off-Site Receptors						
2018[1]	555,120	4,176,220	1.4	555,120	4,176,220	1.3
2019[2]	555,100	4,176,220	2.5	555,100	4,176,220	2.2
2020[3]	555,100	4,176,220	1.4	555,100	4,176,220	1.1
2021[5]	555,100	4,176,220	0.4	555,100	4,176,220	0.4
2022[5]	554,880	4,176,440	0.2	554,880	4,176,440	0.2
On-Site Receptors at Hillside Hamman Cove						
2021[4,5]	555,480	4,176,260	1.1	555,480	4,176,260	1.1
2022[4,5]	555,480	4,176,260	0.5	555,480	4,176,260	0.5

Notes: µg/m^3 = micrograms per cubic meter; UTM = Universal Transverse Mercator
[1] Maximum concentrations attributable primarily to grading (50%) and 700 Innes unmitigated construction sources at an off-site receptor.
[2] Maximum concentrations attributable primarily to 700 Innes unmitigated construction sources (75%) at an off-site receptor.
[3] Maximum concentrations attributable primarily to 700 Innes (80%) unmitigated construction sources at an off-site receptor.
[4] Maximum concentrations attributable primarily to 700 Innes (90%) unmitigated construction sources at an on-site receptor.
[5] Assumes six of the eight emergency generators (Tier 2) would be operating after the completion of Phase 1 construction.
[6] Maximum concentrations attributable to vehicle traffic at on-site receptor.
Source: Compiled by AECOM in 2017.

Table 3.7-31: $PM_{2.5}$ Concentrations for Maximum Modeled Construction Year for the Proposed Project or Variant, Baseline plus Project Conditions

Year	Proposed Project (µg/m^3)	Variant (µg/m^3)
Baseline Conditions (CRRP-HRA [2014])[1]	8.4	8.4
Project Construction[2]	2.5	2.2
Total $PM_{2.5}$	10.8	10.6
APEZ Criterion	9.0	9.0
Project Contribution Criterion	0.2	0.2
Significant?	Yes	Yes

Notes: µg/m^3 = micrograms per cubic meter; APEZ = Air Pollutant Exposure Zone; CRRP = Community Risk Reduction Plan; HRA = health risk assessment; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; UTM = Universal Transverse Mercator
[1] Community Risk Reduction Plan health risk assessment for Year 2014 (Existing Conditions) plus construction impact from Hunters Point and Candlestick areas (data provided by Ramboll Environ).
[2] Based on 2019 construction $PM_{2.5}$ annual concentrations using unmitigated construction equipment at an off-site receptor. Receptor location: X (UTM) = 555,100, Y (UTM) = 4,176,220.
Source: Compiled by AECOM in 2017.

Table 3.7-32: $PM_{2.5}$ Concentrations with Construction of the Proposed Project or Variant with Mitigation Measure M-AQ-1a[7]

Year	X (UTM)	Y (UTM)	Proposed Project (µg/m³)	X (UTM)	Y (UTM)	Variant (µg/m³)
Off-Site Receptors						
2018[1]	555,100	4,176,220	0.5	555,100	4,176,220	0.5
2019[2]	555,100	4,176,220	1.1	555,100	4,176,220	1.0
2020[3]	554,880	4,176,440	0.8	554,880	4,176,440	0.6
2021[5]	554,880	4,176,440	0.3	554,880	4,176,440	0.3
2022[5]	554,880	4,176,440	0.2	554,880	4,176,440	0.2
On-Site Receptors at Hillside Hamman Cove[6]						
2021[4,5]	555,240	4,176,120	0.3	555,220	4,176,140	0.2
2022[4,5]	555,240	4,176,240	0.2	555,220	4,176,140	0.1

Notes: µg/m³ = micrograms per cubic meter; CRRP = Community Risk Reduction Plan; HRA = health risk assessment; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; UTM = Universal Transverse Mercator

[1] Maximum concentrations attributable primarily to grading (50%) and 700 Innes construction sources/haul truck trips (Tier 4 final off-road engines) at an off-site receptor.

[2] Maximum concentrations attributable primarily to 700 Innes construction sources/haul truck trips (75%) (Tier 4 final off-road engines) at an off-site receptor.

[3] Maximum concentrations attributable primarily to 700 Innes (80%) construction sources/haul truck trips (Tier 4 final off-road engines) at an off-site receptor.

[4] Maximum concentrations attributable primarily to 700 Innes (90%) construction sources (Tier 4 final off-road engines) at an off-site receptor.

[5] Assumes six of the eight emergency generators (Tier 2) would be operating after the completion of Phase 1 construction. Assumes Tier 4 diesel engines for the emergency generators.

[6] Assumes Tier 4 diesel engines for the emergency generators.

[7] Mitigation Measures M-AQ-1b, M-AQ-1c, and M-AQ-1d not included in calculation.

Source: Compiled by AECOM in 2017.

Table 3.7-33: $PM_{2.5}$ Concentrations for Maximum Modeled Construction Year for the Proposed Project or Variant, Baseline plus Project Conditions with Mitigation Measure M-AQ-1a[4]

Year	Proposed Project (µg/m³)	Variant (µg/m³)
Baseline Conditions (CRRP-HRA [2014])[1]	8.4	8.4
Project Construction[2]	1.1	1.0
Total $PM_{2.5}$	9.4	9.3
APEZ Criterion	9.0	9.0
Project Contribution Criterion	0.2	0.2
Significant?	Yes	Yes

Notes: µg/m³ = micrograms per cubic meter; APEZ = Air Pollutant Exposure Zone; CRRP = Community Risk Reduction Plan; HRA = health risk assessment; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; UTM = Universal Transverse Mercator

[1] Community Risk Reduction Plan health risk assessment for Year 2014 (Existing Conditions).

[2] Based on 2019 construction $PM_{2.5}$ annual concentrations using unmitigated construction equipment at an off-site receptor. Receptor location: X (UTM) = 555,100, Y (UTM) = 4,176,220.

[3] Concurrent construction projects at Hunters Point and Candlestick Point areas.

[4] Mitigation Measures M-AQ-1b, MM-AQ-1c, and MM-AQ-1d not included in calculation.

Source: Compiled by AECOM in 2017.

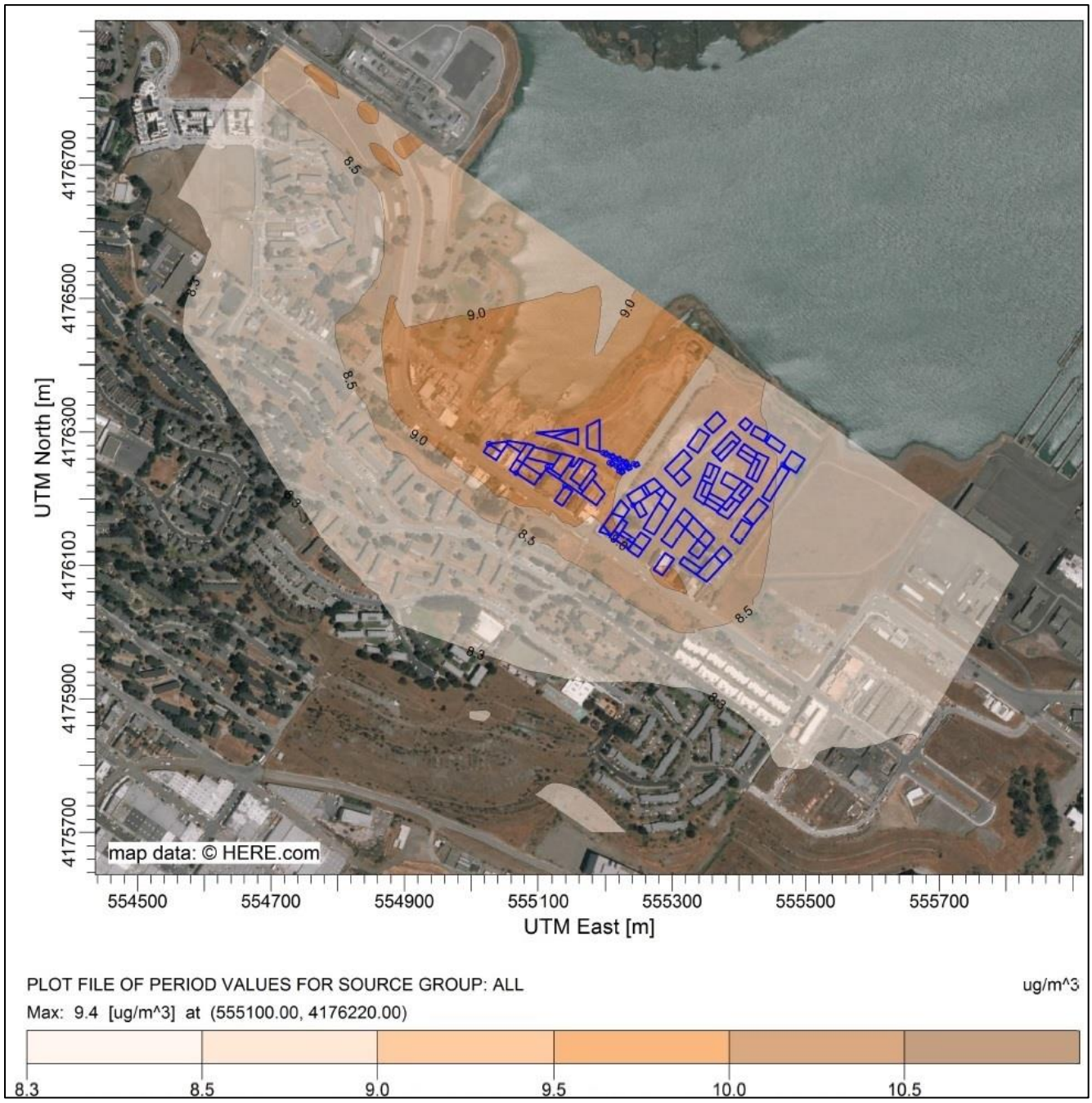

Figure 3.7-5 **Baseline plus Proposed Project Maximum with Mitigation Measure Modeled $PM_{2.5}$ Annual Concentrations for 2019 Construction Year**

Operations—Annual $PM_{2.5}$ Concentrations

Operational emission sources evaluated in the dispersion modeling for both the proposed project and the variant included on-road vehicles and emergency generators. Project-generated on-road traffic within 1,000 feet of the project site was modeled. Based on consultation with Fehr & Peers (San Francisco, 2017), the route modeled for the on-road traffic extended from the project site west to Jennings Street, south to Kiska Road/Kirkwood Avenue,

and east to Coleman Street. Figure 3.7-6 illustrates the on-road vehicle routes modeled for operation under the proposed project or variant at all sensitive receptors.

The proposed project and variant would include the operation of up to eight emergency generators. These sources were modeled as point sources, with stack height equal to 1 meter above the nearest building height. Operational emissions were analyzed at all off-site and on-site receptors (Figures 3.7-3 and 3.7-4).

India Basin Shoreline Park Property

Operations associated with the India Basin Shoreline Park property include $PM_{2.5}$ emissions from vehicle trips to the property. Less than 1 percent of the modeled total $PM_{2.5}$ concentrations of 1.6 µg/m^3 and 2.4 µg/m3 for the proposed project and variant, respectively, are associated with trips to this property (Table 3.7-34).

900 Innes Property

Operations associated with the 900 Innes property include $PM_{2.5}$ emissions from vehicle trips to the property. Less than 1 percent of the modeled total $PM_{2.5}$ concentrations of 1.6 µg/m^3 and 2.4 µg/m^3 for the proposed project and variant, respectively, are associated with trips to this property (Table 3.7-34).

India Basin Open Space Property

Operations associated with the India Basin Open Space property include $PM_{2.5}$ emissions from vehicle trips to the property. Less than 0.1 percent of the modeled total $PM_{2.5}$ concentrations of 1.6 µg/ m^3 and 2.4 µg/m^3 for the proposed project and variant, respectively, are associated with trips to this property (Table 3.7-34).

700 Innes Property

Operations associated with the 700 Innes property include $PM_{2.5}$ emissions from vehicle trips to the property and up to eight emergency generators. Approximately 98 percent of the modeled total $PM_{2.5}$ concentrations of 1.6 µg/m^3 and 2.4 µg/m^3 for the proposed project and variant, respectively, are associated with trips to this property (Table 3.7-34). The other 2 percent of the total $PM_{2.5}$ concentration is due to the emergency generators.

Overall Operational Impact

Project operation under either the proposed project or variant would generate $PM_{2.5}$ concentrations of 1.6 µg/m^3 and 2.4 µg/m^3 for the proposed project or variant, respectively that would cause project emissions in combination with baseline emissions to exceed the threshold of significance for $PM_{2.5}$ (Table 3.7-34) and the proposed project and variant contribution would be greater than 0.2 µg/m^3. Therefore, the overall operational impact of emissions generated under the proposed project or variant could be significant. Implementing Mitigation Measure M-AQ-1e would not change the maximum $PM_{2.5}$ concentrations because they are attributable to vehicle traffic operation, which the mitigation measure would not reduce. Mitigation Measure M-AQ-1f, by reducing the number of vehicle trips, would reduce $PM_{2.5}$ impacts by approximately 15 percent. Mitigation Measure M-AQ-1d could also reduce $PM_{2.5}$ emissions, depending on the proposed program selected for the offset credits. Neither of these mitigation measures are accounted for in Table 3.7-34 because of uncertainty as to their effectiveness; therefore, the overall impact of operational $PM_{2.5}$ emissions by the proposed project or variant would be *significant and unavoidable with mitigation* with implementation of Mitigation Measures M-AQ-1d through M-AQ-1f.

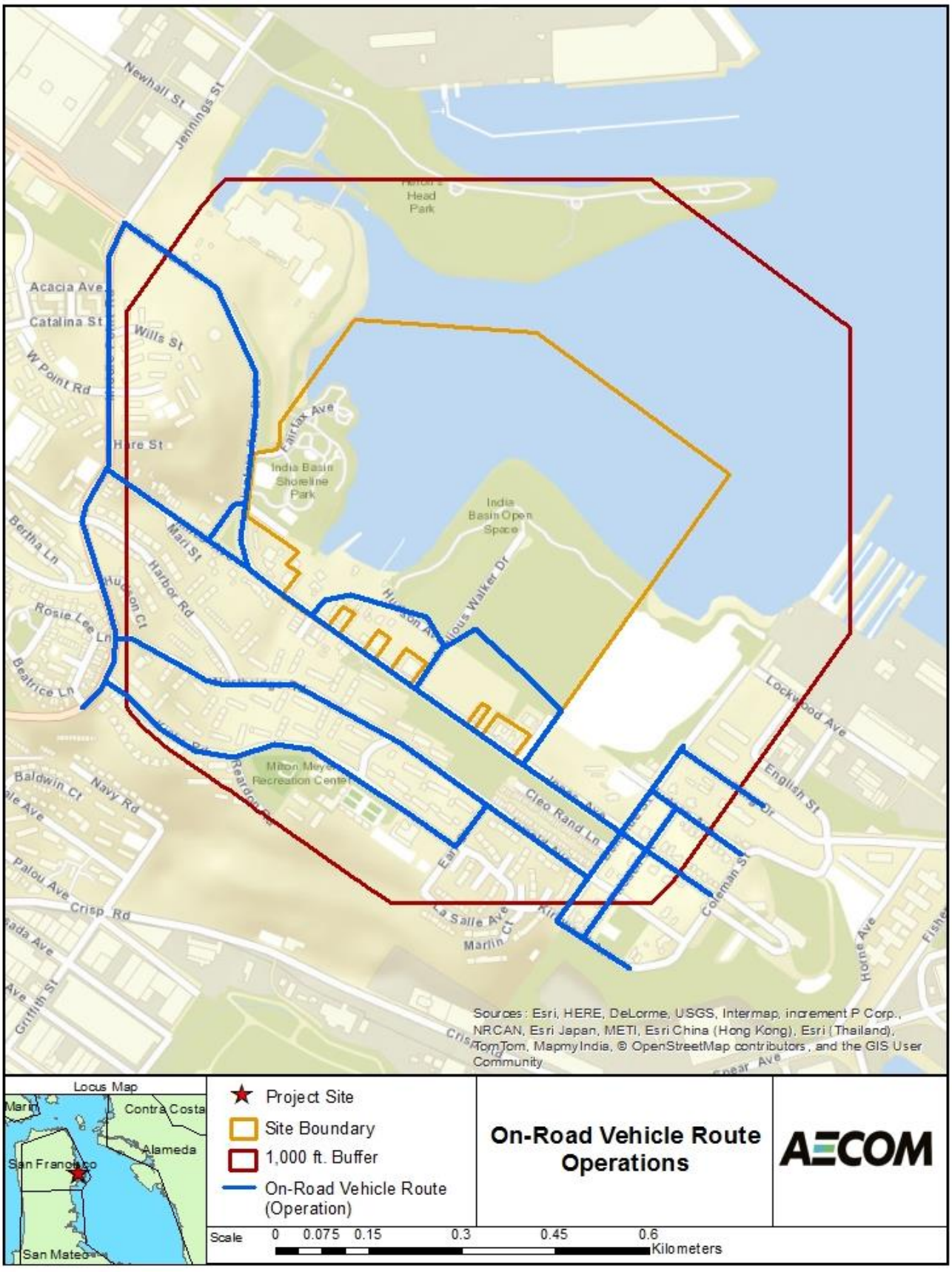

Figure 3.7-6 **On-Road Vehicle Routes Modeled**

Table 3.7-34: $PM_{2.5}$ Concentrations for Operations under the Proposed Project or Variant, Baseline plus Project Conditions[4]

Year	Proposed Project ($\mu g/m^3$)	Variant ($\mu g/m^3$)
Baseline Conditions (CRRP-HRA [2014])[1]	8.4	8.4
Project Operation[2]	1.6	2.4
Total $PM_{2.5}$	10.0	10.8
APEZ Criterion	9.0	9.0
Project Contribution Criterion	0.2	0.2
Significant?	Yes	Yes

Notes: $\mu g/m^3$ = micrograms per cubic meter; APEZ = Air Pollutant Exposure Zone; CRRP = Community Risk Reduction Plan; HRA = health risk assessment; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; UTM = Universal Transverse Mercator

[1] Community Risk Reduction Plan health risk assessment for Year 2014 (Existing Conditions).

[2] Based on $PM_{2.5}$ annual concentrations at an off-site receptor. Receptor location: X (UTM) = 555,180, Y (UTM) = 4,176,200.

[3] Concurrent construction projects at Hunters Point and Candlestick Point areas.

[4] Does not include Mitigation Measure Mitigation Measure M-AQ-1d, M-AQ-1e (10% reduction from traffic demand management) or Mitigation Measure M-AQ-1f.

Source: Compiled by AECOM in 2017.

Overlap of Construction and Operation—Annual $PM_{2.5}$ Concentrations

During the years 2021 and 2022, construction-related and operational emissions would overlap as a portion of the project site under the proposed project or variant would be occupied while construction is completed in other areas of the site.

India Basin Shoreline Park Property

As stated above, construction at the India Basin Shoreline Park property would be completed in 2020. Operations beginning in 2021 associated with India Basin Shoreline Park, which would include $PM_{2.5}$ emissions from vehicle trips to the property, would overlap with continued construction at the India Basin Open Space and 700 Innes properties. However, less than 1 percent of the total operational $PM_{2.5}$ concentration is associated with trips to the India Basin Shoreline Park property. There would be no on-site receptors at this property.

900 Innes Property

As stated above, construction at the 900 Innes property would be completed in 2019. Operations beginning in 2020 associated with the 900 Innes property, which would include $PM_{2.5}$ emissions from vehicle trips to the property, would overlap with construction at the India Basin Shoreline Park, India Basin Open Space, and 700 Innes properties. However, less than 1 percent of the total $PM_{2.5}$ concentration is associated with trips to the 900 Innes property. There would be no on-site receptors at this property.

India Basin Open Space Property

As stated above, construction at the India Basin Open Space property would occur in the years 2020 through 2022. Construction-related impacts were discussed previously in the "Construction—Annual $PM_{2.5}$ Concentrations" section, which included an assessment of concentrations at both existing off-site receptors for all 3 years of construction and at on-site receptors for the years 2021 and 2022 as Phase I of 700 Innes construction is

completed at the end of 2020. Operations associated with the India Basin Open Space property include $PM_{2.5}$ emissions from vehicle trips to the property, which were assessed previously in the "Operations—Annual $PM_{2.5}$ Concentrations" discussion.

700 Innes Property

As stated above, construction at the 700 Innes property is conservatively assumed to occur during all 5 years of the construction period. After Phase I is completed, which is assumed to be at the end of 2020 for this analysis, on-site receptors would be occupied. These on-site receptors would be exposed to all of the following:

- construction emissions from Phase II at this property;
- construction emissions at the India Basin Open Space property; and
- operational emissions from existing vehicle traffic, additional vehicle traffic from the portion of the proposed project or variant that is complete at the time the new residences are occupied, and operation of six emergency generators that would be completed as part of Phase I of construction at 700 Innes.

As stated previously in the "Operations—Annual $PM_{2.5}$ Concentrations" discussion, approximately 98 percent of the total $PM_{2.5}$ emissions are associated with trips to this property and the emergency generators. In the years 2021 and 2022, only Phase I would be occupied, and thus, approximately 75 percent of the vehicle traffic and emergency generator emissions would overlap with construction emissions.

Overall Impact for Overlapping Construction and Operation

Under either the proposed project or the variant, implementing Mitigation Measures M-AQ-1a through M-AQ-1f would reduce concentrations of $PM_{2.5}$ from construction and operation of the proposed project or variant. However, only emission reductions from Mitigation Measures M-AQ-1a and M-AQ-1e can be estimated with certainty. With these two mitigation measures, project construction and operation emissions of $PM_{2.5}$ would exceed APEZ threshold and the proposed project and variant contribution would be greater than 0.2 $\mu g/m^3$ (Tables 3.7-32 and 3.7-34). Mitigation Measures M-AQ-1b, M-AQ-1c, M-AQ-1d and M-AQ-1f would be expected to further reduce $PM_{2.5}$ emissions but the effectiveness of these measures cannot be accurately quantified at this time, as the availability of this equipment is uncertain and a program for offset credits has not been identified.

The proposed project or variant would have a significant impact during construction in 2019 and 2020 and in all years of operation. The greatest $PM_{2.5}$ impacts would result from operation of the proposed project or variant when all construction phases are complete. Therefore, even with the implementation of Mitigation Measures M-AQ-1a through M-AQ-1f, the overall impact of the proposed project or variant from overlapping construction and operation of the proposed project or variant would be *significant and unavoidable with mitigation.*

Construction and Operation—Lifetime Excess Cancer Risk

Sources of construction emissions from the project or variant evaluated for their contribution to excess cancer risk for both the proposed project and the variant included on-road vehicles and off-road construction equipment. Project-generated on-road construction traffic within 1,000 feet of the project site was modeled.

Sources of operational emissions evaluated for their contribution to excess cancer risk for both the proposed project and the variant included on-road vehicles and emergency generators. Project-generated on-road traffic within 1,000 feet of the project site was modeled. Based on consultation with Fehr & Peers (San Francisco, 2017), the route modeled for the on-road traffic extended from the project site west to Jennings Street, south to Kiska Road/Kirkwood Avenue, and east to Coleman Street. Figure 3.7-6 illustrates the on-road vehicle routes modeled for project operation. The EMFAC Gasoline Total Organic Gases Speciation was used to develop TACs from nondiesel vehicles for modeling.

Either the proposed project or the variant would include the operation of up to eight emergency generators. These sources were modeled as point sources, with stack heights equal to 1 meter above the nearest building height. Operational emissions were analyzed at all off-site and on-site receptors (Figures 3.7-3 and 3.7-4).

India Basin Shoreline Park Property

Construction at the India Basin Shoreline Park property is assumed to occur in the year 2020, before on-site receptors are present. For off-site sensitive receptors, the excess cancer risk from construction at and operation of this property (Table 3.7-35) would be less than 4 percent of the project excess cancer risk from construction of the proposed project or variant. For on-site sensitive receptors, the project excess cancer risk from project construction and operation at this property (Tables 3.7-36) and project operation(Table 3.7-37) would be less than 1 percent of the project-related excess cancer risk.

900 Innes Property

Construction at the 900 Innes property is assumed to occur in the year 2019, before on-site receptors are present. For off-site sensitive receptors, the project excess cancer risk from construction at and operation of this property (Table 3.7-35) would be less than 15 percent of the project excess cancer risk from construction and operation of the proposed project or variant. For on-site sensitive receptors, the project excess cancer risk from project operation at this property (Tables 3.7-36 and 3.7-37) would be less than 1 percent of the project-related excess cancer risk.

India Basin Open Space Property

Construction at the India Basin Open Space property is assumed to occur in the years 2020 through 2022. For off-site sensitive receptors, the project excess cancer risk from construction at and operation of this property (Table 3.7-35) would be less than 10 percent of the project excess cancer risk from construction and operation of the proposed project or variant. For on-site sensitive receptors, the project excess cancer risk from project construction and operation at this property (Tables 3.7-36) and project operation (Table 3.7-37) would be less than 1 percent of the project-related excess cancer risk.

700 Innes Property

Construction at the 700 Innes property is assumed to occur in the years 2018 through 2022. For off-site sensitive receptors, the project excess cancer risk from construction and operation at the 700 Innes property (Table 3.7-35) would be more than 70 percent of the project excess cancer risk from construction and operation of the proposed project or variant. For on-site sensitive receptors, the project excess cancer risk from project construction and operation at this property (Tables 3.7-36) and project operation (Table 3.7-37) would be approximately 98 percent of the project-related excess cancer risk.

Overall Impact for Lifetime Excess Cancer Risk

Table 3.7-35 presents the following details regarding excess cancer risk for the maximally exposed off-site resident receptor during each year of construction and 25 years of operation for the proposed project and variant (for a total of 30 years of assumed exposure) based on the OEHHA 2015 Guidance.

The maximum excess cancer risk due to the project is equal to 137.8 in a million for the proposed project and 125.4 in a million for the variant during the 30-year period. When added to existing conditions and the excess cancer risk contributions from nearby concurrent projects under construction, the total excess cancer risk during the 30-year period is 160.2 in a million for the proposed project and 147.8 in a million for the variant.

Table 3.7-35: Total Excess Cancer Risk for the Proposed Project or Variant at Existing Off-Site Residential Receptors Including Existing Conditions and Concurrent Projects

Year	Years of Age	Proposed Project (in a million)[9]	Variant (in a million)[9]
Existing Conditions (CRRP-HRA [2014])[1]	–	21.7	21.7
2018[2]	Third trimester to 1	42.2	39.0
2019[3]	1–2	79.0	69.5
2020[4]	2–3	10.2	8.4
2021[5,6]	3–4	1.7	1.7
2022[5,6]	4–5	0.69	0.7
Operation	25	4.0	6.1
Project Excess Cancer Risk	30	137.8	125.4
Concurrent Projects[8]	30	0.7	0.7
Total Excess Cancer Risk	30	160.2	147.1.8
APEZ Criterion		90.0	90.0
Project Contribution Criterion		7.0	7.0
Significant?		Yes	Yes

Notes: APEZ = Air Pollutant Exposure Zone; CRRP = Community Risk Reduction Plan; HRA = health risk assessment; UTM = Universal Transverse Mercator

[1] Community Risk Reduction Plan health risk assessment for Year 2014 (Existing Conditions).
[2] Maximum concentrations attributable primarily to grading (50%) and 700 Innes construction sources.
[3] Maximum concentrations attributable primarily to 700 Innes construction sources (75%).
[4] Maximum concentrations attributable primarily to 700 Innes (80%) construction sources.
[5] Maximum concentrations attributable primarily to 700 Innes construction sources.
[6] Assumes six of the eight emergency generators would be operating after the completion of Phase 1 construction.
[7] Maximum concentrations attributable primarily to 700 Innes sources (traffic).
[8] Hunters Point and Candlestick Point area construction excess cancer risk. Provided by Ramboll Environ.
[9] Receptor location: X (UTM) = 555,120, Y (UTM) = 4,176,220.

Source: Compiled by AECOM in 2017.

Table 3.7-36 presents the following details regarding excess cancer risk for the maximally exposed on-site resident receptor during the latter two years of construction and 28 years of operation for the proposed project and variant (for a total of 30 years of assumed exposure) based on the OEHHA 2015 Guidance.

The maximum excess cancer risk due to the project is equal to 104.1 in a million for the proposed project and 106.0 in a million for the variant during the 30-year period. When added to existing conditions and the excess cancer risk contributions from nearby concurrent projects under construction, the total excess cancer risk during the 30-year period is 113.0 in a million for the proposed project and 114.9 in a million for the variant.

Table 3.7-36: Total Excess Cancer Risk for the Proposed Project or Variant at On-Site Residential Receptors (Hillside Hamman Cove) during 2020–2021 Construction Years and Operation Including Existing Conditions and Concurrent Projects

Year	Years of Age	Proposed Project (in a million)[5]	Variant (in a million)[5]
Existing Conditions (CRRP-HRA [2014])[1]	–	7.4	7.4
2021[2,3]	Third trimester to 1	60.3	60.3
2022[2,3]	1–2	39.0	39.1
Operation	28	4.8	6.6
Project Excess Cancer Risk	30	104.1	106.0
Concurrent Projects[4]	30	1.5	1.5
Total Excess Cancer Risk	30	113.0	114.9
APEZ Criterion		90.0	90.0
Project Contribution Criterion		7.0	7.0
Significant?		Yes	Yes

Notes: APEZ = Air Pollutant Exposure Zone; CRRP = Community Risk Reduction Plan; HRA = health risk assessment; UTM = Universal Transverse Mercator

1 Community Risk Reduction Plan health risk assessment for Year 2014 (Existing Conditions).

2 Maximum concentrations attributable primarily to 700 Innes construction sources at Flats and Earl.

3 Assumes six of the eight emergency generators would be operating after the completion of Phase 1 construction.

4 Hunters Point and Candlestick Point area construction excess cancer risk. Provided by Ramboll Environ.

5 Receptor location: X (UTM) = 555,480, Y (UTM) = 4,176,260.

Source: Compiled by AECOM in 2017

Table 3.7-37 presents the following details regarding excess cancer risk for the maximally exposed on-site resident receptor during 30 years of operation (assumed exposure) for the proposed project and variant based on the OEHHA 2015 Guidance.

The maximum excess cancer risk due to the project is equal to 17.7 in a million for the proposed project and 19.3 in a million for the variant during the 30-year period. When added to existing conditions and the excess cancer risk contributions from nearby concurrent projects under construction, the total excess cancer risk during the 30-year period is 30.6 in a million for the proposed project and 32.2 in a million for the variant.

Table 3.7-37: Total Excess Cancer Risk for the Proposed Project or Variant at On-Site Residential Receptors (Flats and Earl) Postconstruction Including Existing Conditions and Concurrent Projects

Year	Years of Age	Proposed Project (in a million)[5]	Variant (in a million)[5]
Existing Conditions (CRRP-HRA [2014])[1]	–	12.3	12.3
Project Operation	30	17.7	19.3
Concurrent Projects[4]	30	0.6	0.6
Total Excess Cancer Risk	30	30.6	32.2
APEZ Criterion		90.0	90.0
Significant?		No	No

Notes: APEZ = Air Pollutant Exposure Zone; CRRP = Community Risk Reduction Plan; HRA = health risk assessment; UTM = Universal Transverse Mercator

[1] Community Risk Reduction Plan health risk assessment for Year 2014 (Existing Conditions).
[2] Maximum concentrations attributable primarily to 700 Innes construction sources at Flats and Earl.
[3] Assumes six of the eight emergency generators would be operating after the completion of Phase 1 construction.
[4] Hunters Point and Candlestick Point area construction excess cancer risk. Provided by Ramboll Environ.
[5] Receptor location: X (UTM) = 555,300, Y (UTM) = 4,176,260.

Source: Compiled by AECOM in 2017

Both the proposed project and the variant would result in a significant impact before mitigation at a limited number of receptors along Innes Avenue. Table 3.7-36 summarizes the excess cancer risk for the maximally exposed on-site receptor (a receptor located inHillside Hamman Cove buildings completed in 2020) during the last 2 years of construction (2021 and 2022) and 28 years of operation for the proposed project and variant (for a total of 30 years of assumed exposure). When added to existing conditions and the excess cancer risk from nearby concurrent projects under construction, the total excess cancer risk to the maximally exposed on-site receptor during the 30-year period is 113.0 in a million for the proposed project and 114.9 in a million for the variant. The project contribution as shown in Tables 3.7-35 and 3.7-36 exceed the project contribution criterion of 7.0 in a million. The proposed project and variant would result in a *significant* impact before mitigation at a limited number of receptors along Earl Street.

Table 3.7-37 summarizes the contribution to excess cancer risk for the maximally exposed on-site receptor (buildings at Flats and Earl completed in 2022) during 30 years of operation for the proposed project and variant. When added to existing conditions and the excess cancer risk from nearby concurrent projects under construction, the excess cancer risk during the 30-year period is 30.6 in a million for the proposed project and 32.2 in a million for the variant. The impact of the proposed project and the variant at these receptors would be *less than significant*. No mitigation measures are necessary.

Implementing Mitigation Measure M-AQ-1a, which is consistent with or exceeds the mitigation required by the Clean Construction Ordinance with the requirement to use Tier 4 Final construction equipment, and Mitigation Measure M-AQ-1e would reduce the total excess cancer risk from existing conditions, concurrent projects, and project-related emissions to 56.4 in a million for the proposed project and 57.7 in a million for the variant at off-site resident receptors (Table 3.7-38). The project related cancer risk is 9.9 in a million for the proposed project and 11.2 in a million for the variant, respectively.

Table 3.7-38: Total Excess Cancer Risk for the Proposed Project or Variant Including Mitigation Measures M-AQ-1a and M-AQ-1e at Existing Off-Site Residential Receptors Including Existing Conditions and Concurrent Projects

Year	Years of Age	Proposed Project (in a million)[9]	Variant (in a million)[9]
Existing Conditions (CRRP-HRA [2014])[1]	–	46.0	46.0
2018[2]	Third trimester to 1	3.4	3.4
2019[3]	1–2	4.3	4.7
2020[4]	2–3	0.4	0.4
2021[5,6]	3–4	0.1	0.1
2022[5,6]	4–5	< 0.1	< 0.1
Operations	25	1.6	2.5
Project Excess Cancer Risk	30	9.9	11.2
Concurrent Projects[8]	30	0.7	0.7
Total Excess Cancer Risk	30	56.4	57.7
APEZ Criterion		90.0	90.0
Significant?		No	No

Notes: APEZ = Air Pollutant Exposure Zone; CRRP = Community Risk Reduction Plan; HRA = health risk assessment; UTM = Universal Transverse Mercator

[1] Community Risk Reduction Plan health risk assessment for Year 2014 (Existing Conditions).
[2] Maximum concentrations attributable primarily to grading (50%) and 700 Innes construction sources using Tier 4 off-road equipment.
[3] Maximum concentrations attributable primarily to 700 Innes construction sources (75%) using Tier 4 off-road equipment.
[4] Maximum concentrations attributable primarily to 700 Innes (80%) construction sources using Tier 4 off-road equipment.
[5] Maximum concentrations attributable primarily to 700 Innes construction sources using Tier 4 off-road equipment.
[6] Assumes six of the eight emergency generators (Tier 4) would be operating after the completion of Phase 1 construction.
[7] Maximum concentrations attributable primarily to 700 Innes sources (traffic).
[8] Hunters Point and Candlestick Point area construction excess cancer risk. Provided by Ramboll Environ.
[9] Receptor location: X (UTM) = 554,740, Y (UTM) = 4,176,860.

Source: Compiled by AECOM in 2017.

Implementing Mitigation Measures M-AQ-1a and M-AQ-1e would reduce the total excess cancer risk at Hillside Hamman Cove on-site resident receptors to 36.0 in a million for the proposed project and 39.4 in a million for the variant (Table 3.7-39). The project related cancer risk is 6.1 in a million for the proposed project and 9.5 in a million for the variant, respectively.

Table 3.7-39: Total Excess Cancer Risk for the proposed Project or Variant Including Mitigation Measures M-AQ-1a and M-AQ-1e at On-Site Residential Receptors (Hillside Hamman Cove) during 2020–2021 Construction Years and Operation Including Existing Conditions and Concurrent Projects

Year	Years of Age	Proposed Project (in a million)[6]	Variant (in a million)[6]
Existing Conditions (CRRP-HRA [2014])[1]	–	29.2	29.2
2021[2,3]	Third trimester to 1	0.8	0.8
2022[2,3]	1–2	0.1	0.1
Operation	28	5.2	8.6
Project Excess Cancer Risk	30	6.1	9.5
Concurrent Projects[3]	30	0.7	0.7
Total Excess Cancer Risk	30	36.0	39.4
APEZ Criterion		90.0	90.0
Significant?		No	No

Notes: APEZ = Air Pollutant Exposure Zone; CRRP = Community Risk Reduction Plan; HRA = health risk assessment; UTM = Universal Transverse Mercator

[1] Community Risk Reduction Plan health risk assessment for Year 2014 (Existing Conditions).

[2] Maximum concentrations attributable primarily to 700 Innes construction sources (Tier 4 final off-road equipment) at Flats and Earl.

[3] Assumes six of the eight emergency generators (Tier 4) would be operating after the completion of Phase 1 construction.

4 Maximum concentrations attributable primarily to 700 Innes sources (traffic).

[5] Hunters Point and Candlestick Point area construction excess cancer risk. Provided by Ramboll Environ.

[6] Receptor location: X (UTM) = 555,040, Y (UTM) = 4,176,260.

Source: Compiled by AECOM in 2017.

Figure 3.7-7 shows the maximum excess cancer risk from construction of the proposed project at off-site and on-site receptors with the mitigation measures incorporated. The maximum excess cancer risk would be below the respective thresholds after implementation of Mitigation Measures M-AQ-1a and M-AQ-1e. Therefore, the impact of health effects from diesel PM emissions and vehicle exhaust generated during construction would be *less than significant with mitigation* with implementation of Mitigation Measures M-AQ-1a and M-AQ-1e.

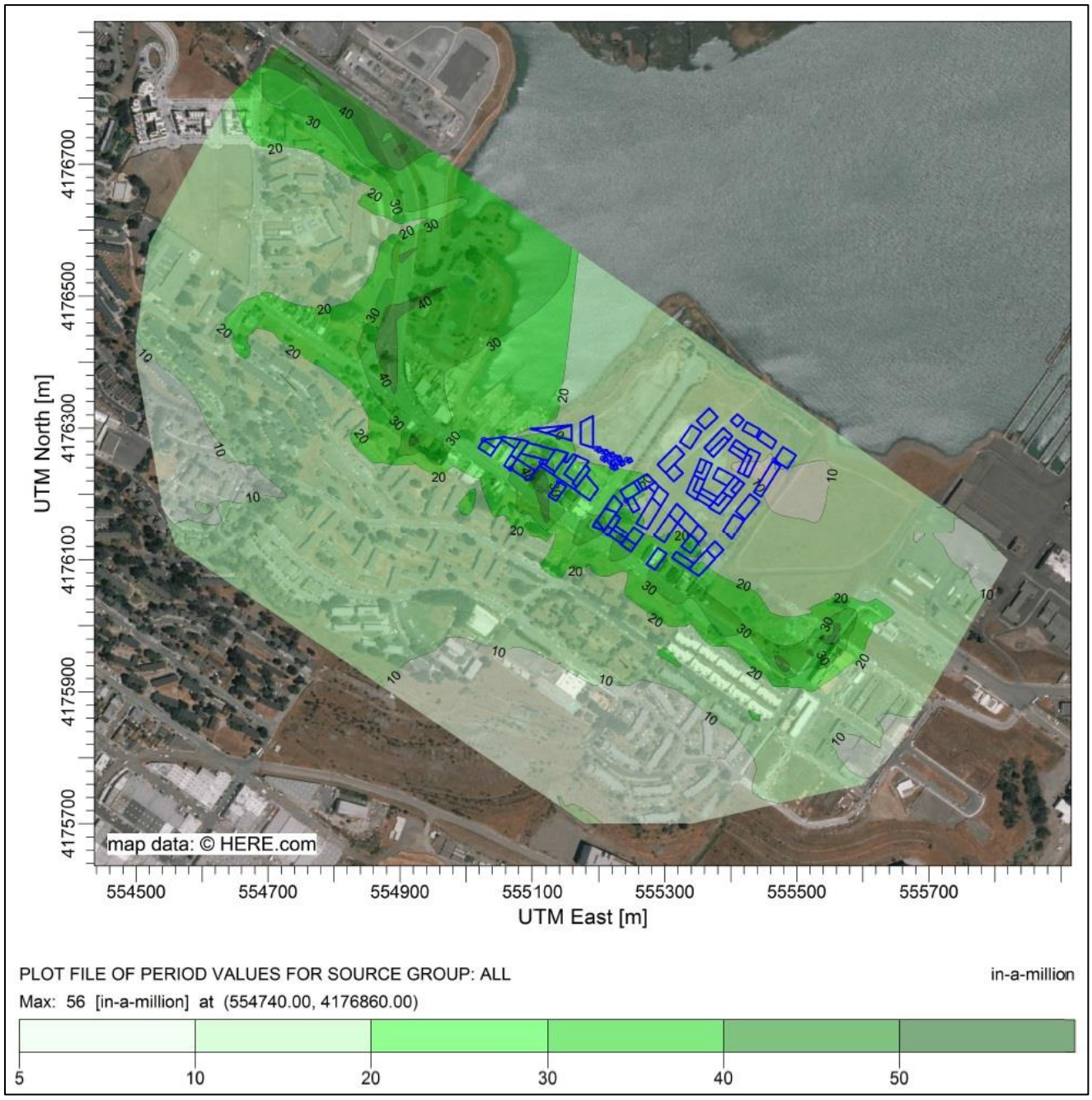

Figure 3.7-7 **Baseline plus Residential Proposed Project Maximum with Mitigation Measure Excess Cancer Risk from Construction and Operation**

Overall Impact Conclusion

The proposed project or variant would have a significant impact due to construction and operation for $PM_{2.5}$ and excess cancer risk. Under either the proposed project or the variant, implementing Mitigation Measures M-AQ-1a through M-AQ-1f would reduce concentrations of $PM_{2.5}$ from construction and operation of the proposed project or variant below the values reported in Table 3.7-34, but $PM_{2.5}$ concentrations would still be greater than the APEZ thresholds as there is uncertainly in the effectiveness of Mitigation Measures M-AQ-1b, M-AQ-1c, M-AQ-

1d, and M-AQ-1f. Mitigation Measures M-AQ-1a and M-AQ-1f would reduce the excess cancer risk to below the APEZ thresholds and thus the project would result in a *less than significant impact with mitigation* related to excess cancer risk. The impact conclusion related to $PM_{2.5}$ concentrations during construction and operation of the proposed project or variant would be significant and unavoidable with mitigation, as discussed above under Impact AQ-3. Therefore, the overall impact related to generation of emissions that would expose sensitive receptors to substantial pollutant concentrations would be *significant and unavoidable with mitigation*.

Impact AQ-4: The proposed project or variant would not generate emissions that create objectionable odors affecting a substantial number of people. ***(Less than Significant)***

The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. Although offensive odors do not cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and can cause citizens to submit complaints to local governments and regulatory agencies.

Projects with the potential to expose a substantial number of people to objectionable odors are deemed to have a significant impact. Facilities that may generate objectionable odors affecting a substantial number of people include wastewater treatment facilities, sanitary landfills, composting facilities, petroleum refineries, chemical manufacturing plants, and food processing facilities.

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Project construction under the proposed project or variant would include minor sources of odors. Exhaust odors from diesel engines, as well as ROG emissions from asphalt paving and the application of architectural coatings, may be considered offensive by some individuals. Odors from these sources would be localized and generally confined to the immediate area surrounding the development area. Similarly, diesel-fueled vehicles and trucks traveling on local roadways would produce diesel exhaust emissions. However, odors from diesel fumes, asphalt paving, and architectural coatings would be temporary and would disperse rapidly with distance from the source. Therefore, construction-generated odors would not result in frequent exposure of sensitive receptors to objectionable odor emissions. Construction-related odor impacts would be *less than significant*. No mitigation measures are necessary.

Operation

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

After buildout of the proposed project or variant, localized odors emitted by project sources such as solid waste collection, food preparation, and maintenance activities should have minimal effects on on-site and off-site sensitive receptors. The project would not include facilities that may generate objectionable odors affecting a substantial number of people. Furthermore, BAAQMD Regulation 7 limits odorous substances and specific odorous compounds from restaurants that employ more than five persons, like those that may be present at the project site. Therefore, operational odor impacts would be *less than significant*. No mitigation measures are necessary.

Overall Impact Conclusion

The proposed project or variant would have a *less than significant* impact due to construction or operation for objectionable odors. Project construction under the proposed project or variant would include minor sources of odors such as diesel engine exhaust, asphalt paving or architextural coatings but these would be confined to the immediate area of application and would be temporary. Project operation would include localized sources of odors such as food preparation, solid waste collection or buildings and grounds maintenace activites that would not affect a substantial number of people at any one time.

3.7.4 Cumulative Impacts

This section discusses the cumulative air quality impacts that could result from the proposed project or variant in conjunction with past, present, and reasonably foreseeable future projects.

Impact-C-AQ-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future development in the project area, would contribute to cumulative regional air quality impacts. (*Significant and Unavoidable with Mitigation*)

The contribution of a project's individual air pollutant emissions to regional air quality impacts is, by its nature, a cumulative effect. Emissions from past, present, and future projects in the region also have contributed or will contribute to adverse regional air quality impacts on a cumulative basis. No single project by itself would be sufficient in size to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative regional air quality conditions.

As described above, the project-level thresholds for criteria air pollutants are based on the levels at which new sources are anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants. Emissions under the proposed project or variant would exceed the project-level thresholds. Therefore, either the proposed project or the variant would result in a considerable contribution to cumulative regional air quality impacts. Implementing Mitigation Measures M-AQ-1a through M-AQ-1f would reduce this impact, but not to less than significant. This impact would be *significant and unavoidable with mitigation*.

Impact C-AQ-2: The proposed project or variant, in combination with past, present, and reasonably foreseeable future development in the project area, would contribute to cumulative health risk impacts on sensitive receptors. (*Significant and Unavoidable with Mitigation*)

The health risk assessment takes into account the cumulative contribution of existing, baseline localized health risks to sensitive receptors from sources included in the Citywide modeling, plus the sources associated with the proposed project or variant as well as future year 2040 assumptions concerning vehicle traffic.

Cumulative 2040 Conditions—$PM_{2.5}$ Concentrations

As shown in Tables 3.7-40 through 3.7-42, the year 2040 cumulative $PM_{2.5}$ concentrations are approximately 8.2 to 8.3 μg/m³ in the area of India Basin. When the project's operational impacts are added to cumulative conditions for the year 2040 from the CRRP-HRA, the $PM_{2.5}$ concentrations are 9.6 and 10.3 μg/m³ at off-site receptors, respectively. For the on-site receptors at Hillside Hamman Cove, the $PM_{2.5}$ concentrations are 9.9 and 10.7 μg/m³,

respectively, and for the on-site receptors at Flats and Earl, the PM2.5 concentrations are 8.7 and 9.0 µg/m³, respectively. Both the proposed project and variant would result in a cumulatively considerable contribution to the 2040 cumulative conditions that would exceed the APEZ threshold (Figure 3.7-8). Construction impacts are not included in this analysis as the buildout of the project is assumed to be complete by 2040.

Table 3.7-40: Cumulative Plus Project Conditions—Maximum Modeled $PM_{2.5}$ Annual Concentrations for the Proposed Project or Variant for Off-Site Receptors

Year	Proposed Project ($\mu g/m^3$)	Variant ($\mu g/m^3$)
Cumulative Conditions (CRRP-HRA [2040])[1]	8.3	8.3
Project Operations[2]	1.3	2.0
Cumulative $PM_{2.5}$ Total	9.6	10.3
APEZ Criterion	9.0	9.0
Project Contribution Criterion	0.2	0.2
Significant?	Yes	Yes

Notes: $\mu g/m^3$ = micrograms per cubic meter; APEZ = Air Pollutant Exposure Zone; CRRP = Community Risk Reduction Plan; HRA = health risk assessment; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; UTM = Universal Transverse Mercator

[1] Community Risk Reduction Plan health risk assessment for Year 2040 (Cumulative Conditions). Includes Hunters Point and Candlestick Point area project traffic.

[2] Maximum concentrations attributable to vehicle traffic (tire and brake wear) at an off-site receptor. Receptor location: X (UTM) = 555,160, Y (UTM) = 4,176,180.

Source: Compiled by AECOM in 2017.

Table 3.7-41: Cumulative Plus Project Conditions—Maximum Modeled $PM_{2.5}$ Annual Concentrations for the Proposed Project or Variant for On-Site Hillside Hamman Cove Receptors

Year	Proposed Project ($\mu g/m^3$)	Variant ($\mu g/m^3$)
Cumulative Conditions (CRRP-HRA [2040])[1]	8.3	8.3
Project Operations	1.6[2]	2.4[3]
Cumulative $PM_{2.5}$ Total	9.9	10.7
APEZ Criterion	9.0	9.0
Project Contribution Criterion	0.2	0.2
Significant?	Yes	Yes

Notes: $\mu g/m^3$ = micrograms per cubic meter; APEZ = Air Pollutant Exposure Zone; CRRP = Community Risk Reduction Plan; HRA = health risk assessment; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; UTM = Universal Transverse Mercator

[1] Community Risk Reduction Plan health risk assessment for Year 2040 (Cumulative Conditions). Includes Hunters Point and Candlestick Point area project traffic.

[2] Maximum concentrations attributable to vehicle traffic (tire and brake wear) at an on-site receptor. Receptor location: : X (UTM) = 555,200, Y (UTM) = 4,176,160.

[2] Maximum concentrations attributable to vehicle traffic (tire and brake wear) at an on-site receptor. Receptor location: : X (UTM) = 555,180, Y (UTM) = 4,176,200.

Source: Compiled by AECOM in 2017.

Table 3.7-42: Cumulative Plus Project Conditions—Maximum Modeled $PM_{2.5}$ Annual Concentrations for the Proposed Project or Variant for On-Site Flats and Earl Receptors

Year	Proposed Project ($\mu g/m^3$)[2]	Variant ($\mu g/m^3$)[3]
Cumulative Conditions (CRRP-HRA [2040])[1]	8.3	8.3
Project Operations[2]	1.6	2.4
Cumulative $PM_{2.5}$ Total	9.9	10.7
APEZ Criterion	9.0	9.0
Project Contribution Criterion	0.2	0.2
Significant?	Yes	Yes

Notes: $\mu g/m^3$ = micrograms per cubic meter; APEZ = Air Pollutant Exposure Zone; CRRP = Community Risk Reduction Plan; HRA = health risk assessment; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; UTM = Universal Transverse Mercator

[1] Community Risk Reduction Plan health risk assessment for Year 2040 (Cumulative Conditions). Includes Hunters Point and Candlestick Point area project traffic.

[2] Maximum concentrations attributable to vehicle traffic (tire and brake wear) at an on-site receptor. Receptor location: : X (UTM) = 555,200, Y (UTM) = 4,176,160.

[2] Maximum concentrations attributable to vehicle traffic (tire and brake wear) at an on-site receptor. Receptor location: : X (UTM) = 555,180, Y (UTM) = 4,176,200.

Source: Compiled by AECOM in 2017.

Implementing Mitigation Measure M-AQ-1e would not reduce the contribution from the proposed project or variant to 2040 cumulative conditions from those presented in Tables 3.7-40 through 3.7-42 as shown in Tables 3.7-43 through 3.7-45 to an annual average concentration of $PM_{2.5}$ less than 9.0 $\mu g/m^3$ at the maximally exposed receptor. Implementing Mitigation Measures M-AQ-1d and M-AQ-1f could potentially reduce these concentrations further but would likely not reduce them to below the APEZ threshold. When the proposed project's and variant's concentrations are added to the maximum annual-average cumulative concentrations of $PM_{2.5}$ in 2040, the $PM_{2.5}$ threshold and the project contribution threshold would be exceeded. Therefore, health effects associated with $PM_{2.5}$ emissions generated during operation of the proposed project or variant would be cumulatively considerable and impacts would be *significant and unavoidable with mitigation*.

Table 3.7-43: Cumulative Plus Project Conditions with Mitigation Measure M-AQ-1e —Maximum Modeled $PM_{2.5}$ Annual Concentrations for the Proposed Project or Variant for Off-Site Receptors

Year	Proposed Project ($\mu g/m^3$)	Variant ($\mu g/m^3$)
Cumulative Conditions (CRRP-HRA [2040])[1]	8.3	8.3
Project Operations[2]	1.3	2.0
Cumulative $PM_{2.5}$ Total	9.6	10.3
APEZ Criterion	9.0	9.0
Project Contribution Criterion	0.2	0.2
Significant?	Yes	Yes

Notes: $\mu g/m^3$ = micrograms per cubic meter; APEZ = Air Pollutant Exposure Zone; CRRP = Community Risk Reduction Plan; HRA = health risk assessment; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; UTM = Universal Transverse Mercator

[1] Community Risk Reduction Plan health risk assessment for Year 2040 (Cumulative Conditions). Includes Hunters Point and Candlestick Point area project traffic.

[2] Maximum concentrations attributable to vehicle traffic (tire and brake wear) at an on-site receptor. Receptor location: X (UTM) = 555,160, Y (UTM) = 4,176,180.

Source: Compiled by AECOM in 2017.

Table 3.7-44: Cumulative Plus Project Conditions with Mitigation Measure M-AQ-1e —Maximum Modeled $PM_{2.5}$ Annual Concentrations for the Proposed Project or Variant for On-Site Hillside Hamman Cove Receptors

Year	Proposed Project ($\mu g/m^3$)	Variant ($\mu g/m^3$)
Cumulative Conditions (CRRP-HRA [2040])[1]	8.3	8.3
Project Operations[2,3]	1.6	2.4[3]
Cumulative $PM_{2.5}$ Total	9.9	10.7
APEZ Criterion	9.0	9.0
Project Contribution Criterion	0.2	0.2
Significant?	Yes	Yes

Notes: $\mu g/m^3$ = micrograms per cubic meter; APEZ = Air Pollutant Exposure Zone; CRRP = Community Risk Reduction Plan; HRA = health risk assessment; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; UTM = Universal Transverse Mercator

[1] Community Risk Reduction Plan health risk assessment for Year 2040 (Cumulative Conditions). Includes Hunters Point and Candlestick Point area project traffic.

[2] Maximum concentrations attributable to vehicle traffic (tire and brake wear) at an on-site receptor. Receptor location: X (UTM) = 555,200, Y (UTM) = 4,176,160.

[3] Maximum concentrations attributable to vehicle traffic (tire and brake wear) at an on-site receptor. Receptor location: X (UTM) = 555,180, Y (UTM) = 4,176,200.

Source: Compiled by AECOM in 2017.

Table 3.7-45: Cumulative Plus Project Conditions with Mitigation Measure M-AQ-1e —Maximum Modeled $PM_{2.5}$ Annual Concentrations for the Proposed Project or Variant for On-Site Flats and Earl Receptors

Year	Proposed Project ($\mu g/m^3$)	Variant ($\mu g/m^3$)
Cumulative Conditions (CRRP-HRA [2040])[1]	8.2	8.2
Project Operations[2]	0.5	0.8
Cumulative $PM_{2.5}$ Total	8.7	9.0
APEZ Criterion	9.0	9.0
Project Contribution Criterion	0.2	0.2
Significant?	No	Yes

Notes: $\mu g/m^3$ = micrograms per cubic meter; APEZ = Air Pollutant Exposure Zone; CRRP = Community Risk Reduction Plan; HRA = health risk assessment; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; UTM = Universal Transverse Mercator

[1] Community Risk Reduction Plan health risk assessment for Year 2040 (Cumulative Conditions). Includes Hunters Point and Candlestick Point area project traffic.

[2] Maximum concentrations attributable to vehicle traffic (tire and brake wear) at an on-site receptor. Receptor location: X (UTM) = 555,300, Y (UTM) = 4,176,240.

Source: Compiled by AECOM in 2017.

Cumulative 2040 Excess Cancer Risk

The following details are presented in Table 3.7-46 through 3.7-48 for the maximally exposed resident receptor at the off-site and on-site receptor locations for the proposed project and variant in addition to cumulative excess cancer risk as modeled for the CRRP-HRA in the year 2040. When the excess cancer risk from operation of the proposed project or variant is added to cumulative 2040 conditions, the cumulative totalexcess cancer risk is 52.7 in a million for the proposed project and 55.1 in a million for the variant (Figure 3.7-9) at an off-site receptor. For the on-site receptor locations at Hillside Hamman Cove, the cumulative total excess cancer risk is 42.5 and 55.7 in a million for the proposed project and variant, respectively. For the on-site receptor locations at Flats and Earl, the cumulative total excess cancer risk is 29.9 and 31.4 in a million for the proposed project and variant, respectively.

These amounts are below the threshold for a cumulative excess cancer risk impact of 90.0. Therefore, no cumulative impact would occur. This impact would be *less than significant* before mitigation.

Although Mitigation Measure M-AQ-1e is not required to reduce excess cancer risk from the project under 2040 cumulative conditions, it is required to reduce the project's operational impact as discussed in Impact AQ-3. Mitigation Measure M-AQ-1e would reduce the excess cancer risk from operation of the proposed project or variant to 52.5 in a million for the proposed project and 54.9 in a million for the variant.

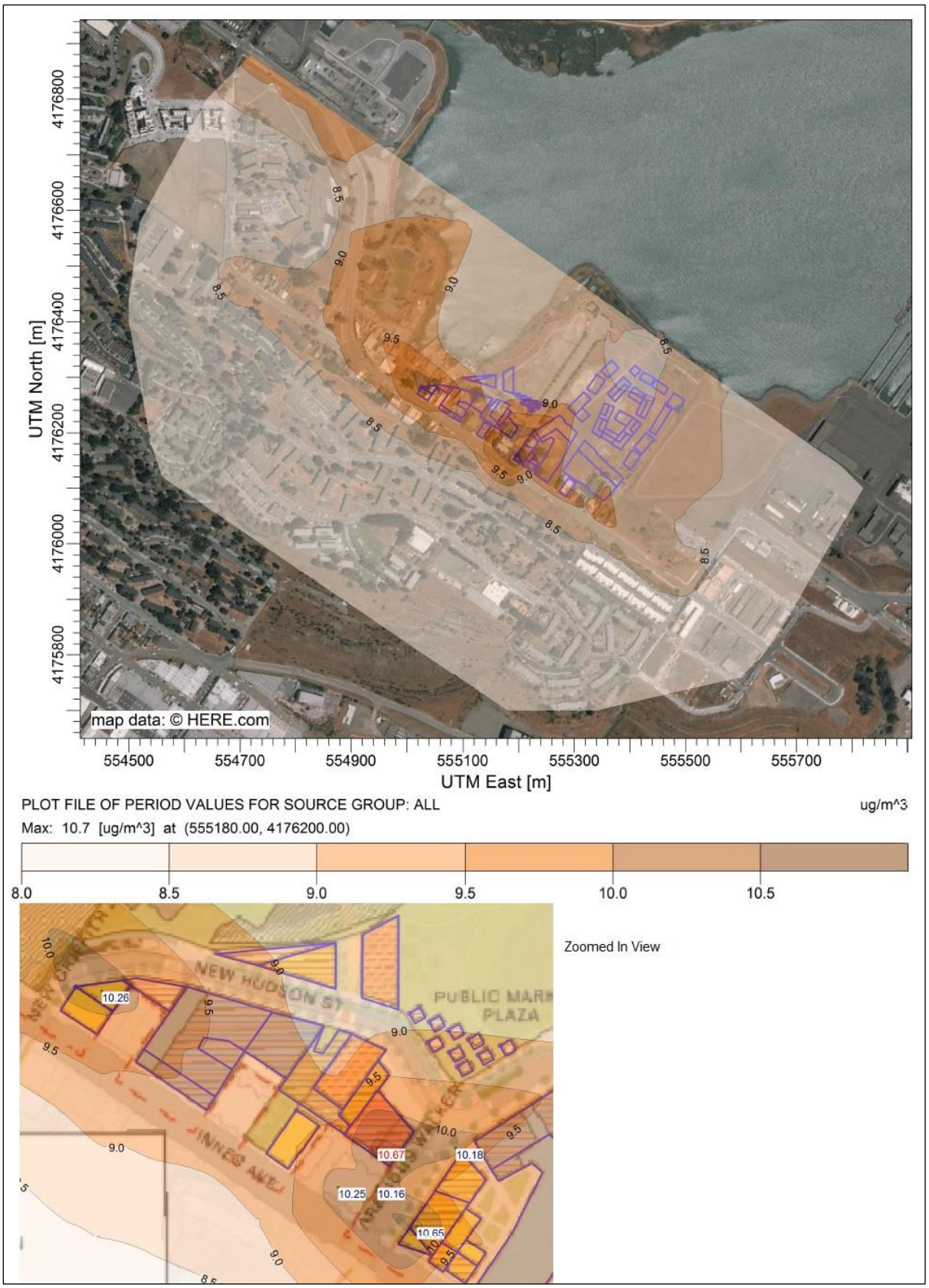

Figure 3.7-8 Modeled $PM_{2.5}$ Annual Concentrations under Cumulative Conditions (CRRP-HRA [2040]) plus Project Conditions for the Variant with Mitigation Measure

Table 3.7-46: Total Excess Cancer Risk Attributable to Project Operations under the Proposed Project or Variant plus Cumulative Conditions for Off-Site Receptors (CRRP-HRA [2040])

Year	Proposed Project (in a million)[3]	Variant (in a million)[3]
Cumulative Conditions (CRRP-HRA [2040])[1]	48.4	48.4
Project Operations[2]	4.3	6.7
Cumulative Excess Cancer Risk	52.7	55.1
APEZ Criterion	90.0	90.0
Significant?	No	No

Notes: APEZ = Air Pollutant Exposure Zone; CRRP = Community Risk Reduction Plan; HRA = health risk assessment; UTM = Universal Transverse Mercator
[1] Community Risk Reduction Plan health risk assessment for Year 2040 (Cumulative Conditions).
[2] Maximum concentrations attributable primarily to 700 Innes sources (specifically traffic).
[3] Receptor location: X (UTM) = 554,720, Y (UTM) = 4,176,860.
Source: Compiled by AECOM in 2017.

Table 3.7-47: Total Excess Cancer Risk Attributable to Project Operations under the Proposed Project or Variant plus Cumulative Conditions for Hillside Hamman Cove On-Site Receptors (CRRP-HRA [2040])

Year	Proposed Project (in a million)[3]	Variant (in a million)[3]
Cumulative Conditions (CRRP-HRA [2040])[1]	26.0	26.0
Project Operations[2]	16.5	29.7
Cumulative Total Excess Cancer Risk	42.5	55.7
APEZ Criterion	90.0	90.0
Significant?	No	No

Notes: APEZ = Air Pollutant Exposure Zone; CRRP = Community Risk Reduction Plan; HRA = health risk assessment; UTM = Universal Transverse Mercator
[1] Community Risk Reduction Plan health risk assessment for Year 2040 (Cumulative Conditions).
[2] Maximum concentrations attributable primarily to 700 Innes sources (specifically traffic).
[3] Receptor location: X (UTM) = 555,200, Y (UTM) = 4,176,160.
Source: Compiled by AECOM in 2017.

Table 3.7-48: Total Excess Cancer Risk Attributable to Project Operations under the Proposed Project or Variant plus Cumulative Conditions for Flats and Earl On-Site Receptors (CRRP-HRA [2040])

Year	Proposed Project (in a million)[3]	Variant (in a million)[3]
Cumulative Conditions (CRRP-HRA [2040])[1]	12.2	12.2
Project Operations[2]	17.7	19.2
Cumulative Total Excess Cancer Risk	29.9	31.4
APEZ Criterion	90.0	90.0
Significant?	No	No

Notes: APEZ = Air Pollutant Exposure Zone; CRRP = Community Risk Reduction Plan; HRA = health risk assessment; UTM = Universal Transverse Mercator

[1] Community Risk Reduction Plan health risk assessment for Year 2040 (Cumulative Conditions).

[2] Maximum concentrations attributable primarily to 700 Innes sources (specifically traffic).

[3] Receptor location: X (UTM) = 555,300, Y (UTM) = 4,176,260.

Source: Compiled by AECOM in 2017.

Overall Impact Conclusion for Cumulative Health Risk Impact

When $PM_{2.5}$ impacts of the proposed project or variant are added to the cumulative conditions for the year 2040, either the proposed project or variant would result in a cumulatively considerable contribution to a 2040 cumulative impact. Implementing Mitigation Measures M-AQ-1d, M-AQ-1e, and M-AQ-1f would reduce the project's contribution, but not sufficiently to result in an annual average concentration below the APEZ threshold of 9.0 μg/m³ and the project and variant contribution threshold of 0.2 μg/m³. The cumulative impact of the $PM_{2.5}$ concentrations related to emissions that would expose sensitive receptors to substantial pollutant concentrations would be *significant and unavoidable with mitigation*.The cumulative impact of the total excess cancer risk related to emissions that would expose sensitive receptors to substantial pollutant concentrations would be *less than significant*.

The proposed project or variant would be required to implement Mitigation Measures M-AQ-1d through M-AQ-1f. Implementing those mitigation measures would reduce the emissions of TACs and the $PM_{2.5}$ modeled impacts, but not to less than significant. Therefore, the cumulative air quality impact would be *significant and unavoidable with mitigation*.

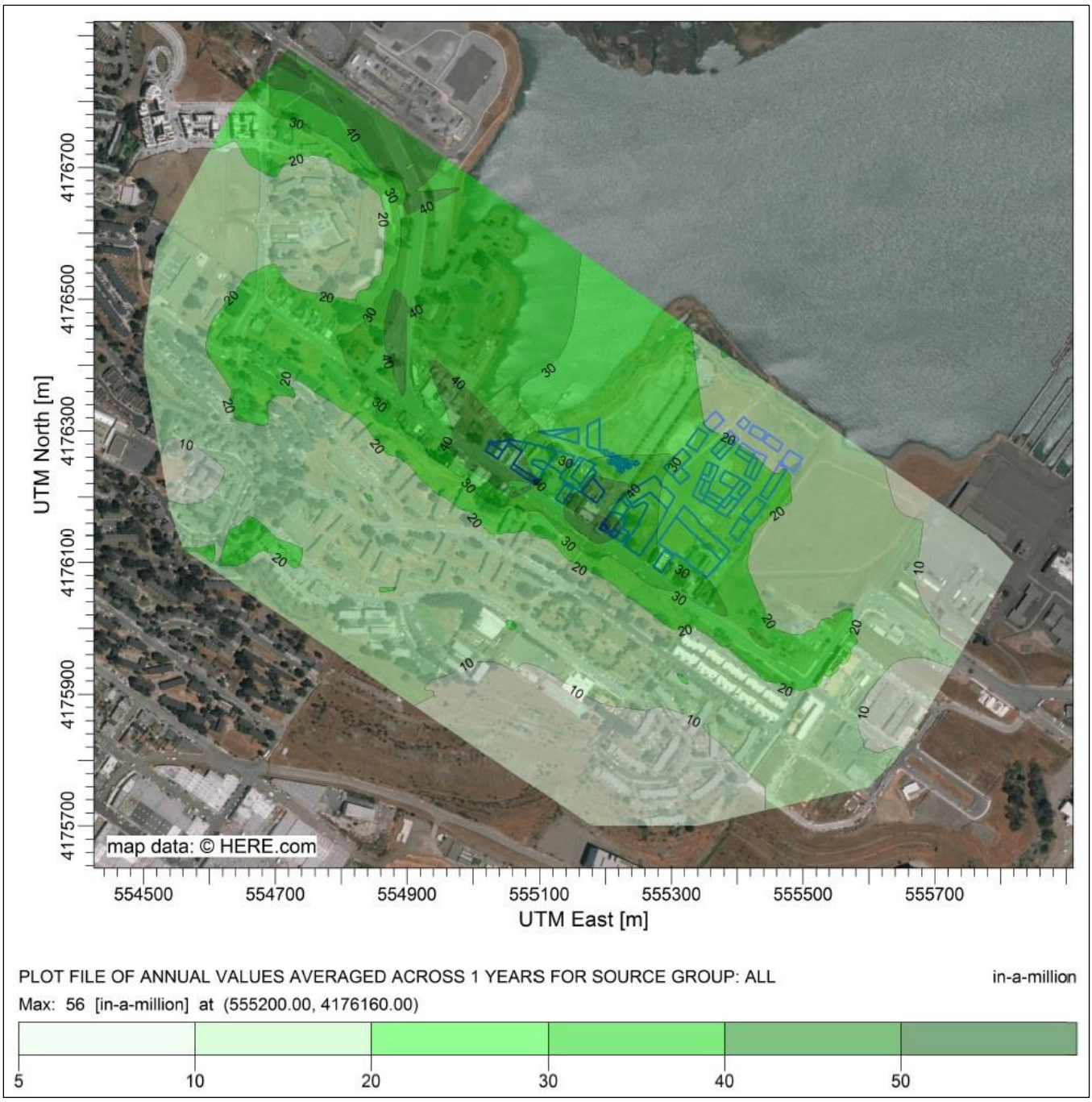

Figure 3.7-9 **Excess Cancer Risk under Cumulative CRRP-HRA 2040 Conditions plus Variant Conditions**

3.7.5 References

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3.8 GREENHOUSE GAS EMISSIONS

This section describes the existing environmental and regulatory setting related to greenhouse gas (GHG) emissions and addresses the potential impacts of the proposed project and variant. Further information supporting the GHG emissions analysis is provided in Appendix G of this EIR. Comments related to sea level rise, the potential impact of GHG emissions, and energy conservation measures (e.g., green roofs) were received during the public scoping period in response to the Notice of Preparation. These comments are addressed in this section.

3.8.1 Environmental Setting

Greenhouse Effect, Global Warming, and Climate Change

Most of the energy that affects the earth's climate comes from the sun. Some solar radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected by the atmosphere back toward space. As the earth absorbs high-frequency solar radiation, its surface gains heat and then re-radiates lower frequency infrared radiation back into the atmosphere.[1]

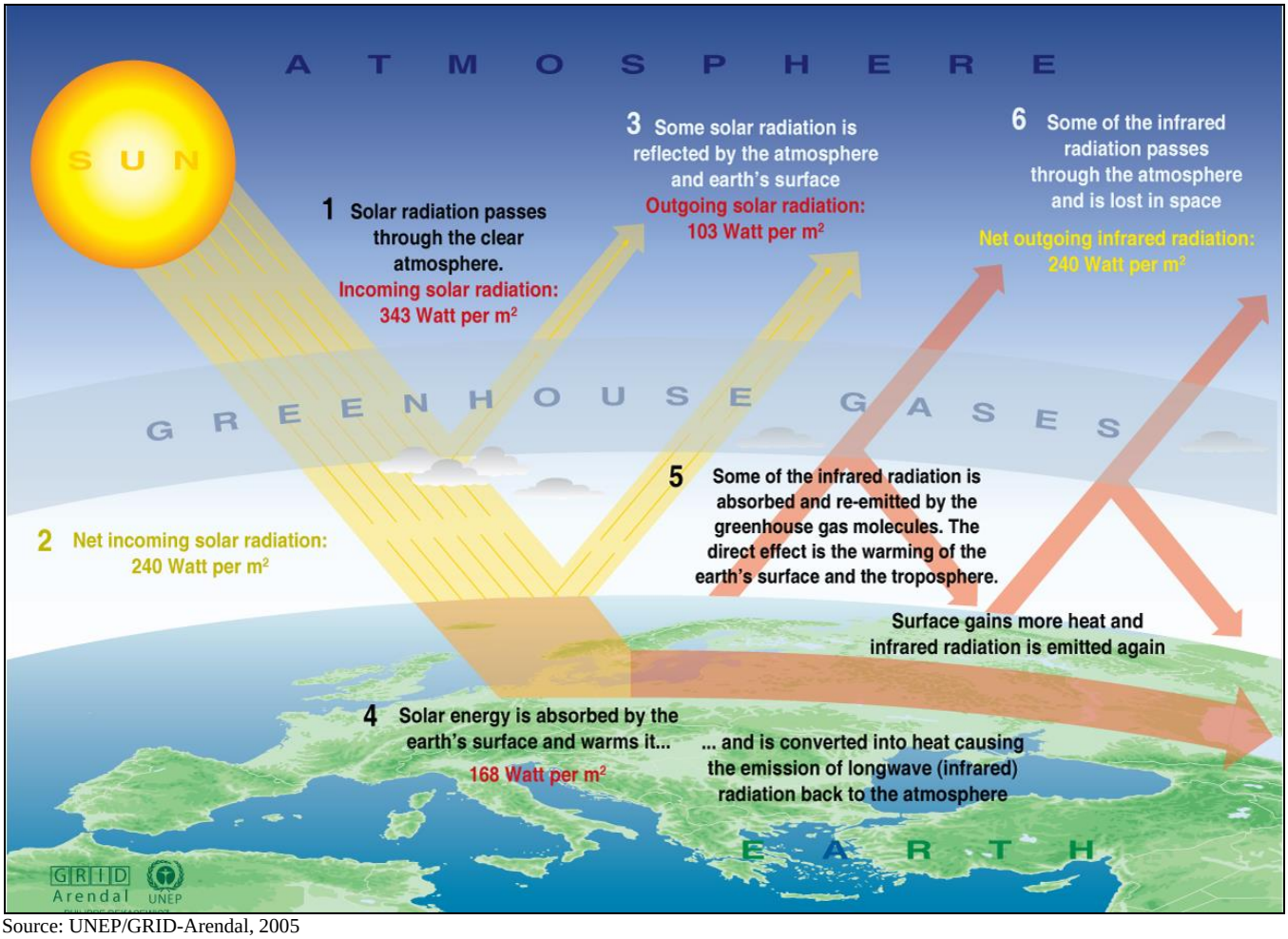
Most solar radiation passes through gases in the atmosphere classified as GHGs; however, infrared radiation is selectively absorbed by GHGs. GHGs in the atmosphere play a critical role in maintaining the balance between the earth's absorbed and radiated energy, the earth's radiation budget,[2] by trapping some of the infrared radiation emitted from the earth's surface that otherwise would have escaped to space (Figure 3.8-1). Specifically, GHGs affect the radiative forcing of the atmosphere,[3] which in turn affects the earth's average surface temperature. This phenomenon, the *greenhouse effect*, keeps the earth's atmosphere near the surface warmer than it would be otherwise and allows successful habitation by humans and other forms of life.

Combustion of fossil fuels and deforestation release carbon into the atmosphere that historically has been stored underground in sediments or in surface vegetation, thus exchanging carbon from the geosphere and biosphere to the atmosphere in the carbon cycle. With the accelerated increase in fossil fuel combustion and deforestation since the Industrial Revolution of the 19th century, concentrations of GHGs in the atmosphere have increased exponentially. Such emissions of GHGs in excess of natural ambient concentrations contribute to the enhancement of the natural greenhouse effect. This enhanced greenhouse effect has contributed to *global warming*, an increased rate of warming of the earth's average surface temperature.[4] Specifically, increases in GHGs lead to increased absorption of infrared radiation by the earth's atmosphere and warm the lower atmosphere further, thereby increasing temperatures and evaporation rates near the surface.

Variations in natural phenomena such as volcanoes and solar activity produced most of the global temperature increase that occurred during preindustrial times; more recently, however, increasing atmospheric GHG

[1] Frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun and emits radiation at a lower frequency (longer wavelength) than the high-frequency (short-wavelength) solar radiation emitted by the sun.
[2] This includes all gains of incoming energy and all losses of outgoing energy; the planet is always striving to be in equilibrium.
[3] This is the change in net irradiance at the tropopause after allowing stratospheric temperatures to readjust to radiative equilibrium, but with surface and tropospheric temperatures and state held fixed at the unperturbed values.
[4] This condition results when the earth has to work harder to maintain its radiation budget, because when more GHGs are present in the atmosphere, the earth must force emissions of additional infrared radiation out into the atmosphere.

concentrations resulting from human activity have been responsible for most of the observed global temperature increase.[5]



Source: UNEP/GRID-Arendal, 2005

Figure 3.8-1: The Greenhouse Effect

Global warming affects global atmospheric circulation and temperatures; oceanic circulation and temperatures; wind and weather patterns; average sea level; ocean acidification; chemical reaction rates; precipitation rates, timing, and form; snowmelt timing and runoff flow; water supply; wildfire risks; and other phenomena, in a manner commonly referred to as *climate change*.

Temperature Predictions by the Intergovernmental Panel on Climate Change

The Intergovernmental Panel on Climate Change (IPCC) was established by the World Meteorological Organization and United Nations Environment Programme to assess scientific, technical, and socioeconomic information relevant to the understanding of climate change, its potential impacts, and options for adaptation and mitigation. Warming of the climate system is now considered to be unequivocal (IPCC, 2007a), with the global surface temperature increasing approximately 1.33 degrees Fahrenheit (°F) over the last 100 years. The IPCC

[5] These basic conclusions have been endorsed by more than 45 scientific societies and academies of science, including all of the national academies of science of the major industrialized countries. Since 2007, no scientific body of national or international standing has maintained a dissenting opinion.

predicts increases in global average temperature of between 2° and 11°F over the next 100 years, depending on the scenario (IPCC, 2007a).

Greenhouse Gases and Global Emission Sources

Prominent GHGs that naturally occur in the earth's atmosphere are water vapor, carbon dioxide (CO_2), methane, nitrous oxide, and ozone. Anthropogenic (human-caused) emissions include additional releases of these GHGs plus releases of human-made gases with high global warming potential (GWP) (sulfur hexafluoride, hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and ozone-depleting substances) into the earth's atmosphere. The GHGs listed by the IPCC (CO_2, methane, nitrous oxide, HFCs, PFCs, and sulfur hexafluoride) are discussed below, in order of abundance in the atmosphere. Water vapor, despite being the most abundant GHG, is not discussed below because natural concentrations and fluctuations far outweigh anthropogenic influences, making it impossible to predict. Ozone is not included because it does not directly affect radiative forcing. Ozone-depleting substances, which include chlorofluorocarbons, halons, carbon tetrachloride, methyl chloroform, and hydrochlorofluorocarbons, are not included because they have been primarily replaced by HFCs and PFCs.

GHGs have different potentials for contributing to global warming. For example, methane is 21 times as potent as CO_2, while sulfur hexafluoride is 22,200 times more potent than CO_2. To simplify reporting and analysis, methods have been set forth to describe emissions of GHGs in terms of a single gas. The most commonly accepted method for comparing GHG emissions is the GWP methodology defined in the IPCC reference documents (IPCC, 2001a). The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of carbon dioxide equivalents (CO_2e), which compares the gas in question to that of the same mass of CO_2 (by definition, CO_2 has a GWP of 1). As such, a high GWP represents high absorption of infrared radiation and a long atmospheric lifetime compared to CO_2. One must also select a time horizon to convert GHG emissions to equivalent CO_2 emissions to account for chemical reactivity and lifetime differences among various GHG species. The standard time horizon for climate change analysis is 100 years. Generally, GHG emissions are quantified in terms of metric tons (MT) of CO_2e ($MTCO_2e$) emitted per year.

The atmospheric residence time of a gas is equal to the total atmospheric abundance of the gas divided by its rate of removal (Seinfeld and Pandis, 2006). The atmospheric residence time of a gas is, in effect, a half-life measurement of the length of time a gas is expected to persist in the atmosphere when accounting for removal mechanisms such as chemical transformation and deposition.

Table 3.8-1 lists the GWP of each GHG and its lifetime. Units commonly used to describe the concentration of GHGs in the atmosphere are parts per million (ppm), parts per billion (ppb), and parts per trillion (ppT), referring to the number of molecules of the GHG in a sampling of 1 million, 1 billion, or 1 trillion molecules of air. Collectively, HFCs, PFCs, and sulfur hexafluoride are referred to as high-GWP gases. CO_2 is by far the largest component of worldwide CO_2e emissions, followed by methane, nitrous oxide, and high-GWP gases, in order of decreasing contribution to CO_2e.

The primary human processes that release GHGs include the burning of fossil fuels for transportation, heating, and electricity generation; agricultural practices that release methane, such as livestock grazing and crop residue decomposition; and industrial processes that release smaller amounts of high-GWP gases. Deforestation and land cover conversion have also been identified as contributing to global warming by reducing the earth's capacity to

remove CO_2 from the air and altering the earth's albedo or surface reflectance, thus allowing more solar radiation to be absorbed. Specifically, CO_2 emissions associated with fossil fuel combustion are the primary contributors to human-induced climate change. CO_2, methane, and nitrous oxide emissions associated with human activities are the next largest contributors to climate change. Table 3.8-2 lists the anthropogenic contribution of GHGs in terms of CO_2e for the year 2004.

Table 3.8-1: Lifetimes, Global Warming Potentials, and Abundances of Significant Greenhouse Gases

Gas	Global Warming Potential (100 years)	Lifetime (years)
CO_2	1	50–200
CH_4	25	12
N_2O	298	114
HFC-23	14,800	270
HFC-134a	1,430	14
HFC-152a	124	1.4
CF_4	7,390	50,000
C_2F_6	12,200	10,000
SF_6	22,800	3,200

Notes:
C_2F_6 = hexafluoroethane; CF_4 = tetrafluoromethane; CH_4 = methane; CO_2 = carbon dioxide; HFC = hydrofluorocarbon; N_2O = nitrous oxide; SF_6 = sulfur hexafluoride
Tetrafluoromethane and hexafluoroethane are perfluorocarbons.
Source: IPCC, 2007b

Table 3.8-2: Global Anthropogenic Greenhouse Gas Emissions in 2004 (CO_2 Equivalent)

Gas	Source	GHG Emissions (Gt CO_2e/year)	CO_2e Percentage
CO_2	Deforestation, decay of biomass, etc.	8.5	17.3
CO_2	Fossil fuel use	27.7	56.6
CO_2	Other	1.4	2.8
CH_4	Agriculture, natural gas combustion, coal mining, etc.	7.0	14.3
N_2O	Agriculture, industry, transportation, etc.	3.9	7.9
High-GWP gases (includes HFCs, PFCs, and SF_6)	Consumer products, refrigerants, aluminum production, semiconductor manufacturing	0.5	1.1
All GHGs		49.0	100

Notes:
CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; GHG = greenhouse gas; Gt = gigatonnes; GWP = global warming potential; HFC = hydrofluorocarbon; N_2O = nitrous oxide; PFC = perfluorocarbon; SF_6 = sulfur hexafluoride
Source: IPCC, 2007c

Carbon Dioxide

CO_2 is the most important anthropogenic GHG and accounts for more than 75 percent of all anthropogenic GHG emissions. Its long atmospheric lifetime (on the order of decades to centuries) ensures that atmospheric concentrations of CO_2 will remain elevated for decades after GHG mitigation efforts to reduce GHG concentrations are promulgated (IPCC, 2007c).

Increasing concentrations of CO_2 in the atmosphere are largely attributable to emissions from the burning of fossil fuels, gas flaring, cement production, and land use changes. Three-quarters of the current radiative forcing is likely caused by anthropogenic CO_2 emissions that result from fossil fuel burning (and to a very small extent, from cement production); approximately one-quarter of radiative forcing results from land-use changes (IPCC, 2007d).

Anthropogenic emissions of CO_2 have increased concentrations in the atmosphere most notably since the Industrial Revolution. In the last 250 years, the concentration of CO_2 has increased from approximately 280 ppm to 379 ppm, an increase of more than 35 percent (IPCC, 2007d). IPCC estimates that the present atmospheric concentration of CO_2 has not been exceeded in the last 650,000 years and is likely to be the highest ambient concentration in the last 20 million years (IPCC, 2007e).

Methane

Methane, the main component of natural gas, is the second largest contributor to anthropogenic GHG emissions and has a GWP of 25 (IPCC, 2007b).

Anthropogenic emissions of methane are the result of growing rice, raising cattle, combusting natural gas, and mining coal. Atmospheric methane has increased from a preindustrial concentration of 715 ppb to 1,775 ppb in 2005 (IPCC, 2001b). Although the reason is unclear, atmospheric concentrations of methane have not risen as quickly as anticipated (NOAA, 2015).

Nitrous Oxide

Nitrous oxide is a powerful GHG with a GWP of 298 (IPCC, 2007b). Anthropogenic sources of nitrous oxide include agricultural processes, nylon production, fuel-fired power plants, nitric acid production, and vehicle emissions. Nitrous oxide also is used in rocket engines and racecars, and as an aerosol spray propellant. Agricultural processes that result in anthropogenic emissions of nitrous oxide are fertilizer use and microbial processes in soil and water.

Nitrous oxide concentrations in the atmosphere have increased from preindustrial levels of 270 ppb to 319 ppb in 2005, an 18 percent increase (IPCC, 2007b).

Hydrofluorocarbons

HFCs are human-made chemicals used in commercial, industrial, and consumer products and have high GWPs (EPA, 2017). HFCs generally are used as substitutes for ozone-depleting substances in automobile air conditioners and refrigerants.

Concentrations of HFCs have risen from zero to current levels (Table 3.8-2). Because these chemicals are human-made, they do not exist naturally in ambient conditions.

Perfluorocarbons

The most abundant PFCs are tetrafluoromethane (PFC-14) and hexafluoroethane (PFC-116). These human-made chemicals are emitted largely from aluminum production and semiconductor manufacturing processes. PFCs are extremely stable compounds that are destroyed only by very high-energy ultraviolet rays, which results in the very long lifetimes of these chemicals (EPA, 2017).

PFCs have large GWPs and have risen from zero to current levels (Table 3.8-2).

Sulfur Hexafluoride

Sulfur hexafluoride, another human-made chemical, is used as an electrical insulating fluid for power distribution equipment, in the magnesium industry, and in semiconductor manufacturing and also as a trace chemical for study of oceanic and atmospheric processes (IPCC, 2001a). In 1998, atmospheric concentrations of sulfur hexafluoride were 4.2 ppT and steadily increasing in the atmosphere.

Sulfur hexafluoride is the most powerful of all GHGs listed in IPCC studies, with a GWP of 22,800 (IPCC, 2007b).

Global Climate Change Issue

Climate change is a global problem because GHGs are global pollutants, unlike criteria air pollutants and hazardous air pollutants (also called toxic air contaminants), which are pollutants of regional and local concern. Pollutants with localized air quality effects have relatively short atmospheric lifetimes, approximately 1 day; by contrast, GHGs have long atmospheric lifetimes, several years to several thousand years. GHGs persist in the atmosphere for a long enough time to be dispersed around the globe.

Although the exact lifetime of any particular GHG molecule depends on multiple variables and cannot be pinpointed, more CO_2 is currently emitted into the atmosphere than is sequestered. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through photosynthesis and dissolution, respectively. These are two of the most common processes of CO_2 sequestration. Of the total annual human-caused CO_2 emissions, approximately 54 percent is sequestered through ocean uptake, Northern Hemisphere forest regrowth, and other terrestrial sinks within a year, whereas the remaining 46 percent of human-caused CO_2 emissions is stored in the atmosphere (Seinfeld and Pandis, 1998).

Similarly, effects of GHGs are borne globally, as opposed to the localized air quality effects of criteria air pollutants and hazardous air pollutants. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known and cannot be quantified, and no single project would be expected to measurably contribute to a noticeable incremental change in the global average temperature, or to global or local climates or microclimate.

Emissions of GHGs have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. A cumulative discussion and analysis of project impacts on global

climate change is presented in this EIR because, although it is unlikely that a single project will contribute significantly to climate change, cumulative emissions from many projects affect global GHG concentrations and the climate system.

Global climate change has the potential to result in sea level rise (resulting in flooding of low-lying areas), to affect rainfall and snowfall (leading to changes in water supply), to affect temperatures and habitats (affecting biological resources and public health), and to result in many other adverse environmental consequences.

Although the international, national, State, and regional communities are beginning to address GHGs and the potential effects of climate change, worldwide GHG emissions will likely continue to rise over the next decades.

Climate and Topography

Climate is the accumulation of daily and seasonal weather events over a long period of time, whereas weather is defined as the condition of the atmosphere at any particular time and place. For a detailed discussion of climate and topography, see Section 3.7, "Air Quality."

Existing Greenhouse Gas Emissions

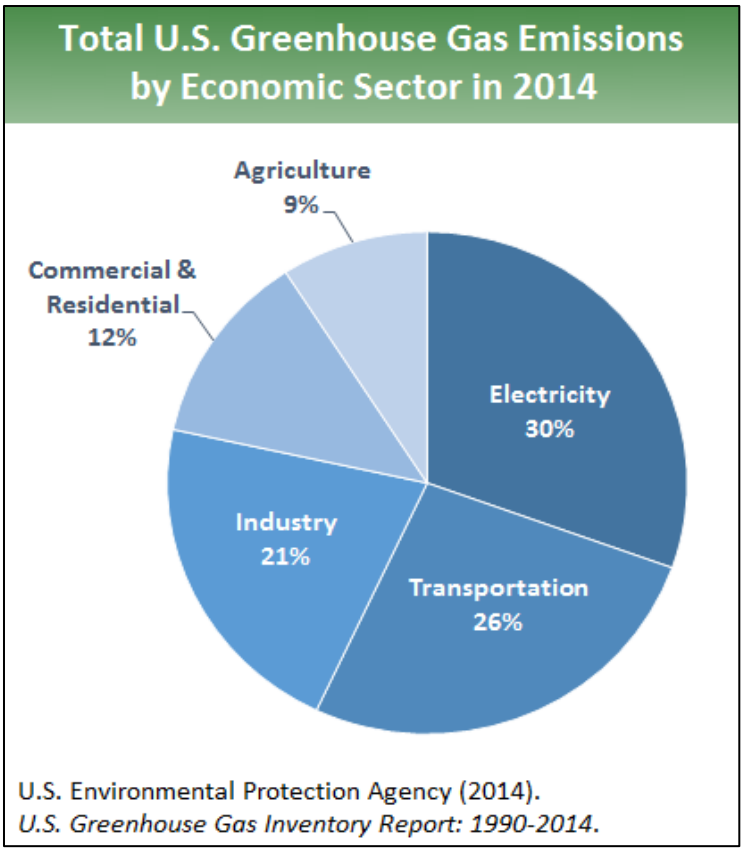
U.S. Greenhouse Gas Inventory

Total U.S. GHG emissions were approximately 1 percent higher in 2014 than in 2013 (EPA, 2014). Figure 3.8-2 presents 2014 U.S. GHG emissions by economic sector.

Total U.S. GHG emissions increased by 7.4 percent from 1990 to 2014 (from 6,233.2 million metric tons [MMT] CO_2e in 1990 to 6,870.5 MMT CO_2e in 2014). Since 1990, U.S. emissions have increased at an average annual rate of 0.3 percent. In 2014, cool winter conditions led to an increase in CO_2e emissions associated with fuels used for heating in the residential and commercial sectors. Transportation emissions also increased because of a small increase in vehicle miles traveled. There was also an increase in industrial production across multiple sectors, resulting in slight increases in industrial-sector emissions (EPA, 2016).

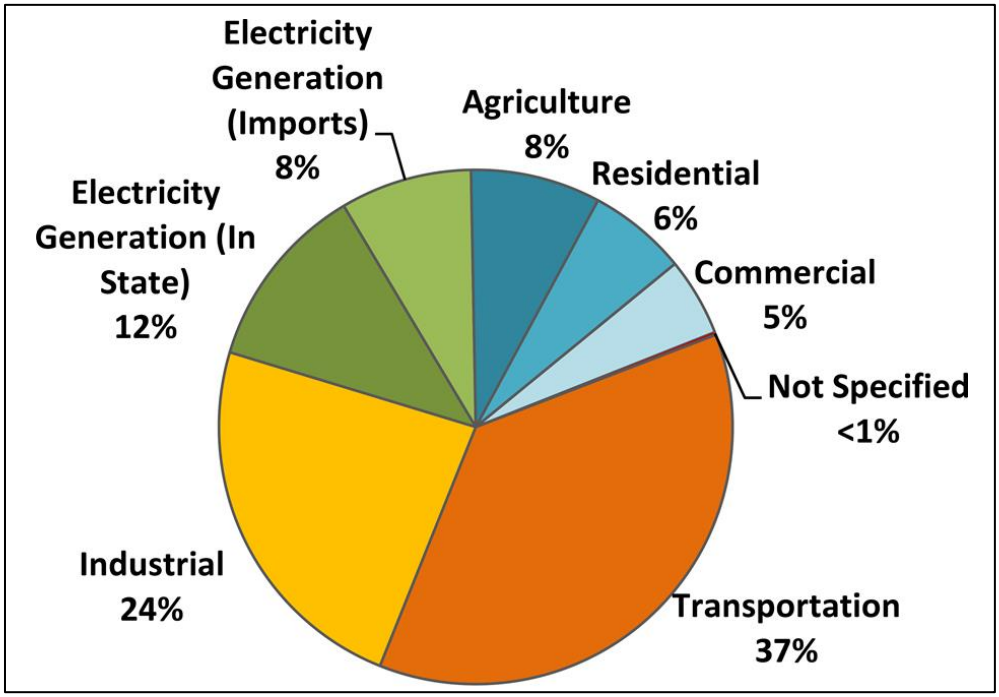
California Greenhouse Gas Inventory

As the second largest emitter of GHGs in the U.S. and the 12th to 16th largest GHG emitter in the world, California contributes a large quantity of GHGs to the atmosphere (CEC, 2006). Emissions of CO_2 are byproducts of fossil-fuel combustion and are attributable in large part to human activities associated with transportation, industry/manufacturing, electricity and natural gas consumption, and agriculture (ARB, 2016a and 2016b). In California, the transportation sector is the largest emitter of GHGs, followed by industry/manufacturing (ARB, 2016a and 2016b) (Figure 3.8-3).



Source: EPA, 2014
Note: Emissions shown do not include carbon sinks such as change in land uses and forestry.

Figure 3.8-2: 2012 U.S. Greenhouse Gas Emissions by Gas



Sources: ARB, 2016a and 2016b

Figure 3.8-3: 2014 California Greenhouse Gas Emissions by Sector

Emissions of methane and nitrous oxide are generally much lower than CO_2 emissions and are associated with anaerobic microbial activity resulting from agricultural practices, flooded soils, and landfills. The respective GWPs of methane and nitrous oxide are approximately 25 and 298 times the GWP of CO_2.

Bay Area Air Quality Management District Greenhouse Gas Inventory

The Bay Area Air Quality Management District (BAAQMD) published a GHG inventory for the San Francisco Bay Area (Bay Area), which provides an estimate of GHG emissions in the base year 2011 for all counties located in the jurisdiction of BAAQMD: Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, Napa, and the southern portions of Solano and Sonoma counties (BAAQMD, 2015). This GHG inventory is based on the standards for criteria pollutant inventories and is intended to support BAAQMD's climate protection activities.

Table 3.8-3 shows the 2011 breakdown of emissions by end-use sector for each county within BAAQMD's jurisdiction. The estimated GHG emissions are presented in CO_2e, which weights each GHG by its GWP. The GWPs used in the BAAQMD inventory are from the Second Assessment Report of the IPCC.

In 2011, San Francisco's GHG emissions accounted for approximately 6.6 percent of the Bay Area's total GHG emissions (BAAQMD, 2015). Transportation is the largest GHG emissions sector in the Bay Area and in San Francisco, followed by industrial/commercial, electricity generation and cogeneration, and residential fuel usage.

Table 3.8-3: 2011 County Emissions Breakdown by Sector

Sector	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano*	Sonoma*
Industrial/Commercial	2.7	17.8	0.4	0.2	1.2	1.4	4.1	2.7	0.5
Residential Fuel	1.3	1.0	0.3	0.1	0.9	0.8	1.5	0.3	0.4
Electricity/Co-gen.	0.9	7.2	0.1	0.1	0.5	0.4	2.2	0.4	0.2
Off-Road Equipment	0.2	0.2	0.0	0.0	0.2	0.1	0.4	0.0	0.1
Transportation	7.9	5.0	1.3	0.9	3.0	5.0	7.6	1.6	2.0
Agriculture/Farming	0.1	0.2	0.2	0.1	0.0	0.0	0.2	0.1	0.2
Total	**13.2**	**31.4**	**2.4**	**1.5**	**5.7**	**7.7**	**16.0**	**5.1**	**3.5**

Notes:
BAAQMD = Bay Area Air Quality Management District; CO_2e = carbon dioxide equivalent; co-gen = cogeneration
* Portion within BAAQMD jurisdiction
Source: BAAQMD, 2015

Existing Greenhouse Gas Emissions on the Project Site

India Basin Shoreline Park Property

The 5.6-acre India Basin Shoreline Park property currently supports recreational amenities, a portion of the Blue Greenway/San Francisco Bay Trail (Bay Trail), and parking areas. India Basin Shoreline Park provides informal access along the San Francisco Bay shoreline. Although many of the amenities at the park are not highly

used, GHG emissions are currently generated by vehicle trips to and from the site, from landscaping and maintenance equipment, and the use of barbeque grills.

900 Innes Property

The 900 Innes property totals 2.4 acres and is a former maritime industrial site that contains five buildings and structures. The structures on this property are dilapidated, are not currently used, and lack energy-generating or energy-consuming utilities. Therefore, these structures do not generate operational GHG emissions.

India Basin Open Space Property

The 6.2-acre India Basin Open Space property includes a pathway that is a portion of the Blue Greenway/ Bay Trail and contains benches, upland habitat, tidal salt marsh, mudflats, sand dunes, and native vegetation. Public access to the shoreline is limited to the Blue Greenway/Bay Trail. Therefore, this property does not generate GHG emissions.

700 Innes Property

The 700 Innes property consists of 30 parcels totaling 17.12 acres. This area generally is made of fill materials and is undeveloped except for six structures: a timber-framed industrial building, a residence, a commercial building, and three temporary structures. The primary sources of GHG emissions are vehicle trips to and from the site and energy consumption by the structures.

Climate Change Trends and Effects

CO_2 accounts for more than 75 percent of all anthropogenic GHG emissions, the atmospheric residence time of CO_2 is decades to centuries, and global atmospheric concentrations of CO_2 continue to increase at a faster rate than ever previously recorded. Thus, the warming impacts of CO_2 will persist for hundreds of years after mitigation is implemented to reduce GHG concentrations. Substantially higher temperatures, more extreme wildfires, and rising sea levels are just some of the direct effects experienced in California (CNRA, 2009; CEC, 2012). As reported by the California Natural Resources Agency in 2009, despite annual variations in weather patterns, California has seen a trend of increased average temperatures, more extreme hot days, fewer cold nights, longer growing seasons, less winter snow, and earlier snowmelt and rainwater runoff. Statewide average temperatures increased by about 1.7°F from 1895 to 2011, and a larger proportion of total precipitation is falling as rain instead of snow (CEC, 2006). Sea level rose by as much as 7 inches along the California coast over the last century, leading to increased erosion and adding pressure to the State's infrastructure, water supplies, and natural resources.

These observed trends in California's climate are projected to continue in the future. Research indicates that California will experience overall hotter and drier conditions with a continued reduction in winter snow (with concurrent increases in winter rains), as well as increased average temperatures and accelerating sea level rise. The frequency, intensity, and duration of extreme weather events such as heat waves, wildfires, droughts, and floods will also change (CNRA, 2009). The following is a summary of climate change factors and predicted trends specific to the Bay Area, using the latest information available as of 2014.

Temperature/Heat

The Bay Area is expected to experience warming over the rest of the 21st century. Consistent with statewide projections, the annual average temperature in the Bay Area will likely increase by 2.7°F between 2000 and 2050, based on GHGs that have already been emitted into the atmosphere. By the end of the century, the increase in the Bay Area's annual average temperature may range from approximately 3.5°F to 11°F relative to the average annual temperature simulated for the 1961–1990 baseline period used for the study, depending on the GHG emissions scenarios (CEC, 2009). The projected rate of warming, especially in the latter half of the 21st century, is considerably greater than warming rates derived from historical observed data.

Specific predictions related to temperature/heat are summarized below.

- The annual average temperature in the Bay Area has been increasing over the last several decades.
- The Bay Area is expected to see an increase in average annual temperature of 2.7°F by 2050, and 3.5°F to 11°F by 2100. Projections show a greater warming trend during the summer season. The coastal parts of the Bay Area will experience the most moderate warming trends. Locally, San Francisco is expected to see an increase of approximately 2.2°F by 2050, and 3.3°F to 5.5°F by 2100 (Cal-Adapt, 2014).
- Extreme heat events are expected to increase in duration, frequency, and severity by 2050. Extreme freeze events are expected to decrease in frequency and severity by 2100, but occasional colder-than-historical events may occur by 2050 (Cal-Adapt, 2014).

Precipitation/Rainfall/Extreme Events

Recent studies of the effect of climate change on the long-term average precipitation for the state of California show some disagreement (CEC, 2009). Considerable variability exists across individual models, and examining the average changes can mask more extreme scenarios that project much wetter or drier conditions. California is expected to maintain a Mediterranean climate through the next century, with dry summers and wet winters that vary between seasons, years, and decades. Wetter winters and drier springs are also expected, but overall annual precipitation is not projected to change substantially. By mid-century, more precipitation is projected to occur in winter in the form of less frequent but larger events. The majority of global climate models predict drying trends across the state by 2100 (CNRA, 2009).

Specific factors related to precipitation/rainfall/extreme events are summarized below.

- The Bay Area has not experienced substantial changes in rainfall depth or intensities over the past 30 years.
- The Bay Area will continue to experience a Mediterranean climate, with little change in annual precipitation projected by 2050, although a high degree of variability may persist.
- An annual drying trend is projected to occur by 2100. The greatest decline in precipitation is expected to occur during the spring months, while minimal change is expected during the winter months.
- Increases in drought duration and frequency coupled with higher temperatures, as experienced in 2012, 2013, and 2014, will increase the likelihood of wildfires.
- California is expected to see increases in the magnitude of extreme events, including increased precipitation delivered from atmospheric river events, which would bring high levels of rainfall during short time periods

and increase the chance of flash floods. The Bay Area is also expected to see an increase in precipitation intensities, but possibly through less frequent events (CEC, 2009).

Sea Level Rise

For a detailed discussion of climate change trends and effects specific to sea level rise, see Section 3.15, "Hydrology and Water Quality."

Project Site

The project site ranges in site elevation from 6 feet to 45 feet (this elevation references the San Francisco City Datum[6] plus 100 feet), which is roughly equivalent to 5–50 feet above mean sea level.

3.8.2 Regulatory Framework

Federal

Massachusetts et al. v. Environmental Protection Agency (2007)

Twelve U.S. states and cities, including California, in conjunction with several environmental organizations, sued in *Massachusetts et al. v. Environmental Protection Agency* to force the U.S. Environmental Protection Agency (EPA) to regulate GHGs as a pollutant pursuant to the Clean Air Act (CAA). On April 2, 2007, the U.S. Supreme Court held that EPA has the authority to regulate GHG emissions as a pollutant pursuant to the CAA. However, the court did not decide whether EPA is required to regulate GHG emissions at this time, or may exercise discretion to not regulate at this time. Despite the Supreme Court ruling and the EPA proposal, no currently promulgated federal regulations that limit GHG emissions are applicable to the proposed project or variant.

U.S. Environmental Protection Agency Finding of Endangerment (2007)

On April 17, 2009, EPA issued a Proposed Endangerment and Cause or Contribute Finding for GHGs (Endangerment Finding) under the CAA. Through this Endangerment Finding, the EPA Administrator proposed that current and projected concentrations of CO_2, methane, nitrous oxide, HFCs, PFCs, and sulfur hexafluoride threaten the public health and welfare of current and future generations. In addition, the Administrator proposed that combined emissions of CO_2, methane, nitrous oxide, and HFCs from motor vehicles contribute to the atmospheric concentrations, and thus to the threat of climate change. Although the Endangerment Finding in itself does not place requirements on industry, it is an important step in EPA's process to develop regulation.

U.S. Environmental Protection Agency Advance Notice of Proposed Rulemaking (2008)

In June 2008, EPA issued an Advance Notice of Proposed Rulemaking inviting comments on options and questions regarding regulation of GHGs under the CAA; however, EPA has not yet proposed or adopted regulations in response to the decision in *Massachusetts et al. v. Environmental Protection Agency.* Thus, no

[6] The San Francisco City Datum is a reference datum that has been used by San Francisco for surveying purposes since the early 1900s. To convert to the North American Vertical Datum of 1988 (approximately mean sea level), add 11.37 feet to the City Datum.

currently promulgated federal regulations that limit GHG emissions are applicable to the proposed project or variant.

U.S. Environmental Protection Agency Rule: Mandatory Reporting of Greenhouse Gases (2009)

On September 22, 2009, the EPA Administrator signed a rule requiring mandatory reporting of emissions of GHGs from large sources in the United States. The rule was published in the *Federal Register* on October 30, 2009, and went into effect December 29, 2010. The rule applies to emissions of CO_2, methane, nitrous oxide, HFCs, PFCs, sulfur hexafluoride, nitrogen trifluoride, hydrofluorinated ethers, and select other fluorinated compounds. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 MT or more per year of GHGs are required to report annual emissions to EPA. The first annual reports for the largest emitting facilities, covering calendar year 2010, were submitted to EPA in 2011.

Energy Independence and Security Act

The Energy Policy Act of 2005 created the Renewable Fuel Standard program. The Energy Independence and Security Act of 2007 expanded this program by:

- expanding the Renewable Fuel Standard program to include diesel in addition to gasoline;
- increasing the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022;
- establishing new categories of renewable fuel, and setting separate volume requirements for each one; and
- requiring EPA to apply life-cycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

This expanded Renewable Fuel Standard program lays the foundation for achieving substantial reductions of GHG emissions from the use of renewable fuels, reducing the use of imported petroleum, and encouraging the development and expansion of the nation's renewable-fuels sector. For purposes of the proposed project and variant, implementation of the Energy Independence and Security Act's Renewable Fuel Standard program would take place in the form of compliance with the San Francisco GHG Reduction Strategy.

EPA and National Highway Traffic Safety Administration Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards Final Rule

The final combined EPA and National Highway Traffic Safety Administration (NHTSA) standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012–2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile, equivalent to 35.5 miles per gallon, if the automobile industry were to meet this CO_2 level solely through fuel economy improvements. Together, these standards will cut GHG emissions by an estimated 960 MMT and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program.

The State of California has received a waiver from EPA to have separate, stricter corporate average fuel economy standards. Thus, for purposes of the proposed project and variant, EPA's NHTSA GHG emissions and corporate average fuel economy standards would be implemented through compliance with Assembly Bill (AB) 1493, described below.

State

California Low Carbon Fuel Standard

The purpose of the California Low Carbon Fuel Standard (California Code of Regulations Title 17, Sections 95480–95490) is to reduce GHG emissions by reducing the full-fuel-cycle carbon intensity of the transportation fuel pool used in California. The California Low Carbon Fuel Standard generally applies to any transportation fuel that is sold, supplied, or offered for sale in California, and to any person responsible for a transportation fuel in a calendar year. The Low Carbon Fuel Standard applies to the following types of transportation fuels:

- California reformulated gasoline
- California diesel fuel
- Fossil compressed natural gas (CNG) or fossil liquefied natural gas (LNG)
- Biogas CNG or biogas LNG
- Electricity
- Compressed or liquefied hydrogen
- A fuel blend containing hydrogen
- A fuel blend containing greater than 10 percent ethanol by volume
- A fuel blend containing biomass-based diesel
- Denatured fuel ethanol (also known as E100)
- Neat biomass-based diesel (also known as B100)
- Any other liquid or nonliquid fuel

Assembly Bill 1493 "Pavley"—Light Duty Vehicle Greenhouse Gas Emissions Standards

On June 30, 2009, EPA granted California the authority to implement GHG emission reduction standards for new passenger cars, pickup trucks, and sport utility vehicles. With this waiver, it was expected that implementing California's AB 1493 "Pavley" regulations would reduce GHG emissions from California passenger vehicles by approximately 22 percent in 2012 and 30 percent in 2016, all while improving fuel efficiency and reducing motorists' costs.

The California Air Resources Board (ARB) has adopted a new approach to passenger vehicles—cars and light trucks—by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The new approach also includes efforts to support and accelerate the numbers of plug-in hybrids and zero-emission vehicles in California.

Executive Orders S-3-05 and B-30-15

Executive Order (EO) S-3-05 sets forth a series of target dates by which statewide emissions of GHGs need to be progressively reduced, as follows: by 2010, reduce GHG emissions to 2000 levels (approximately 457 million $MTCO_2e$); by 2020, reduce emissions to 1990 levels (approximately 427 million $MTCO_2e$); and by 2050, reduce emissions to 80 percent below 1990 levels (approximately 85 million $MTCO_2e$). As discussed in Section 3.8.1, "Environmental Setting," above, California produced about 452 million $MTCO_2e$ in 2010, thereby meeting the 2010 target date to reduce GHG emissions to 2000 levels.

EO B-30-15 set an additional, interim statewide GHG reduction target of 40 percent below 1990 levels to be achieved by 2030. The purpose of this interim target is to ensure that California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050 (Governor's Office, 2015). EO B-30-15 also requires all State agencies with jurisdiction over sources of GHG emissions to implement measures within their statutory authority to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets.

Assembly Bill 32 and Climate Change Scoping Plan

In 2006, the California Legislature passed AB 32 (California Health and Safety Code Section 38500 et seq.), also known as the California Global Warming Solutions Act. AB 32 requires ARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020.

Pursuant to AB 32, ARB adopted the *Climate Change Scoping Plan* (Scoping Plan) in December 2008, outlining measures to meet the 2020 GHG reduction limits. To meet the goals of AB 32, California must reduce its GHG emissions by 30 percent below projected 2020 business-as-usual emissions levels (approximately 15 percent below 2008 levels) (ARB, 2010). The Scoping Plan estimates a reduction of 174 million $MTCO_2e$ from transportation, energy, agriculture, forestry, and other high-global-warming sectors (Table 3.8-4) (ARB, 2010).

The AB 32 Scoping Plan also anticipates that actions by local governments will result in reduced GHG emissions because local governments have the primary authority to plan, zone, approve, and permit development to accommodate population growth and the changing needs of their jurisdictions (ARB, 2008). The Scoping Plan also relies on the requirements of Senate Bill (SB) 375 (discussed below) to align local land use and transportation planning to achieve GHG reductions.

The Scoping Plan must be updated every 5 years to evaluate AB 32 policies and ensure that California is on track to achieve the 2020 GHG reduction goal. In 2014, ARB released the *First Update to the Climate Change Scoping Plan* (First Update), which builds on the initial Scoping Plan with new strategies and recommendations. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low-carbon investments. This update defines ARB's climate change priorities for the next 5 years and sets the groundwork to reach the long-term goals set forth in EO S-3-05. The First Update highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals in the initial Scoping Plan. It also evaluates how to align the State's longer-term GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use (ARB, 2014).

Table 3.8-4: Greenhouse Gas Reductions from the Assembly Bill 32 Scoping Plan Categories

Scoping Plan Category	GHG Reductions ($MMTCO_2e$)
Transportation	62.3
Electricity and Natural Gas	49.7
Industry	1.4
Landfill Methane Control	1
Forestry	5
High–Global Warming Potential GHGs	20.2
Additional Reductions Needed to Achieve the GHG Cap	34.4
Other Recommended Measures	
Government Operations	1–2
Agriculture—Methane Capture at Large Dairies	1
Water	4.8
Green Buildings	26
Recycling/Zero Waste	9
Total Reductions Counted toward 2020 Target	**216.8 to 217.8**

Notes:
GHG = greenhouse gas; $MMTCO_2e$ = million metric tons of carbon dioxide equivalent; Scoping Plan = Climate Change Scoping Plan
Sources: ARB, 2008 and 2010

Senate Bill 32

On August 24, 2016, the California Legislature passed SB 32 (California Health and Safety Code Section 38566), amending the California Global Warming Solutions Act of 2006. SB 32 directs ARB to adopt, to the extent technologically feasible and cost-effective, any rules and regulations necessary to achieve a reduction in statewide GHG emissions of 40 percent below 1990 levels by 2030. The passage of SB 32 codifies the 2030 interim GHG emissions reduction target established by EO B-30-15.

SB 32 was paired with AB 197 (California Government Code Section 9147.10; California Health and Safety Code Sections 39510, 39607, 38506, 38531, and 38562.5). AB 197 provides additional guidance on how to achieve the reduction targets established in EO B-30-15 and SB 32. SB 32 and AB 197 became effective January 1, 2017.

Senate Bill 375

The Scoping Plan also relies on the requirements of SB 375 (Chapter 728, Statutes of 2008), also known as the Sustainable Communities and Climate Protection Act of 2008, to reduce carbon emissions from land use decisions. SB 375 requires regional transportation plans developed by each of the State's 18 metropolitan planning organizations to incorporate a "sustainable communities strategy" in each regional transportation plan that will then achieve GHG emission reduction targets set by ARB. For the Bay Area, the per-capita GHG emission reduction target is a 7 percent reduction by 2020 and a 15 percent reduction by 2035 from 2005 levels

(ARB, 2011). *Plan Bay Area*, the Metropolitan Transportation Commission's regional transportation plan, adopted in July 2013, is the region's first plan subject to SB 375 requirements (ABAG and MTC, 2013).

Senate Bills 1078, 107, X1-2, and 350 and Executive Orders S-14-08 and S-21-09

California established aggressive renewable portfolio standards under SB 1078 (Chapter 516, Statutes of 2002) and SB 107 (Chapter 464, Statutes of 2006), which require retail sellers of electricity to provide at least 20 percent of their electricity supply from renewable sources by 2010. EO S-14-08 (November 2008) expanded the State's renewable portfolio standard from 20 percent to 33 percent of electricity from renewable sources by 2020. In September 2009, Governor Schwarzenegger continued California's commitment to the renewable portfolio standard by signing EO S-21-09, which directed ARB to enact regulations to help California meet the renewable portfolio standard goal of 33 percent renewable energy by 2020 (CPUC, 2015).

In April 2011, Governor Brown signed SB X1-2 (Chapter 1, Statutes of 2011), codifying the GHG reduction goal of 33 percent by 2020 for energy suppliers. This renewable portfolio standard preempts ARB's electricity standard of 33 percent renewable sources and applies to all electricity suppliers (not just retail sellers) in the state, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. SB X1-2 specified that all of these entities would have to adopt the new renewable portfolio standard goals of 20 percent of retail sales from renewable sources by the end of 2013, 25 percent by the end of 2016, and 33 percent by the end of 2020 (CPUC, 2015). Eligible renewable sources include geothermal, ocean wave, solar photovoltaic, and wind, but exclude large hydroelectric (30 megawatts or more). Because the San Francisco Public Utilities Commission (SFPUC) receives more than 67 percent of its electricity from large hydroelectric facilities, the remaining electricity provided by SFPUC must be 100 percent renewable (SFPUC, 2011). SB 350 (Chapter 547, Statutes of 2015), signed by Governor Brown in October 2015, dramatically increased the stringency of the renewable portfolio standard. SB 350 establishes a target for the renewable portfolio standard of 50 percent by 2030, along with interim targets of 40 percent by 2024 and 45 percent by 2027.

Regional

Bay Area 2010 Clean Air Plan

BAAQMD is responsible for attaining and maintaining federal and State air quality standards in the San Francisco Bay Area Air Basin, as established by the federal CAA and the California Clean Air Act (CCAA), respectively. The CAA and CCAA require that plans be developed for areas that do not meet air quality standards. The most recent air quality plan, the *Bay Area 2010 Clean Air Plan*, includes a goal of reducing GHG emissions to 1990 levels by 2020, 40 percent below 1990 levels by 2035, and 80 percent below 1990 levels by 2050 (BAAQMD, 2010a).

In addition, BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the San Francisco Bay Area Air Basin. The program includes GHG-reduction measures that promote energy efficiency, reduce vehicle miles traveled, and develop alternative energy sources (BAAQMD, 2012a).

The BAAQMD CEQA Air Quality Guidelines also assist lead agencies in complying with CEQA requirements regarding potentially adverse impacts on air quality. BAAQMD advises lead agencies to consider adopting a

GHG reduction strategy capable of meeting AB 32 goals and then reviewing projects for compliance with the San Francisco GHG Reduction Strategy as a CEQA threshold of significance (BAAQMD, 2012b). This is consistent with the approach to analyzing GHG emissions described in State CEQA Guidelines Section 15183.5.

Local

San Francisco Greenhouse Gas Reduction Ordinance

In May 2008, the City adopted Ordinance No. 81-08, amending the San Francisco Environment Code to establish GHG emissions targets and require departmental action plans and to authorize the San Francisco Department of the Environment to coordinate efforts to meet these targets. The City ordinance establishes the following GHG emissions reduction limits and target dates by which to achieve them (San Francisco, 2008):

- Determine 1990 citywide GHG emissions by 2008, the baseline level, with reference to which target reductions are set.
- Reduce GHG emissions by 25 percent below 1990 levels by 2017.
- Reduce GHG emissions by 40 percent below 1990 levels by 2025.
- Reduce GHG emissions by 80 percent below 1990 levels by 2050.

The City's GHG reduction targets are consistent with and are more ambitious than those set forth in Governor Brown's EO B-30-15 by targeting a 40 percent reduction of GHGs by 2025, rather than a 40 percent reduction by 2030.

San Francisco Greenhouse Gas Reduction Strategy

San Francisco has developed a number of plans and programs to reduce the City's contribution to global climate change and meet the goals of the Greenhouse Gas Reduction Ordinance. San Francisco's *Strategies to Address Greenhouse Gas Emissions* (San Francisco, 2013) documents the City's actions to pursue cleaner energy, energy conservation, alternative transportation, and solid waste policies. For instance, the City has implemented requirements and incentives that have measurably reduced GHG emissions, such as:

- increasing the energy efficiency of new and existing buildings,
- installing solar panels on building roofs,
- implementing a green-building strategy,
- adopting a zero-waste strategy,
- adopting a construction and demolition debris recovery ordinance,
- creating a solar energy generation subsidy,
- incorporating alternative fuel vehicles in the City's transportation fleet (including buses), and
- adopting a mandatory recycling and composting ordinance.

The strategy also includes 35 specific regulations for new development that would reduce a project's GHG emissions. If the 2013 Climate Action Strategy's plans and policies are implemented, San Francisco can reduce GHG emissions by 52 percent below 1990 levels by 2030 (San Francisco, 2013).

3.8.3 Impacts and Mitigation Measures

Significance Thresholds

The thresholds for determining the significance of impacts in this analysis are consistent with the environmental checklist in Appendix G of the State CEQA Guidelines, which has been modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the proposed project or the variant would result in a significant impact related to Greenhouse Gas Emissions. Implementation of the proposed project or the variant would have a significant effect on Greenhouse Gas Emissions if the proposed project or variant would:

- generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Approach to Analysis

GHG emissions and global climate change represent cumulative impacts. GHG emissions cumulatively contribute to the significant adverse environmental impacts of global climate change. No single project could generate enough GHG emissions to noticeably change the global average temperature; instead, the GHG emissions from past, present, and future projects and activities have contributed and will contribute to global climate change and its associated environmental impacts.

BAAQMD has prepared guidelines and methodologies for analyzing GHGs. These guidelines are consistent with Sections 15064.4 and 15183.5 of the State CEQA Guidelines, which address the analysis and determination of significant impacts from a proposed project's GHG emissions. State CEQA Guidelines Section 15064.4 allows lead agencies to rely on a qualitative analysis to describe GHG emissions resulting from a project. State CEQA Guidelines Section 15183.5 allows public agencies to analyze and mitigate GHG emissions as part of a larger plan for the reduction of GHGs and describes the required contents of such a plan. Accordingly, San Francisco has prepared its own GHG reduction strategy (described above), which BAAQMD has reviewed and concluded that "Aggressive GHG reduction targets and comprehensive strategies like San Francisco's help the Bay Area move toward reaching the State's AB 32 goals, and also serve as a model from which other communities can learn" (BAAQMD, 2010b). The San Francisco GHG Reduction Strategy, in the form of GHG checklists, was used to assess the GHG impacts of the proposed project and variant. The GHG emissions of the proposed project and variant were quantified for informational purposes and are available in Appendix G of this EIR.

The following analysis of the impact of the proposed project or variant on climate change focuses on the project's contribution to cumulatively significant GHG emissions. Because no individual project could emit GHGs at a level that could result in a significant impact on the global climate, this analysis is in a cumulative context, and this section does not include an individual project-specific impact statement.

Project Features

Both the proposed project and the variant would involve demolishing some of the existing buildings on the project site and constructing a mixed-use development that would include residential, commercial, institutional/educational, research and development, parking, and open space uses. As discussed below, the proposed project or variant would be required to comply with regulations and would include features designed to reduce energy-, transportation-, and waste-related emissions and to promote energy and water use efficiency.

Impact Evaluation

Note that because GHG emissions are global air pollutant emissions with an atmospheric residence time of at least 200 years, construction-related and operational GHG emissions associated with the proposed project and variant are discussed and analyzed in the cumulative impact analysis below.

3.8.4 Cumulative Impacts

Impact-C-GG-1: The proposed project or variant would generate greenhouse gas emissions, but not at levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing greenhouse gas emissions. (*Less than Significant*)

The proposed project and variant would be subject to regulations adopted to reduce GHG emissions as identified in the San Francisco GHG Reduction Strategy. As discussed below, compliance with the applicable regulations would reduce the GHG emissions associated with either the proposed project or the variant related to transportation, energy use, waste disposal, wood burning, and use of refrigerants associated with all four project site properties.

Specifically, compliance with the City's Commuter Benefits Program, Emergency Ride Home Program, transportation management programs, transportation sustainability fee, Jobs-Housing Linkage Program, bicycle parking requirements, low-emission car-parking requirements, and carsharing requirements would reduce transportation-related emissions (CO_2, methane, nitrous oxide) for the proposed project and variant. These regulations reduce GHG emissions from single-occupancy vehicles by promoting the use of alternative transportation modes with zero or lower GHG emissions on a per capita basis.

For the proposed project or variant, RPD and BUILD would be required to comply with the energy efficiency requirements of the City's Green Building Code, Stormwater Management Ordinance, Water Conservation and Irrigation ordinances, and Residential Energy Conservation Ordinance, which would promote energy and water use efficiency, thereby reducing the energy-related GHG emissions (CO_2, methane, nitrous oxide) of the proposed project or variant.[7] Additionally, the proposed project or variant would be required to meet the renewable-energy criteria of the Green Building Code, further reducing the project's energy-related GHG emissions.

The waste-related emissions associated with the proposed project or variant would be reduced through compliance with the City's Recycling and Composting Ordinance, Construction and Demolition Debris Recovery Ordinance, and Green Building Code requirements. These regulations reduce the amount of materials sent to

[7] Compliance with water conservation measures reduce the energy (and GHG emissions) required to convey, pump, and treat water required for the project.

landfills, reducing emissions of GHGs (methane) by landfill operations. These regulations also promote the reuse of materials, conserving their embodied energy[8] and reducing the energy required to produce new materials.

Compliance with the City's Street Tree Planting requirements would serve to increase carbon sequestration. Other regulations, including those limiting refrigerant emissions and the Wood Burning Fireplace Ordinance, would reduce emissions of HFCs, CO_2, and black carbon, respectively. Regulations requiring low-emitting finishes would reduce volatile organic compounds (VOCs).[9]

Thus, the proposed project and variant were both determined to be consistent with San Francisco's GHG reduction strategy via the GHG checklists for private development and municipal projects (San Francisco, 2016) (see Appendix G).

RPD and BUILD are required to comply with these regulations. The regulations have proven effective, as San Francisco's GHG emissions have measurably decreased relative to 1990 emissions levels, demonstrating that the City has met and exceeded EO S-3-05, AB 32, and the *Bay Area 2010 Clean Air Plan* GHG reduction goals for the year 2020. Other existing regulations, such as those implemented through AB 32, will continue to reduce the contributions of projects to climate change. In addition, San Francisco's local GHG reduction targets are consistent with the long-term GHG reduction goals of EO S-3-05, EO B-30-15, AB 32, SB 32, and the *Bay Area 2010 Clean Air Plan.*

Because the proposed project and variant are consistent with the City's GHG reduction strategy, they are also consistent with the GHG reduction goals of EO S-3-05, EO B-30-15, AB 32, SB 32, and the *Bay Area 2010 Clean Air Plan*, and would not conflict with these plans. Therefore, both the proposed project and variant would not exceed San Francisco's applicable GHG threshold of significance. As a result, the operational impact of the proposed project or variant at all four project site properties with respect to GHG emissions would be *less than significant*. No mitigation measures are necessary.

3.8.5 References

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[8] Embodied energy is the total energy required for the extraction, processing, manufacture, and delivery of building materials to the building site.

[9] Although they are not GHGs, VOCs are precursor pollutants that form ground-level ozone. Increased ground-level ozone is an anticipated effect of future global warming that would result in added health effects locally. Reducing VOC emissions would reduce the anticipated local effects of global warming.

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3.9 WIND

This section describes the existing environmental and regulatory setting related to wind and addresses the potential impacts of the proposed project and variant. The discussion of wind impacts in this section is supported by a wind tunnel report prepared by BMT Fluid Mechanics (BMT), included in EIR Appendix H. Comments regarding the differences in wind impacts between the proposed project and the variant were received during the public scoping period in response to the Notice of Preparation.

3.9.1 Environmental Setting

Wind and Buildings Basics

The difference in atmospheric pressure between two points on the earth causes air masses to move from the area of higher pressure to the area of lower pressure. This movement of air masses results in wind currents. The direction and speed of wind currents can be altered by natural features of the land or by buildings and structures. A building's exposure, massing, and orientation can affect nearby ground-level wind accelerations.

Exposure is a measure of the degree to which a building extends above surrounding structures into the wind stream. A building surrounded by taller structures is unlikely to cause adverse wind accelerations at ground level, while a small building can cause wind acceleration if it is freestanding and exposed. The friction and drag of groups of structures tend to slow the winds near ground level. A building that is much taller than its surrounding buildings intercepts and redirects winds down the vertical face of the building, where it creates ground-level wind and turbulence. Because of this downward deflection of high-level winds, substantial localized acceleration can occur around the base of a building, particularly near the building's corners. This is demonstrated by the common experience of windy conditions that occur near tall buildings even on a relatively calm day. The corner geometry is particularly important because sharp-edged corners cause separated flows with strong wind speed gradients (rapid changes over a short distance). Softer or more rounded corners improve this condition, although some acceleration still occurs. These redirected winds can be relatively strong and turbulent, and can be incompatible with the intended use of nearby ground-level spaces, such as walking, sitting, gathering, or waiting.

Massing affects the amount of wind a building intercepts and the occurrence of wind acceleration at ground level. In general, slab-shaped buildings (oriented perpendicular to the prevailing wind direction) have the greatest potential for wind acceleration; buildings with unusual shapes or setbacks have lesser effects. Buildings with geometrically complex design result in less ground-level wind acceleration.

The *orientation* of a building also affects the amount of wind the building intercepts and the extent of wind acceleration. Buildings with a wide axis perpendicular to prevailing winds will generally cause greater ground-level wind acceleration.

The comfort of pedestrians varies under different conditions of sun exposure, temperature, and wind speed:

- Winds up to 4 miles per hour (mph) have no noticeable effect on pedestrian comfort.
- At velocities between 4 and 8 mph, wind is felt on the face.

- Winds between 8 and 13 mph will disturb hair, cause clothing to flap, and extend a light flag mounted on a pole.
- Winds between 13 and 19 mph will raise loose paper, dust, and dry soil, and will disarrange hair.
- Winds between 19 and 26 mph will cause the force of the wind to be felt on the body.
- At 26 to 34 mph, umbrellas are used with difficulty, hair is blown straight, walking steadily is difficult, and wind noise is unpleasant.
- Winds exceeding 34 mph can result in loss of balance, and gusts can blow people over.

Existing Wind Conditions

San Francisco

Generally, winds in San Francisco originate on the Pacific Ocean and blow through the City in an easterly direction. Average wind speeds in San Francisco are highest in the summer and lowest in the winter, although the strongest peak winds generally occur in the winter. Throughout the year, wind speeds are typically highest in midafternoon and lowest in the early morning. Winds generally flow with the greatest frequency and strength from the northwest, west-northwest, west, and west-southwest.

India Basin Area and Project Site

The India Basin area is exposed primarily to winds blowing across San Francisco Bay (Bay) from the north to the east. However, these winds are more infrequent and calmer than the prevailing winds, which blow mainly from the west up and over Hunters Point Ridge, directly above the project site. The project site sits on the downwind edge of Hunters Point Ridge. Relatively low-rise (one- to three-story) buildings are dispersed around the immediate neighborhood. There is more space between the residential units occupying the sloped terrain on the west side of Hunters Point Ridge, west of the project site, than is typical in San Francisco. The existing upwind terrain, project site topography, and low-rise buildings that surround the project site do relatively little to block or impede strong prevailing winds originating from the Pacific Ocean on the west side of San Francisco. Thus, strong winds blow across the peninsula and, as might be expected, reach the India Basin area. The immediate vicinity of the India Basin area is substantially exposed on the west and receives some of the highest predominant wind flow.

3.9.2 Regulatory Framework

Federal

No federal plans, policies, regulations, or laws related to wind are applicable to the proposed project or variant.

State

No State plans, policies, regulations, or laws related to wind are applicable to the proposed project or variant.

Local

San Francisco Planning Code Section 148

To provide a safe and comfortable wind environment for people in San Francisco, the City has established pedestrian-comfort and wind-hazard criteria for use in evaluating the wind effects of proposed buildings. Section 148, "Reduction of Ground-level Wind Currents in C-3 Districts," of the San Francisco Planning Code (Planning Code) specifically outlines these criteria for the Downtown Commercial (C-3) districts.[1] Section 148 states that new buildings and additions in specific areas of San Francisco may not cause wind speeds that meet or exceed the wind-hazard criterion.

Section 148 establishes 11 mph as the pedestrian-comfort level for wind speed in areas of substantial pedestrian use and 7 mph as the comfort level for wind speed in public seating areas. New development cannot exceed these comfort levels more than 10 percent of the time year-round between 7:00 a.m. and 6:00 p.m. Section 148 also establishes a wind-hazard criterion: ground-level winds cannot meet or exceed an equivalent wind speed of 26 mph for more than a single hour during the year.

The requirements and criteria of Section 148 do not apply to the project site. However, the San Francisco Planning Department (Planning Department) uses the Section 148 wind-hazard criterion as a significance threshold in the CEQA environmental review process to assess the environmental impacts of projects throughout San Francisco. Therefore, the wind-hazard criterion serves as the basis of the analysis in this EIR.

The Section 148 criteria are based on pedestrian-level wind speeds that include the effects of wind turbulence; these are referred to as "equivalent wind speeds," defined in the Planning Code as "an hourly mean wind speed adjusted to incorporate the effects of gustiness or turbulence on pedestrians." The pedestrian-comfort criteria listed above are based on wind speeds measured and averaged over 1 minute, the same averaging time as used for the National Weather Service's wind data. In contrast, the wind-hazard criterion is defined by a wind speed measured and averaged over 1 hour. When stated on the same time basis as comfort-criteria wind speeds, the hazard-criterion wind speed (26 mph for a full hour) is a 1-minute average wind speed of 36 mph. The test results presented in the wind tunnel report for the project and in this section of the EIR use the 1-minute average of 36 mph for the wind-hazard criterion.

3.9.3 Impacts and Mitigation Measures

Significance Thresholds

The following significance threshold is from Appendix B of the San Francisco Planning Department's Environmental Review Guidelines and is used to determine the level of impacts related to wind. The proposed project or variant would result in a significant impact if it would:

- alter wind in a manner that substantially affects public areas.

[1] Additional Planning Code sections apply the same criteria to the Rincon Hill, Van Ness Avenue, and South of Market zoning or special use districts.

To assess whether a project would result in a significant impact under this significance criterion, the City uses the Planning Code's wind-hazard criterion; that is, it determines whether a project would cause equivalent wind speeds to reach or exceed the wind-hazard criterion of 26 mph for a single hour of the year. If a project would cause a wind hazard or add to an existing wind hazard in a public area, it may result in a significant impact under CEQA, because the project would result in hazardous wind conditions for pedestrians. The City requires mitigation measures to avoid new wind hazards or an increase in existing wind hazards.

The Section 148 comfort criteria are not CEQA significance criteria. The comfort criteria are discussed for informational purposes only.

Approach to Analysis

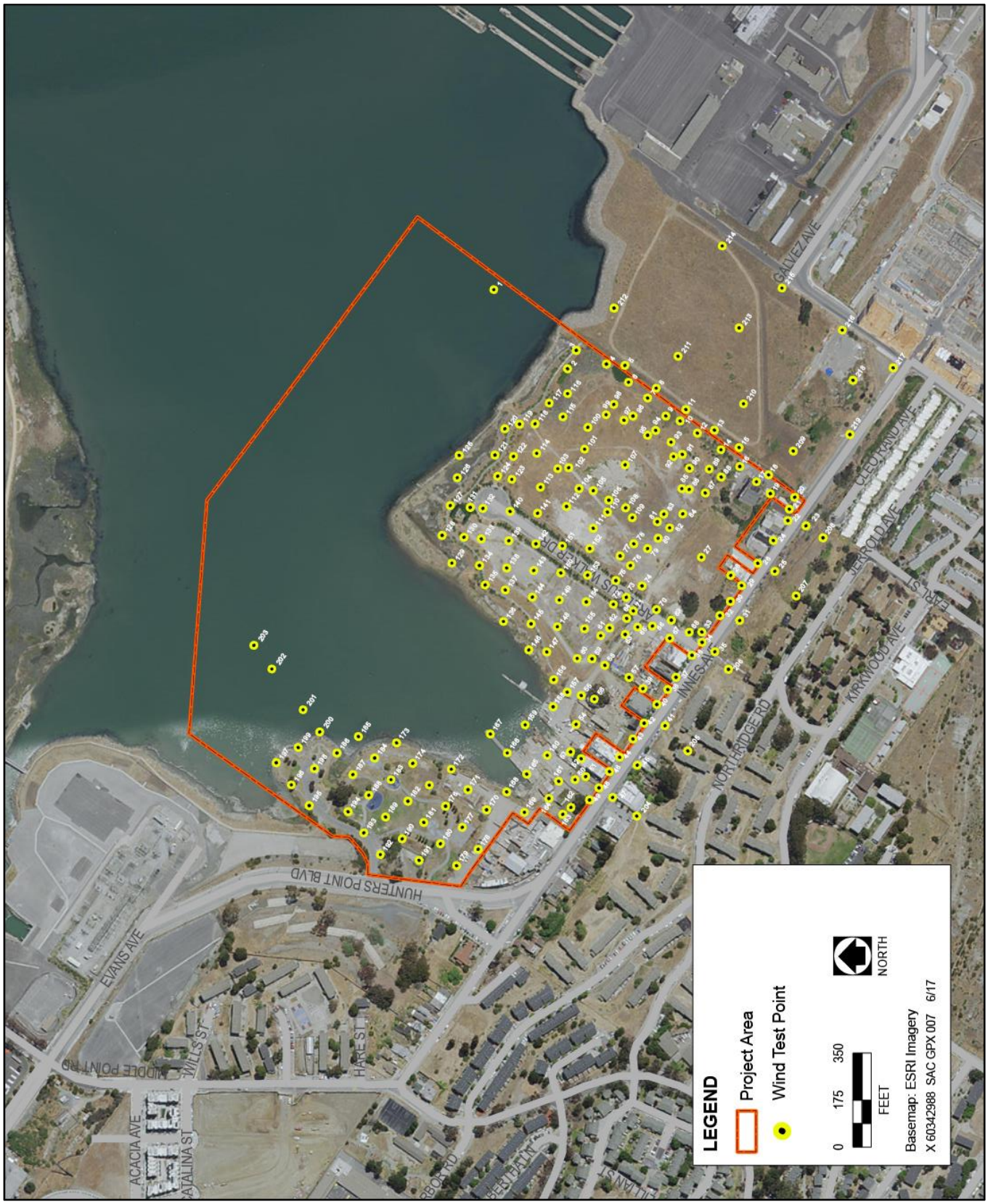
Wind tunnel testing is a well-established means of assessing the wind microclimate experienced by pedestrians. Such testing can simulate a site's wind conditions so that the wind flow can be quantified and classified. Wind is often classified as unsteady or gusty, and this "gustiness" or turbulence depends on the project site. Existing wind conditions are modeled using a series of grid, barrier, and floor roughness elements to create an atmospheric boundary layer that is representative of urban or open-country conditions.

Measurements of existing wind speeds were set up at 219 identified publicly accessible locations on the project site (all four project site properties) and within a 1,500-foot radius of the project site (Figure 3.9-1). These measurements were set up using a series of probes that can measure fluctuating pressure differences that are calibrated against wind speed. Measurements for the existing scenario were set up at a height corresponding to 5 feet, which is the approximate average pedestrian viewing height. Measurements were taken for a full rotation of 16 wind directions in increments of 22.5 degrees (0 degrees represents compass north). The following methodology was used to quantify the existing pedestrian-level wind microclimate of the site:

- Measure building-induced wind speeds at pedestrian level in the wind tunnel.
- Combine the winds with wind frequency statistics derived from the San Francisco International Airport weather station to obtain the expected frequency and magnitude of wind speeds at pedestrian level.
- Compare the results with the Planning Code Section 148 wind-speed criteria to the conditions around the site.

Project Features

Both the proposed project and the variant would involve demolishing some of the existing buildings on the project site and constructing a mixed-use development that would include residential, commercial, institutional/educational, research and development, parking, and open space uses. Most of the buildings for the proposed project or variant would be less than 100 feet tall, and only two buildings would be more than 100 feet tall. Buildings more than 100 feet tall could affect ground-level wind conditions on or near the project site.



Source: San Francisco, 2017

Figure 3.9-1: Test Point Map

Impact Evaluation

Impact WI-1: The proposed project or variant would alter wind in a manner that substantially affects public areas or outdoor recreation facilities. ***(Significant and Unavoidable with Mitigation)***

As stated in Section 3.9.1, "Environmental Setting," the project site can generally be characterized as windy. The existing site and surrounding areas are subject to winds exceeding the City's pedestrian-comfort criterion for more than 10 percent of the time during the year. The project site and project vicinity are also prone to exceedances of the wind-hazard criteria at a number of locations.

This analysis of wind impacts evaluates construction-related and operational impacts of the proposed project and the variant, and uses both the City's pedestrian-comfort and wind-hazard criteria. Note that the discussion of effects under the pedestrian-comfort criterion is provided here solely for informational purposes, and, thus, no associated impact conclusions are provided. Because the significance threshold used to assess and identify significant wind impacts is the wind-hazard criterion, associated impact conclusions are provided.

Construction: Hazardous Wind Conditions During Partial Build-Out

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Construction under either the proposed project or variant at all four project site properties would occur in phases over multiple years, but for purposes of this EIR, the analysis assumes the project will reach build out by 2022 in order to take a more conservative approach to potential impacts. Wind effects during interim conditions could differ from conditions at full build-out. The wind tunnel report (San Francisco, 2017) does not provide quantitative results for wind conditions during interim stages of development, and as a practical matter, it cannot provide such information given the number of possible permutations of development.

The wind study assessed buildings up to 155 feet tall for both the proposed project and the variant.[2] Once buildings are present on the project site and the site is fully built-out, building design may provide effective wind shelter. (See discussion below under **Operation**, and **Mitigation Measure M-WI-1c**.) The long-term wind effect would depend on the final architectural designs of those buildings. However, even if building design is effective at reducing wind impacts during full build-out, the project or variant could result in additional wind effects during the interim partial build-out period. Depending on the circumstances of construction, temporary effects could continue until full build-out. Because wind hazards could result from a very large number of possible combinations of different building designs, and permutations of construction sequences during construction, wind conditions during construction cannot be predicted. Therefore, a qualitative discussion of wind effects during construction is provided below.

The wind tunnel report (San Francisco, 2017) provides information on wind conditions at sidewalks, parks, and open spaces on the project site and in the surrounding area at full build-out. A massing model was created to simulate future proposed buildings on the site and in the surrounding area to determine whether some buildings would provide shelter from prevailing winds or change the downwind effects created by tall buildings next to shorter ones. Before full build-out, stronger pedestrian-level winds are likely to occur in open spaces and at

[2] BMT modeled towers 150–155 feet tall in the wind study. BMT subsequently determined in an addendum to the wind study that towers up to 160 feet tall would marginally increase the likelihood of downdrafts, which would have a marginally greater but unnoticeable impact on the wind microclimate under the proposed project or variant. The addendum to the wind study is included in EIR Appendix H.

individual building sites. Thus, exceedances of the wind-hazard criterion could occur at locations not identified in the tested scenarios.

Based on the wind tunnel study and knowledge of prevailing wind directions, developing buildings on the project site generally from west to east would provide the best protection from potential wind hazards. The amount of sheltering provided by then-existing buildings on adjacent parcels or areas located upwind (to the west-southwest, west, west-northwest, and northwest) of a subsequent development site should be considered for its potential to change wind conditions in the area. Depending on circumstances, such as the height and proximity of surrounding buildings, buildings less than 100 feet tall generally would be less likely to create hazardous wind conditions. Most of the buildings for the proposed project or variant would be less than 100 feet tall. Two buildings are proposed to be more than 100 feet tall.

In summary, the potential exists for wind-hazard impacts to occur during partial build-out that may not occur at full build-out because of insufficient protection from the effects of strong winds that might otherwise be provided when all buildings are constructed. This scenario likely would occur only at locations adjacent to buildings at least 100 feet tall. Most of the buildings for the proposed project or variant would be less than 100 feet tall. During partial build-out, wind hazards could occur at public locations not identified in the wind tunnel study, and wind effects at identified wind-hazard locations could be greater in severity or duration than shown by the study. This impact during the phased buildout period could be significant. Such wind hazards would likely exist until buildings on adjacent parcels are completed and able to provide shelter from the wind. Implementing Mitigation Measures M-WI-1a and M-WI-1b would reduce the severity and duration of wind impacts adjacent to buildings at least 100 feet tall during the construction period under partial build-out conditions.

Mitigation Measure M-WI-1a: Wind Impact Analysis and Mitigation for Buildings 100 Feet or Greater in Height During Partial Buildout

With the goal of preventing a net increase in hazardous wind hours beyond those identified by prior wind tunnel testing conducted for this EIR during project construction, prior to obtaining a building permit for any project or variant building within the project site proposed to be at least 100 feet in height, the project sponsors shall undertake or cause their construction contractor(s) to undertake a wind impact analysis for such proposed building.

a. The wind impact analysis shall be conducted by a qualified wind consultant approved by the Planning Department's Environmental Review Officer (ERO). The wind consultant shall review the proposed building design taking into account the building design and feasible mitigation required by Mitigation M-WI-1c. The wind consultant shall provide a qualitative analysis of whether the building could result in a net increase in hazardous wind hours under partial build-out conditions that are beyond those identified for full build-out conditions by prior wind tunnel testing conducted for this EIR. The analysis shall compare the exposure, massing, and orientation of the proposed building to the same building in the representative massing models for the proposed project or variant. The comparison shall also analyze the potential wind impacts of the proposed building relative to existing conditions, those identified in the discussion of operational wind hazards, and to the City's wind hazard criterion. The existing conditions in this analysis shall be considered to include any existing buildings at the site, the as-built designs of all previously completed structures, and the then-current

designs of approved but as-yet-unbuilt structures that would be completed by the time of occupancy of the subject building.

b. If the qualified wind consultant determines that the building could result in a net increase in hazardous wind hours under partial build-out conditions that are beyond those identified for full build-out conditions by prior wind tunnel testing conducted for this EIR, but in the consultant's professional judgment, temporary measures would reduce such impact, the consultant shall notify the ERO and the building applicant. The consultant's professional judgment may be informed by the use of "desktop" analytical tools, such as computer tools relying on results of prior wind tunnel testing for the proposed project and other projects (i.e., "desktop" analysis does not include new wind tunnel testing). The analysis shall include consideration of wind location, duration, and speed of wind. The building applicant shall propose temporary measures to reduce wind hazards under partial build-out conditions to the extent feasible. Such temporary measures include but are not limited to the following measures:

- *At building corners, introduce hard landscaping such as localized porous/solid screens, soft landscaping such as localized trees, or hedge plantings.*
- *Install semi-permanent windscreens or temporary landscaping features (such as shrubs in large planters) that provide some wind sheltering and also direct pedestrian and bicycle traffic around hazardous areas.*
- *Introduce solid/porous screens and soft landscaping to create localized pockets suitable for use as recreational space or for lengthy use as outdoor seating.*
- *Introduce temporary canopies and cabanas at outdoor seating areas.*

The wind consultant shall then reevaluate the building design(s) taking into account the temporary measures. If the wind consultant demonstrates to the satisfaction of the ERO that the modified design, taking into account any temporary measures, would not create a net increase in hazardous wind hours under partial build-out conditions that are beyond those identified for full build-out conditions by prior wind tunnel testing conducted for this EIR and in subsequent wind analysis required by this mitigation measure, no further review would be required.

c. If the qualified wind consultant is unable to demonstrate that temporary measures would reduce wind hazard impacts under partial build-out conditions to less-than-significant levels, then wind tunnel testing or an equivalent method of quantitative evaluation shall be required. The proposed building shall be wind tunnel tested using a model that represents the proposed building in the context of existing partial build-out conditions. The testing shall include test points deemed appropriate by the consultant and agreed upon by the Planning Department to determine the wind performance of the building, such as building entrances and sidewalks. If the wind tunnel testing determines that the building's design, including temporary measures, would increase the hours of wind hazard or the extent of area subject to hazardous winds under partial build-out conditions beyond those identified for full build-out conditions by prior wind testing conducted for this EIR, the wind consultant shall notify the Planning Department and the building applicant. The building applicant shall propose feasible mitigation strategies including any of the above measures to reduce wind hazards. If the wind consultant demonstrates to the satisfaction of the ERO that the modified design would not create a net

increase in hazardous wind hours or locations under partial build-out conditions beyond those identified for full build-out conditions by prior wind tunnel testing conducted for this EIR, no further review would be required.

d. If the qualified wind consultant is unable to demonstrate that wind mitigation measures would reduce wind hazard impacts to less-than-significant levels after wind tunnel testing or an equivalent method of quantitative evaluation, the building applicant shall provide a Wind Safety Plan to the Planning Department and the ERO. The Wind Safety Plan shall include recommendations for site safety precautions for times when very strong winds occur on-site or may be expected, such as when high-wind watches or warnings are announced by the National Weather Service. Site safety precautions can include, but not be limited to any of the following:

- *warning pedestrians and bicyclists of hazardous winds by placing weighted warning signs; and*
- *identifying alternative pedestrian and bicycle routes that avoid areas likely to be exposed to hazardous winds.*

The project sponsors shall ensure by conditions of approval for any construction activity, and the Planning Department shall ensure by conditions of approval for building permits and site permits, that the project sponsors and the subsequent building developer(s) cooperate to implement and maintain all measures and precautions identified by the wind consultant.

Mitigation Measure M-WI-1b: Temporary Wind Reduction Measures during Construction

For the active construction areas, the wind consultant may identify those construction sites that would be especially exposed to strong winds. The consultant may recommend construction site safety precautions for times when very strong winds occur on-site or may be expected, such as when high-wind watches or warnings are announced by the National Weather Service. The objective of these precautions shall be to minimize risks and prevent injuries to workers and the public from stacked materials, such as shingles and sheets of plywood, that can be picked up and carried by strong winds, and from temporary signage, siding or roofing, or light structures that could be detached and carried by the wind.

As part of construction site safety planning, the project sponsors shall require, as a condition of contracts, that contractors consider all potential wind-related risks to the public from their construction activities, and shall develop a safety plan to address and control all such risks related to their work. The safety plan could include but not be limited to measures such as:

- *warning pedestrians and bicyclists of hazardous winds by placing weighted warning signs;*
- *identifying alternative pedestrian and bicycle routes that avoid areas likely to be exposed to hazardous winds; and*
- *installing semi-permanent windscreens or temporary landscaping features (such as shrubs in large planters) that provide some wind sheltering and also direct pedestrian and bicycle traffic around hazardous areas.*

Implementation of Mitigation Measures M-WI-1a and M-WI-1b would reduce the severity of hazardous wind impacts during construction. However, because interim wind effects occurring during the phased buildout period

could differ from those tested in the wind tunnel, it is unknown whether Mitigation Measure M-WI-1a or Mitigation Measure M-WI-1b would reduce impacts to a less-than-significant level. As a result, the impact of the proposed project or variant related to interim hazardous wind conditions during construction would be *significant and unavoidable* with mitigation.

Operation

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Proposed Project

Pedestrian-Comfort Criterion

Under existing conditions, the average wind speed at the project site is 19.6 mph. Conditions generally exceed the City's 11 mph pedestrian-comfort criterion more than 10 percent of the time. Almost all points on the project site and in the project vicinity that were tested—218 of the 219 points—currently exceed the comfort criterion (San Francisco, 2017).

Implementing the proposed project at all four project site properties would reduce average wind speeds in the project area from the existing 19.6 mph to 17.2 mph and would eliminate 12 exceedances of the pedestrian-comfort criterion (a reduction from 218 exceedances to 206). The eliminated exceedances are located mainly on the east side of the 700 Innes site. A total of 12 exceedance points, located mainly on the western sidewalk of Earl Street, would be more suitable for pedestrians throughout the year than under existing conditions. The proposed project would create zero new exceedances of the pedestrian-comfort criterion.

The greatest increase in average wind speed relative to existing conditions would occur at the southwest corner of the 700 Innes property under the 14-story, 160-foot-tall building (test point #33),[3] where average wind speed would increase by 19 mph, from the existing 13 mph to 32 mph. This wind-speed increase would be caused mainly by wind downdraft from the 14-story building and subsequent accelerations of prevailing westerly winds at the building's corner.

Wind-Hazard Criterion

The wind-hazard testing results show that most test locations fail to comply with the City's hazard criterion under existing conditions. Almost two-thirds (137) of the 219 test locations currently fail to comply with the hazard criterion, while the remaining 82 locations comply. Wind speeds exceed the hazard criterion for a total of 888 hours per year (San Francisco, 2017). In summary, the existing relatively vacant project site is expectedly windy, with both the pedestrian-comfort and wind-hazard criteria exceeded at several locations before the introduction of any new structures or architectural elements.

Implementing the proposed project at all four project site properties would reduce exceedances of the wind-hazard criterion from the existing 137 locations to 83. The proposed project would also reduce the total duration of hazardous winds from the current 888 hours per year to 767. Thus, 54 fewer exceedances of the wind-hazard

[3] BMT modeled towers up to 155 feet in height. BUILD is considering towers up to 160 feet tall. BMT has determined that only a marginal increase in the likelihood of downdrafts may result from this height difference, which would have a marginally greater but unnoticeable impact on the wind microclimate from the proposed project or variant.

criterion would occur and hazardous winds would blow for 121 fewer hours than under existing conditions. A total of 54 additional locations in the project vicinity, mainly on the India Basin Open Space property and southeast of the Big Green, would be suitable for pedestrians and cyclists throughout the year.

Although there would be an overall improvement in the number of hazard exceedances and the duration of hazardous winds, localized increases in wind speed and duration of hazardous winds would occur. Table 3.9-1 shows the wind hazard analysis results for the proposed project. In Table 3.9-1, the test locations which exceed hazard criterion under existing conditions are indicated with the letter, "e," the test locations which exceed hazard criterion under the proposed project or the variant and did not exceed the hazard criterion under existing conditions are indicated with the letter, "p," and test locations in which hazard criterion exceedances were eliminated due to the proposed project or the variant are indicated with "-." The red numbers in Table 3.9-1 represent an increase in wind hazard exceedances relative to existing conditions, while numbers in green represent fewer wind hazard exceedances relative to existing conditions.

Table 3.9-1: Summary of Wind Hazard Results—Proposed Project

Location Number	Hazard Criterion (mph)	Existing Conditions			Proposed Project				Variant				
		Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Hours Change Relative to Project	Exceeds
1	36	30	0		26	0	0		26	0	0	0	
2	36	45	13	e	39	4	-9	e	40	4	-9	0	e
3	36	42	4	e	41	5	1	e	41	5	1	0	e
4	36	40	2	e	41	3	1	e	42	3	1	0	e
5	36	41	3	e	41	2	-1	e	40	2	-1	0	e
7	36	38	1	e	34	0	-1	-	35	0	-1	0	-
8	36	40	2	e	36	1	-1	e	36	1	-1	0	e
9	36	42	9	e	42	4	-5	e	42	4	-5	0	e
10	36	43	15	e	36	0	-15	-	36	0	-15	0	-
11	36	37	1	e	35	0	-1	-	34	0	-1	0	-
12	36	44	10	e	38	1	-9	e	39	1	-9	0	e
13	36	42	4	e	34	0	-4	-	33	0	-4	0	-
14	36	44	6	e	37	1	-5	e	37	1	-5	0	e
15	36	39	2	e	34	0	-2	-	34	0	-2	0	-
16	36	39	2	e	37	1	-1	e	38	1	-1	0	e
17	36	26	0		27	0	0		28	0	0	0	
18	36	28	0		25	0	0		25	0	0	0	
19	36	33	0		31	0	0		33	0	0	0	
20	36	35	0		29	0	0		29	0	0	0	
21	36	37	1	e	36	1	0	e	35	0	-1	-1	-
22	36	41	3	e	32	0	-3	-	31	0	-3	0	-
23	36	33	0		36	1	1	p	36	0	0	-1	
24	36	25	0		25	0	0		27	0	0	0	
25	36	31	0		33	0	0		34	0	0	0	
26	36	33	0		25	0	0		26	0	0	0	
27	36	34	0		34	0	0		28	0	0	0	
28	36	29	0		31	0	0		27	0	0	0	
29	36	30	0		33	0	0		32	0	0	0	
30	36	28	0		34	0	0		34	0	0	0	
31	36	34	0		35	0	0		35	0	0	0	
32	36	27	0		34	0	0		34	0	0	0	
33	36	27	0		52	252	252	p	52	261	261	9	p

Location Number	Hazard Criterion (mph)	Existing Conditions			Proposed Project				Variant				
		Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Hours Change Relative to Project	Exceeds
34	36	30	0		39	2	2	p	39	1	1	-1	p
35	36	29	0		38	1	1	p	39	1	1	0	p
36	36	33	0		29	0	0		30	0	0	0	
37	36	33	0		30	0	0		30	0	0	0	
38	36	34	0		28	0	0		28	0	0	0	
39	36	35	0		22	0	0		22	0	0	0	
40	36	34	0		28	0	0		28	0	0	0	
41	36	35	0		38	1	1	p	38	1	1	0	p
42	36	32	0		24	0	0		26	0	0	0	
43	36	27	0		23	0	0		25	0	0	0	
44	36	30	0		29	0	0		30	0	0	0	
45	36	27	0		27	0	0		27	0	0	0	
46	36	29	0		32	0	0		33	0	0	0	
47	36	35	0		35	0	0		35	0	0	0	
48	36	29	0		38	1	1	p	37	1	1	0	p
49	36	27	0		27	0	0		27	0	0	0	
50	36	25	0		26	0	0		26	0	0	0	
51	36	25	0		23	0	0		23	0	0	0	
52	36	30	0		28	0	0		27	0	0	0	
53	36	24	0		30	0	0		30	0	0	0	
54	36	33	0		24	0	0		25	0	0	0	
55	36	32	0		36	0	0		38	2	2	2	p
56	36	31	0		41	3	3	p	39	2	2	-1	p
57	36	37	1	e	59	23	22	e	57	20	19	-3	e
58	36	33	0		46	79	79	p	42	13	13	-66	p
59	36	37	1	e	42	3	2	e	40	2	1	-1	e
60	36	32	0		41	8	8	p	41	8	8	0	p
61	36	40	6	e	47	6	0	e	44	4	-2	-2	e
62	36	37	1	e	32	0	-1	-	33	0	-1	0	-
63	36	38	1	e	39	1	0	e	39	2	1	1	e
64	36	38	2	e	28	0	-2	-	29	0	-2	0	-
65	36	35	0		32	0	0		35	0	0	0	
66	36	34	0		43	16	16	p	44	19	19	3	p
67	36	39	2	e	55	17	15	e	54	15	13	-2	e
68	36	31	0		46	7	7	p	48	10	10	3	p

Location Number	Hazard Criterion (mph)	Existing Conditions			Proposed Project				Variant				
		Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Hours Change Relative to Project	Exceeds
69	36	32	0		36	1	1	p	37	1	1	0	p
70	36	30	0		40	5	5	p	41	4	4	-1	p
71	36	40	2	e	34	0	-2	-	34	0	-2	0	-
72	36	37	1	e	14	0	-1	-	14	0	-1	0	-
73	36	43	5	e	27	0	-5	-	26	0	-5	0	-
74	36	36	1	e	33	0	-1	-	31	0	-1	0	-
75	36	44	8	e	27	0	-8	-	26	0	-8	0	-
76	36	40	3	e	31	0	-3	-	31	0	-3	0	-
77	36	42	4	e	39	2	-2	e	39	2	-2	0	e
78	36	39	2	e	34	0	-2	-	34	0	-2	0	-
79	36	39	2	e	38	1	-1	e	40	2	0	1	e
80	36	42	4	e	36	0	-4	-	36	0	-4	0	-
81	36	36	0		34	0	0		35	0	0	0	
82	36	36	0		31	0	0		30	0	0	0	
83	36	32	0		33	0	0		33	0	0	0	
84	36	41	3	e	26	0	-3	-	28	0	-3	0	-
85	36	33	0		27	0	0		29	0	0	0	
86	36	40	2	e	36	0	-2	-	37	1	-1	1	e
87	36	38	2	e	31	0	-2	-	31	0	-2	0	-
88	36	40	3	e	39	2	-1	e	39	2	-1	0	e
89	36	48	18	e	51	15	-3	e	50	13	-5	-2	e
90	36	42	7	e	31	0	-7	-	31	0	-7	0	-
91	36	35	0		29	0	0		31	0	0	0	
92	36	32	0		23	0	0		25	0	0	0	
93	36	35	0		26	0	0		28	0	0	0	
94	36	40	3	e	29	0	-3	-	31	0	-3	0	-
95	36	37	1	e	30	0	-1	-	30	0	-1	0	-
96	36	35	0		27	0	0		29	0	0	0	
97	36	40	6	e	30	0	-6	-	31	0	-6	0	-
98	36	40	5	e	28	0	-5	-	28	0	-5	0	-
99	36	39	4	e	26	0	-4	-	27	0	-4	0	-
100	36	36	1	e	35	0	-1	-	37	1	0	1	e
101	36	38	1	e	30	0	-1	-	30	0	-1	0	-
102	36	49	14	e	30	0	-14	-	30	0	-14	0	-
103	36	45	10	e	31	0	-10	-	32	0	-10	0	-

Location Number	Hazard Criterion (mph)	Existing Conditions			Proposed Project				Variant				
		Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Hours Change Relative to Project	Exceeds
104	36	50	29	e	31	0	-29	-	32	0	-29	0	-
105	36	33	0		36	0	0		36	1	1	1	p
106	36	37	1	e	33	0	-1	-	37	1	0	1	e
107	36	41	4	e	22	0	-4	-	22	0	-4	0	-
108	36	44	5	e	31	0	-5	-	31	0	-5	0	-
109	36	51	20	e	36	1	-19	e	35	0	-20	-1	-
110	36	34	0		34	0	0		40	2	2	2	p
111	36	34	0		31	0	0		31	0	0	0	
112	36	41	11	e	33	0	-11	-	34	0	-11	0	-
113	36	42	7	e	36	1	-6	e	37	1	-6	0	e
114	36	46	13	e	36	1	-12	e	36	1	-12	0	e
115	36	46	11	e	31	0	-11	-	31	0	-11	0	-
116	36	50	39	e	35	0	-39	-	35	0	-39	0	-
117	36	48	23	e	37	1	-22	e	37	1	-22	0	e
118	36	44	9	e	24	0	-9	-	24	0	-9	0	-
119	36	40	3	e	35	0	-3	-	35	0	-3	0	-
120	36	39	3	e	36	1	-2	e	37	1	-2	0	e
121	36	41	6	e	38	3	-3	e	39	3	-3	0	e
122	36	47	15	e	39	4	-11	e	39	4	-11	0	e
123	36	42	7	e	38	3	-4	e	38	3	-4	0	e
124	36	45	15	e	41	9	-6	e	41	8	-7	-1	e
125	36	38	1	e	34	0	-1	-	35	0	-1	0	-
126	36	40	3	e	35	0	-3	-	35	0	-3	0	-
127	36	42	4	e	35	0	-4	-	35	0	-4	0	-
128	36	36	1	e	32	0	-1	-	32	0	-1	0	-
129	36	38	1	e	32	0	-1	-	33	0	-1	0	-
130	36	43	8	e	39	3	-5	e	39	3	-5	0	e
131	36	44	7	e	37	1	-6	e	37	1	-6	0	e
132	36	43	7	e	38	2	-5	e	38	2	-5	0	e
133	36	44	8	e	36	1	-7	e	36	1	-7	0	e
134	36	43	5	e	36	1	-4	e	36	1	-4	0	e
135	36	43	9	e	40	6	-3	e	40	5	-4	-1	e
136	36	33	0		28	0	0		28	0	0	0	
137	36	41	7	e	39	3	-4	e	39	3	-4	0	e
138	36	47	11	e	37	1	-10	e	37	1	-10	0	e

Location Number	Hazard Criterion (mph)	Existing Conditions			Proposed Project				Variant				
		Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Hours Change Relative to Project	Exceeds
139	36	41	3	e	35	0	-3	-	35	0	-3	0	-
140	36	40	3	e	35	0	-3	-	35	0	-3	0	-
141	36	42	6	e	32	0	-6	-	32	0	-6	0	-
142	36	41	3	e	32	0	-3	-	32	0	-3	0	-
143	36	43	9	e	37	1	-8	e	37	1	-8	0	e
144	36	40	4	e	38	3	-1	e	38	2	-2	-1	e
145	36	44	5	e	36	0	-5	-	35	0	-5	0	-
146	36	33	0		32	0	0		32	0	0	0	
147	36	32	0		30	0	0		31	0	0	0	
148	36	39	2	e	46	63	61	e	46	55	53	-8	e
149	36	43	4	e	36	0	-4	-	35	0	-4	0	-
150	36	43	7	e	32	0	-7	-	32	0	-7	0	-
151	36	42	4	e	29	0	-4	-	29	0	-4	0	-
152	36	41	4	e	26	0	-4	-	27	0	-4	0	-
153	36	40	5	e	28	0	-5	-	28	0	-5	0	-
154	36	47	14	e	30	0	-14	-	29	0	-14	0	-
155	36	42	5	e	27	0	-5	-	27	0	-5	0	-
156	36	33	0		29	0	0		28	0	0	0	
157	36	31	0		26	0	0		26	0	0	0	
158	36	32	0		27	0	0		27	0	0	0	
159	36	37	1	e	31	0	-1	-	30	0	-1	0	-
160	36	33	0		30	0	0		29	0	0	0	
161	36	24	0		26	0	0		26	0	0	0	
162	36	28	0		33	0	0		34	0	0	0	
163	36	25	0		28	0	0		29	0	0	0	
164	36	25	0		24	0	0		24	0	0	0	
165	36	30	0		27	0	0		27	0	0	0	
166	36	33	0		32	0	0		32	0	0	0	
167	36	32	0		31	0	0		31	0	0	0	
168	36	31	0		29	0	0		28	0	0	0	
169	36	35	0		31	0	0		30	0	0	0	
170	36	36	0		32	0	0		32	0	0	0	
171	36	36	1	e	33	0	-1	-	32	0	-1	0	-
172	36	39	2	e	35	0	-2	-	35	0	-2	0	-
173	36	33	0		32	0	0		31	0	0	0	

Location Number	Hazard Criterion (mph)	Existing Conditions			Proposed Project				Variant				
		Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Hours Change Relative to Project	Exceeds
174	36	40	2	e	36	1	-1	e	36	1	-1	0	e
175	36	38	1	e	35	0	-1	-	35	0	-1	0	-
176	36	44	9	e	40	3	-6	e	40	3	-6	0	e
177	36	44	25	e	41	12	-13	e	41	14	-11	2	e
178	36	44	8	e	40	2	-6	e	40	2	-6	0	e
179	36	39	3	e	37	1	-2	e	38	1	-2	0	e
180	36	48	20	e	43	10	-10	e	43	11	-9	1	e
181	36	51	81	e	47	56	-25	e	47	56	-25	0	e
182	36	45	24	e	43	16	-8	e	42	15	-9	-1	e
183	36	45	15	e	42	10	-5	e	41	8	-7	-2	e
184	36	43	5	e	39	2	-3	e	38	1	-4	-1	e
185	36	34	0		33	0	0		33	0	0	0	
186	36	37	1	e	35	0	-1	-	35	0	-1	0	-
187	36	41	3	e	38	1	-2	e	37	1	-2	0	e
188	36	40	3	e	38	1	-2	e	37	1	-2	0	e
189	36	44	20	e	44	20	0	e	43	18	-2	-2	e
190	36	41	7	e	41	8	1	e	41	8	1	0	e
191	36	30	0		29	0	0		29	0	0	0	
192	36	49	17	e	47	12	-5	e	47	12	-5	0	e
193	36	38	2	e	37	1	-1	e	37	1	-1	0	e
194	36	41	4	e	39	3	-1	e	40	3	-1	0	e
195	36	37	1	e	36	0	-1	-	36	0	-1	0	-
196	36	39	2	e	37	1	-1	e	37	1	-1	0	e
197	36	38	2	e	38	2	0	e	37	2	0	0	e
198	36	38	1	e	36	1	0	e	36	0	-1	-1	-
199	36	38	1	e	36	1	0	e	36	0	-1	-1	-
200	36	37	1	e	36	1	0	e	36	0	-1	-1	-
201	36	39	2	e	37	1	-1	e	38	1	-1	0	e
202	36	30	0		30	0	0		30	0	0	0	
203	36	35	0		35	0	0		35	0	0	0	
204	36	31	0		31	0	0		32	0	0	0	
205	36	37	1	e	32	0	-1	-	33	0	-1	0	-
206	36	31	0		36	0	0		36	1	1	1	p
207	36	39	2	e	37	1	-1	e	37	1	-1	0	e
208	36	43	5	e	38	3	-2	e	39	3	-2	0	e

Location Number	Hazard Criterion (mph)	Existing Conditions			Proposed Project				Variant				
		Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Hours Change Relative to Project	Exceeds
209	36	38	1	e	31	0	-1	-	31	0	-1	0	-
210	36	38	1	e	34	0	-1	-	34	0	-1	0	-
211	36	40	2	e	40	2	0	e	39	2	0	0	e
212	36	43	7	e	43	5	-2	e	44	6	-1	1	e
213	36	39	1	e	38	1	0	e	38	1	0	0	e
214	36	36	0		36	0	0		37	1	1	1	p
215	36	45	20	e	43	6	-14	e	43	6	-14	0	e
216	36	40	2	e	40	2	0	e	40	2	0	0	e
217	36	42	3	e	40	2	-1	e	40	2	-1	0	e
218	36	38	1	e	35	0	-1	-	35	0	-1	0	-
219	36	38	1	e	35	0	-1	-	36	0	-1	0	-
		Average	**Sum**	**Sum**	**Average**	**Sum**	**Sum**	**Sum**	**Average**	**Sum**	**Sum**	**Sum**	**Sum**
		37.5	888	137	34.2	767	-121	83	34.3	696	-192	-71	85
		Existing, e		137	Existing, e			70	Existing, e				68
					New, due to proposed project variant, p			13	New, due to proposed project variant, p				17
					Eliminated by proposed project variant, -			67	Eliminated by proposed project variant, -				69

Source: San Francisco, 2017

As shown in Table 3.9-1, there would be 20 locations that would experience an increase in hazardous wind exceedances after introduction of the proposed project. The total number of hazard hour increases relative to existing conditions between these 20 test locations would be 480 hours. Furthermore, the following locations would experience a substantial increase in the wind speed and the duration of hazardous winds: 33, 57, 58, 60, 66, 67, 68, and 148. Pedestrians and cyclists would have a difficult time maintaining their balance while passing through these locations and could be at risk of injury. On balance, the increase in wind speed and the duration of hazardous winds at these locations outweighs the overall improvement in wind conditions on the project site.

At test point #33, where the entrance to a proposed building would be located, the wind speed would increase from 27 mph to 52 mph and the duration of hazardous winds would increase by 252 hours.

Implementing the proposed project would introduce an obstruction to wind blowing across the site. Thus, the proposed project would generally have a positive effect on the wind microclimate, reducing the total number of locations exceeding the wind-hazard criterion and the total duration of hazardous winds relative to existing conditions. However, as shown in Table 3.9-1, the wind speed and duration of hazardous winds would increase at several locations. Pedestrians and cyclists would have a difficult time maintaining their balance while passing through these locations and could be at risk of injury.

On balance, the increase in wind speed and duration of hazardous winds at these locations outweighs the overall improvement in wind conditions on the project site. For this reason, the operational wind impact of the proposed project could be significant. An effort would be made to reduce the wind hazards that would occur or to limit the exposure to those hazards by residents and visitors through implementation of Mitigation Measure M-WI-1c, described below.

Mitigation Measure M-WI-1c: Reduce Effects of Ground-Level Hazardous Winds through Ongoing Review

In order to mitigate to the extent feasible new wind hazards created with full build-out under the proposed project or variant identified by prior wind testing, a wind impact analysis by a qualified wind consultant shall be required prior to building permit issuance for any building more than 100 feet tall. The purpose of this supplemental wind impact analysis would be to prevent the total duration of wind hazard exceedances across the project site from exceeding the total duration of wind hazard exceedances under full build-out conditions with the proposed project or variant determined in the Wind Tunnel Report, included in EIR Appendix H, based on the prior wind tunnel testing undertaken by BMT Fluid Mechanics (BMT). Based on the Wind Tunnel Report, the total number of wind hazard exceedance hours shall not exceed 767 hours

- *The proposed building(s) shall be wind tunnel tested using a model that represents the current proposed building(s) defined as the building configurations assumed in the Wind Tunnel Report updated to reflect the design of any constructed buildings at the site and the as-built designs of all approved but yet unbuilt structures .The testing shall include the test points previously studied (see Table 3.9-1). If the wind tunnel testing determines that the building's design would increase the total duration of hazardous winds from the conditions identified in the Wind Tunnel Report, the wind consultant shall notify the Planning Department and the building applicant. The building applicant*

shall then propose feasible mitigation strategies, including any architectural features, to reduce the total duration of wind hazards.

- *At building corners, introduce hard landscaping such as localized porous/solid screens, soft landscaping such as localized trees, or hedge plantings.*
- *Introduce canopies along building façades at the pedestrian level.*
- *Introduce solid/porous screens and soft landscaping to create localized pockets suitable for use as recreational space or for lengthy use as outdoor seating.*
- *Introduce parapets, canopies, and cabanas at outdoor seating areas.*

If the wind consultant demonstrates to the satisfaction of the ERO that the modified design would not increase the total duration of hazardous winds identified in prior wind tunnel testing conducted for this EIR, no further design modifications would be required.

- *If the wind consultant determines that even after the modifications of the design that the building(s) would result in greater than 767 wind hazard exceedance hours , the wind consultant shall work with the project sponsors, architect, and/or landscape architect to identify specific additional feasible measures that may include landscaping features and street furniture that would reduce the total duration of wind hazards to the extent feasible. The ability of the design alterations to reduce the wind hazard to the extent feasible shall be demonstrated by subsequent wind tunnel testing of the modified design and landscaping that compares the modified building design and landscaping to the wind hazard exceedance hours of 767 hours for the proposed project , no further review is required.*

Implementation of Mitigation Measure M-WI-1c would ensure that at full build-out and to the extent feasible, the total duration of hazardous winds on the project site would not exceed 767 hours. Most short-duration wind hazards that would occur in mid-block locations could be effectively eliminated through simple design measures that would change the shape of the building or the height of its street wall, and/or a combination of street furniture and landscaping that would protect pedestrian walkways and building entrances. Finally, although including some topographic variation and adding landscaping and street furniture can reduce wind speeds and eliminate wind hazards in specific locations of the open spaces, there appears to be no practical way to eliminate all wind hazards on project sidewalks and open spaces without changing the basic character of these open spaces. As a result, even with the implementation of Mitigation Measure M-WI-1c, this operational impact of the proposed project would be *significant and unavoidable with mitigation*.

Variant

Pedestrian-Comfort Criterion

Implementing the variant at all four project site properties would reduce average wind speeds in the project area from the existing 19.6 mph to 17.3 mph and would eliminate 14 exceedances of the pedestrian-comfort criterion (a reduction from 218 exceedances to 204). A total of 14 locations, mainly on the western sidewalk of Earl Street, would be more suitable for pedestrians throughout the year than under existing conditions. The variant would create zero new exceedances of the pedestrian-comfort criterion.

Relative to the proposed project, the variant would cause a marginal increase in the average wind speed exceeded 10 percent of the time, from 17.2 mph to 17.3 mph. However, the variant would also cause a marginal reduction

in the number of locations at which the 11 mph pedestrian-comfort criterion would be exceeded, from 205 locations (proposed project) to 204 (variant). Thus, the overall pedestrian-comfort conditions under the variant would be nearly the same as under the proposed project.

Wind-Hazard Criterion

With implementation of the variant, 85 locations would fail to comply with the wind-hazard criterion, a net reduction of 52 exceedance locations compared to existing conditions. In addition, the total duration of hazardous winds would be reduced by 192 hours, from the current 888 hours per year to 696. Thus, an additional 52 locations in the project vicinity, located mainly in the southeast portion of the 700 Innes property, would be suitable for pedestrians and cyclists throughout the year.

Under the variant at all four project site properties, wind speeds would exceed the wind-hazard criterion at a total of 85 locations, compared to 83 locations under the proposed project. The variant would also reduce the total duration of hazardous winds by 71 hours per year compared to the proposed project, from 767 hours per year (proposed project) to 696 (variant).

The number of hazard exceedances and the duration of hazardous winds would improve overall when compared to existing conditions, but localized increases in wind speed and the duration of hazardous winds would occur. Table 3.9-1 shows where the variant would result in a substantial increase in the duration of hazardous winds (longer than 5 hours compared to existing conditions).

As with the proposed project, implementation of the variant would reduce the total number of locations exceeding the wind-hazard criterion and the total duration of hazardous winds when compared to existing conditions. As shown in Table 3.9-1, there would be 25 locations that would experience an increase in hazardous wind exceedances after introduction of the proposed project. The total number of hazard hour increases relative to existing conditions between these 25 test locations would be 419 hours. Furthermore, wind speed and the duration of hazardous winds would increase substantially at several locations. The following locations would experience a substantial increase in the wind speed and the duration of hazardous winds: 33, 57, 58, 60, 66, 67, 68, and 148. Pedestrians and cyclists would have a difficult time maintaining their balance while passing through these locations and could be at risk of injury.

On balance, the substantial increase in wind speed and the duration of hazardous winds at these locations outweighs the overall improvement in wind conditions on the project site. For this reason, the operational wind impact of the variant could be significant. Implementation of Mitigation Measure M-WI-1c, described above, would reduce localized wind impacts during the lifetime of the project but would not reduce the impacts to a less-than-significant level. Therefore, this impact would be *significant and unavoidable with mitigation.*

3.9.4 Cumulative Impacts

Impact C-WI-1: The proposed project or variant would not combine with past, present, or reasonably foreseeable future projects to alter wind in a manner that would substantially affect public areas or outdoor recreation facilities. ***(Less than Significant)***

Because the relevant cumulative projects listed in Table 3-1 are somewhat removed from the project site by distance (more than 1,500 feet away) and topography (the hill on the west side of Innes Avenue across from the

project site), the wind effect of the cumulative projects in combination with the proposed project or variant is not expected to result in a materially different wind effect at public areas in the project vicinity. In general, projects that are separated by less than one-quarter mile (1,340 feet) have the potential to interact with each other to alter ground-level wind conditions on and around their respective sites. The cumulative development projects that are proposing large multi-story buildings are more than 1,500 feet from the project site. In addition, the hill to the west of the project site is a physical barrier that separates the proposed project from cumulative development projects further to the west. This physical barrier prevents the cumulative development projects to the west from interacting with the proposed project to alter ground-level wind conditions on and around the project site. For this reason, a wind tunnel test including the other cumulative projects listed in Table 3-1 was not conducted.

The changes to the wind environment under cumulative conditions would be the same as the changes occurring under the proposed project or variant. Although the proposed project or variant would result in significant and unavoidable project-level wind impacts, neither would combine with past, present, or reasonably foreseeable future projects to create a cumulative wind impact. For these reasons, this cumulative impact would be *less than significant.* No mitigation measures are necessary.

3.9.5 References

San Francisco, City and County of (San Francisco). 1996. *San Francisco General Plan.* Recreation and Open Space Element. San Francisco, CA.

———. 2017. *India Basin Mixed-Use Project Wind Microclimate Study.* Case No. 2014-002541ENV. Prepared by BMT Fluid Mechanics.

3.10 SHADOW

This section describes the existing environmental and regulatory setting related to shadow and addresses the potential impacts of the proposed project and variant. The discussion of shadow impacts in this section is supported by a shadow report prepared by BMT Fluid Mechanics (BMT), included in this EIR as Appendix I.[1] Comments regarding the differences in shadow impacts between the proposed project and the variant were received during the public scoping period in response to the Notice of Preparation. These comments are addressed in this section.

3.10.1 Environmental Setting

Shadow Conditions Basics

In an urban environment, shadow is a function of the angle of the sun and the orientation, height, and massing of buildings and other elements of the built environment. The angle of the sun varies based on the time of day (reflecting the rotation of the earth) and the change in seasons (reflecting the orbit of the earth around the sun). The longest shadows are cast during the winter, when the sun reaches its lowest point in the sky, and the shortest shadows are cast during the summer, when the sun reaches its highest point in the sky.

In the Northern Hemisphere, the longest day and the shortest night occur on the summer solstice (typically around June 21), and the shortest day and longest night occur on the winter solstice (typically around December 21). The vernal and autumnal (i.e., spring and fall) equinoxes, on which the day and night are of equal length, occur around March 20 and September 23, respectively, and represent the midway points between the solstices. Thus, measuring shadow lengths during the summer and winter solstices captures the extremes of shadow patterns that occur throughout the year.

Shadow conditions are described with reference to the Theoretical Available Annual Sunlight (TAAS), the amount of sunlight that would be available in a park or open space in the course of a year if there were no shadows from structures, trees, or other objects. TAAS is calculated in square foot–hours (sfh), the expression of shadow, based on 15-minute sample times over the course of an hour, by multiplying the area of the park/open space (in square feet [sq. ft.]) by 3,721.4, the maximum number of hours of sunlight available each year in San Francisco. Shadows cast by the elements of the proposed project or variant are measured by the annual amount of shadow, expressed in sfh as a percentage of TAAS.

Shadow Conditions on the Project Site

The project site has two existing open spaces, India Basin Shoreline Park and India Basin Open Space, that could be affected by shadows cast by buildings and structures associated with the project site. Both open spaces are under the jurisdiction of the Recreation and Park Commission and subject to the provisions of Section 295 of the San Francisco Planning Code (Planning Code).

No other existing open spaces in the project vicinity are within the reach of shadows cast by buildings and structures on the project site.

[1] An addendum to the shadow report that analyzes the 5- to 10-foot increase in maximum building heights between the modeled scenario and the proposed project and variant is also included in Appendix I.

India Basin Shoreline Park Property

India Basin Shoreline Park is an existing RPD park located between Hunters Point Boulevard and Pacific Gas and Electric Company's vacant parcels to the north (off-site) and the 900 Innes property to the south (on-site). The park's publicly accessible recreational and open space facilities consist of two play structures, a basketball court, a portion of the Blue Greenway/San Francisco Bay Trail (Bay Trail), artwork by local artists and students, barbeque grills, seating areas, a water fountain, educational signage, and landscaping, including trees.

No shadows are currently cast on India Basin Shoreline Park, because no buildings are located adjacent to this property.

900 Innes Property

The 900 Innes property consists of seven parcels totaling 2.4 acres, 0.6 acre of which is submerged, that are located between the India Basin Shoreline Park and India Basin Open Space properties (Figure 2-2). This property is a former maritime industrial site that contains five structures between 10 and 25 feet tall, totaling approximately 7,760 gross square feet (gsf). Some shadows from buildings on this property are cast on the 900 Innes property; however, these shadows do not reach any nearby publicly accessible parks or open spaces.

India Basin Open Space Property

The India Basin Open Space property contains a publicly accessible natural area located along the India Basin waterfront on San Francisco Bay (Bay), north of Hudson Avenue. The main entry point to this property is at the end of Arelious Walker Drive, off Innes Avenue. India Basin Open Space is an existing 6.2-acre RPD open space consisting of benches, a walking path, upland habitat, tidal salt marsh, mudflats, sand dunes, and native vegetation that borders the Bay.

The area around the India Basin Open Space property that was evaluated has a total area of 287,334 sq. ft.[2] that currently has 363,855 sfh of shade annually. The TAAS at the India Basin Open Space is 1,069,284,748 sfh, meaning that this property is shaded 0.034 percent of the year.

700 Innes Property

The 700 Innes property consists of 30 parcels totaling 17.12 acres (Figure 2-2). The property is generally undeveloped and open, except for six buildings and structures covering only a small portion of the site. The few structures on this property range from one to four stories and are between 10 and 40 feet tall. Shadows from buildings on this property do not reach any nearby publicly accessible parks or open spaces.

3.10.2 Regulatory Framework

Federal

No federal plans, policies, regulations, or laws related to shadow are applicable to the proposed project or variant.

[2] The shadow report (Appendix I) analyzes a larger area for the India Basin Open Space property to be more conservative and represent the maximum development potential for this property.

State

No State plans, policies, regulations, or laws related to shadow are applicable to the proposed project or variant.

Local

San Francisco General Plan

The *San Francisco General Plan* contains objectives and policies that are related to preserving sunlight on open spaces and other public areas. These objectives and policies are found in the Recreation and Open Space Element and the Urban Design Element.

Recreation and Open Space Element

The Recreation and Open Space Element (Objective 1, Policy 1.9) states that solar access to public open space should be protected. In San Francisco, the presence of the sun's warming rays is essential to enjoying open space. This is because climatic factors, including ambient temperature, humidity, and wind, usually combine to create a comfortable climate only when direct sunlight is present. Therefore, the shadows created by new development nearby can critically diminish the utility of the open space.

Urban Design Element

The Urban Design Element (Objective 3, Policy 3.4) states that buildings located to the south, east, and west of parks and plazas should be limited in height or effectively oriented so as not to prevent the penetration of sunlight to such parks and plazas. Large buildings and developments should, where feasible, provide ground-level open space on their sites, well situated for public access and for sunlight penetration.

Accountable Planning Initiative

In November 1986, the voters of San Francisco approved Proposition M, the Accountable Planning Initiative, which added Section 101.1 to the Planning Code, establishing eight priority policies. The eighth policy addresses recreational facilities:

> (8) that our parks and open space and their access to sunlight … be protected from development.

San Francisco Planning Code Section 295

San Francisco adopted Section 295 of the Planning Code, "Height Restrictions on Structures Shadowing Property under the Jurisdiction of the Recreation and Park Commission," in response to Proposition K, the Sunlight Ordinance (approved by voters in November 1984). Section 295 prohibits the approval of "any structure that would cast any shade or shadow upon any property under the jurisdiction of, or designated for acquisition by, the Recreation and Park Commission" unless the Planning Commission, upon the recommendation of RPD's general manager and after review and comment by the Recreation and Park Commission, has found that the shadows cast by a proposed project would not have an adverse impact on the use of the property. Section 295 does not apply to structures that do not exceed 40 feet in height. The period analyzed is from the first hour after sunrise until the last hour before sunset.

On February 7, 1989, pursuant to Proposition K, the Planning Commission and the Recreation and Park Commission adopted a joint resolution establishing criteria for determination of significant shadows on 14 downtown parks, as described in a February 3, 1989 memorandum regarding Proposition K (San Francisco, 1989). These criteria establish an "absolute cumulative limit" (ACL) for new shadow allowed in these parks, as well as qualitative criteria for allocating the ACL among individual development projects. India Basin Shoreline Park and India Basin Open Space are not among the 14 downtown parks for which ACLs were established.

3.10.3 Impacts and Mitigation Measures

Significance Thresholds

The following significance threshold is from Appendix B of the San Francisco Planning Department's (Planning Department's) Environmental Review Guidelines and is used to determine the level of impacts related to shadow. The proposed project or variant would result in a significant impact if it would:

- create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas.

The thresholds for determining the significance of shadow impacts in San Francisco pursuant to CEQA and Section 295 of the Planning Code are different. Under Planning Code Section 295 and the joint Planning Commission/Recreation and Park Commission criteria, any shadow above the ACL would be "significant" in the way that the term is used in Section 295. In contrast, the CEQA significance threshold for environmental review addresses a broader array of shadow-related considerations that may include not only quantitative criteria, but also qualitative criteria: open space usage; time of day and/or time of year; physical layout of the affected facilities; duration, size, shape, and location of the shadow; and proportion of open space affected. If the Planning Department determines, based on these factors, that the use and enjoyment of the park or public space would be substantially and adversely affected, the impact would be "significant" in the way that the term is used under CEQA. Therefore, in certain situations, new shadow could be significant under Planning Code Section 295 but would not be a significant environmental impact under CEQA, and vice versa.

Compliance with Section 295 of the Planning Code occurs independently of this EIR's analysis and evaluation of shadow impacts. The purpose of this EIR analysis is to provide the public and City decision-makers with information that sufficiently describes the proposed project's or variant's shadow in terms of:

- the types of parks and open spaces the shadow would affect,
- the times and locations where the shadow would occur,
- the anticipated duration of the shadow, and
- the potential for the shadow to substantially and adversely affect any activities or uses in the subject parks or open spaces.

Approach to Analysis

The variant would include buildings both taller and with larger massing than the proposed project's buildings, and the resulting shadows would be worse in both area and duration. As a result, the proposed project was not modeled separately because any shadow impacts resulting from buildings under the proposed project would be

less than impacts under the variant. The discussion below applies primarily to the variant, and is a conservative, worst-case scenario that assumes impacts from the proposed project would be less than impacts of the variant.

The shadowing effect is assessed in terms of hourly shadow diagrams and shadow calculations, from 1 hour after sunrise through 1 hour before sunset.

Shadow Diagrams: Shadow diagrams are graphical illustrations of the shadows cast by project elements under the variant, and by the surrounding developments, on the parks/open spaces regulated by Planning Code Section 295 under both existing and with-variant conditions. Shadow diagrams are produced hourly, starting 1 hour after sunrise and ending 1 hour before sunset, for up to 5 days of the year:

- *Winter solstice (December 21)*—midday sun is lowest and shadows are at their longest.
- *Summer solstice (June 21)*—midday sun is at its highest and shadows are at their shortest.
- *Vernal equinox (March 21)*—shadows are midway through a period of lengthening.[3]
- *"Worst-case" shadow day (area)*—the day on which the net new shadows cover the largest area.
- *"Worst-case" shadow day (duration)*—the day on which the net new shadows have the longest overall duration, expressed in sfh.

Shadow Calculations: Tabulated data indicating the amount of net new shadow and existing shadow, expressed in sfh, in 15-minute increments throughout the day between 1 hour after sunrise and 1 hour before sunset on each day where project elements under the variant would cast net new shadows on parks/open spaces regulated by Section 295 of the Planning Code.

Three-dimensional models were constructed and used to represent existing site conditions and proposed commercial development for the variant within the existing surrounding conditions. The models included a sufficiently detailed representation of adjacent developments located within a distance judged to influence shadowing conditions around the proposed development site.

Any local topography that could affect the shadowing was included in the model. The model of the variant was constructed based on three-dimensional CAD models supplied to BMT by RPD and BUILD and the design team. The inputs entered into the model for calibration represented the proposed sizes and heights of structures.[4]

A shadow fan was previously defined by the Planning Department as part of the preliminary project assessment on September 10, 2015. The shadow fan indicated the likelihood that the proposed project or variant would cast new shadows on parks/open spaces. This initial assessment identified the India Basin Open Space property as the only existing park/open space that could be adversely affected by the proposed project or the variant, in terms of shadowing. Based on updated information about the project site, the proposed project, and the variant, a subsequent shadow fan prepared by BMT (see Figure 3.10-1) determined that India Basin Shoreline Park, the future park on the 900 Innes property, and the future "Big Green" would receive new shadows from either the

[3] Shadow patterns on the autumnal equinox (September 21) would be the same as shadow patterns on the vernal equinox, so separate diagrams for the autumnal equinox are not necessary.

[4] The shadow report analyzed building heights up to a maximum of 150–155 feet; however, building heights were subsequently changed by 5–10 feet. In some locations, building heights were raised up to a maximum of 160 feet whereas in other locations, building heights decreased by 5-10 feet. An addendum to the shadow report states that this increase would have a marginally greater but unnoticeable shadow effect on open spaces. The addendum to the shadow report is included in Appendix I.

proposed project or the variant. The 900 Innes property is not an existing park or open space, but as a future park under RPD jurisdiction, it would be protected under Section 295 of the Planning Code. An analysis of the shadows cast on the 900 Innes property by the proposed project and variant is included below for informational purposes only. The Big Green is not an existing park, is currently located on privately owned land, and would later be transferred to the Port of San Francisco (SF Port) for ownership, and operated under a memorandum of understanding with RPD. Accordingly, because the Big Green is not currently under the jurisdiction of or designated for acquisition by the Recreation and Park Commission, it would not be protected under Section 295 of the Planning Code. An analysis of the shadows cast on the Big Green by the proposed project and variant is included below for informational purposes only.

Project Features

Both the proposed project and the variant would involve demolishing some of the existing buildings on the project site and constructing a mixed-use development that would include residential, commercial, institutional/educational, research and development, parking, and open space uses. Some of the proposed buildings would be tall enough that they could cast shadows on existing and proposed open spaces on or near the project site.

The proposed 5.63-acre Big Green at the 700 Innes property would be a publicly accessible open space. Currently owned by BUILD, it may be transferred to SF Port in the future.

The 900 Innes property would be developed as a waterfront park providing a connection between India Basin Shoreline Park and the India Basin Open Space. RPD would have jurisdiction over and operate the 900 Innes property.

Impact Evaluation

As described above in "Approach to Analysis," the variant would include buildings both taller and with larger massing than the proposed project's buildings, and the resulting shadows would be worse in both area and duration. As a result, the proposed project scenario was not modeled separately because any shadow impacts from buildings under the proposed project would be less than impacts under the variant. The discussion below is for the variant, but is relevant to the proposed project as well because the impacts of the proposed project would be less than those of the variant.

Impact SH-1: The proposed project or variant would not create new shadow in a manner that would substantially affect outdoor recreation facilities or other public areas. *(Less than Significant)*

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Project construction under the proposed project or variant would not create adverse shadow effects on publicly accessible open space areas, because construction activities and equipment would not cast substantive shadows on existing open space areas such as the India Basin Shoreline Park and India Basin Open Space properties. Some construction equipment, such as cranes, would exceed 40 feet in height; however, the shadows cast by this equipment would not be substantial (because of the cranes' lack of bulk) and would be temporary (limited to the construction period).

Source: San Francisco, 2017

Figure 3.10-1: Shadow Fan Analysis

Operation

Because of its additional massing, the variant has been determined to be the worst-case between the two build scenarios (the proposed project and variant) for operational impacts. The proposed buildings and structures would generally have the same heights under the variant as under the proposed project, but would contain approximately 20,000 sq. ft. more area. Because the variant is considered the "worst-case" or more conservative scenario, shadow diagrams were produced only for the variant, and the following analysis of operational shadow impacts is for the variant only. The proposed project's operational shadow impacts would be slightly less than the operational shadow impacts of the variant presented below, because buildings under the proposed project would be either the same height or, in some cases, approximately 10 feet shorter than buildings under the variant.

Presented on the following pages are 12 diagrams showing 5 representative days of the year, each during three representative times of day (1 hour after sunrise, noon, and 1 hour before sunset):

- the summer solstice, June 21 (shown in Figures 3.10-2 through 3.10-4);
- the vernal and autumnal equinoxes, March 21 and September 21 (Figures 3.10-5 through 3.10-7);
- the winter solstice, December 21 (Figures 3.10-8 through 3.10-10); and
- the "worst-case" day of maximum shading (Figures 3.10-11 and 3.10-12 for overall sfh of shadow, and Figures 3.10-13 and 3.10-14 for the moment when the shadow reaches its maximum area).

India Basin Shoreline Park Property

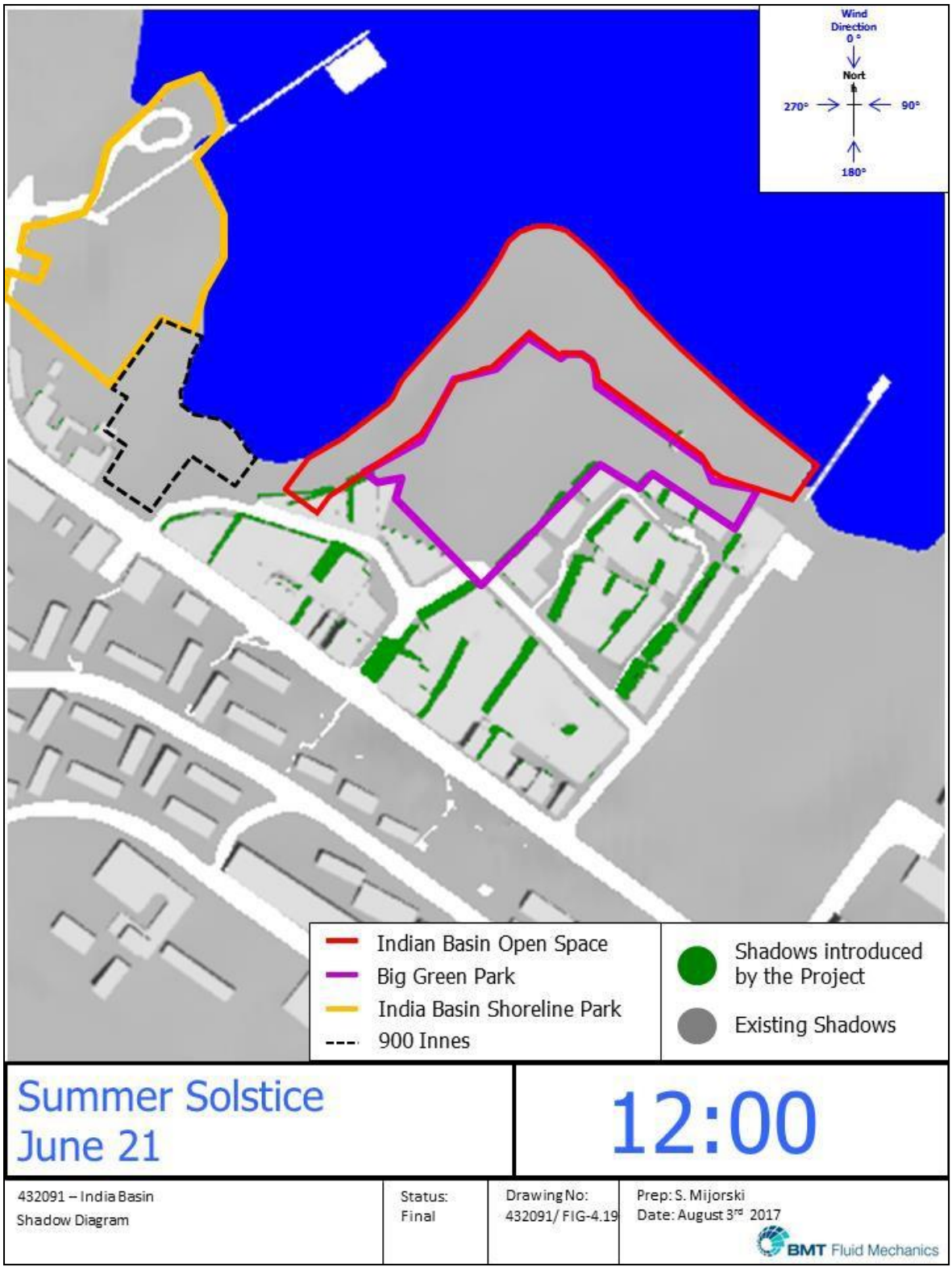
As part of the either the proposed project or the variant, India Basin Shoreline Park would be redesigned to serve the surrounding community and enhance citywide program offerings. The Blue Greenway/Bay Trail and Class I bicycle lane would continue through this park. Pedestrian, bicycle, and vehicular access to the shoreline would be enhanced, and approximately 2,700 gsf of institutional uses, in the form of the outfitters building (kayak concessions, office and restroom), covered outdoor space, and a multi-stall restroom near the playground would be built at India Basin Shoreline Park. The maximum height of proposed buildings on this property would be 25 feet. Compared to taller buildings, a 25-foot-tall building would cast shadows that are shorter in length and duration and, in general, would cover a smaller area (i.e., a shorter building would result in a smaller shadow fan than would a taller building). Because of the relatively low heights of the buildings proposed to be constructed in the park, shadows cast by these buildings would not substantially affect the public's ability to use and enjoy the park.

During the winter, shadow from some of the proposed buildings on the 700 Innes property would reach the southeastern corner of the park at the beginning of the day. The shadow, which is not expected to last more than 20 minutes, would gradually decrease in area and recede eastward across the park, moving off the park before 9:00 a.m. The affected portion of the park is currently a landscaped area that does not include any pedestrian pathways or seating areas. Given the short duration of the shadow and the use of the affected portion of the park, shadow from the proposed buildings on the 700 Innes property would not substantially affect the public's ability to use and enjoy the park. Shadow from the proposed buildings on the 700 Innes property would not reach the park at any other time during the year.

Therefore, implementation of the proposed project or variant would not create new shadow in a manner that would substantially affect India Basin Shoreline Park.

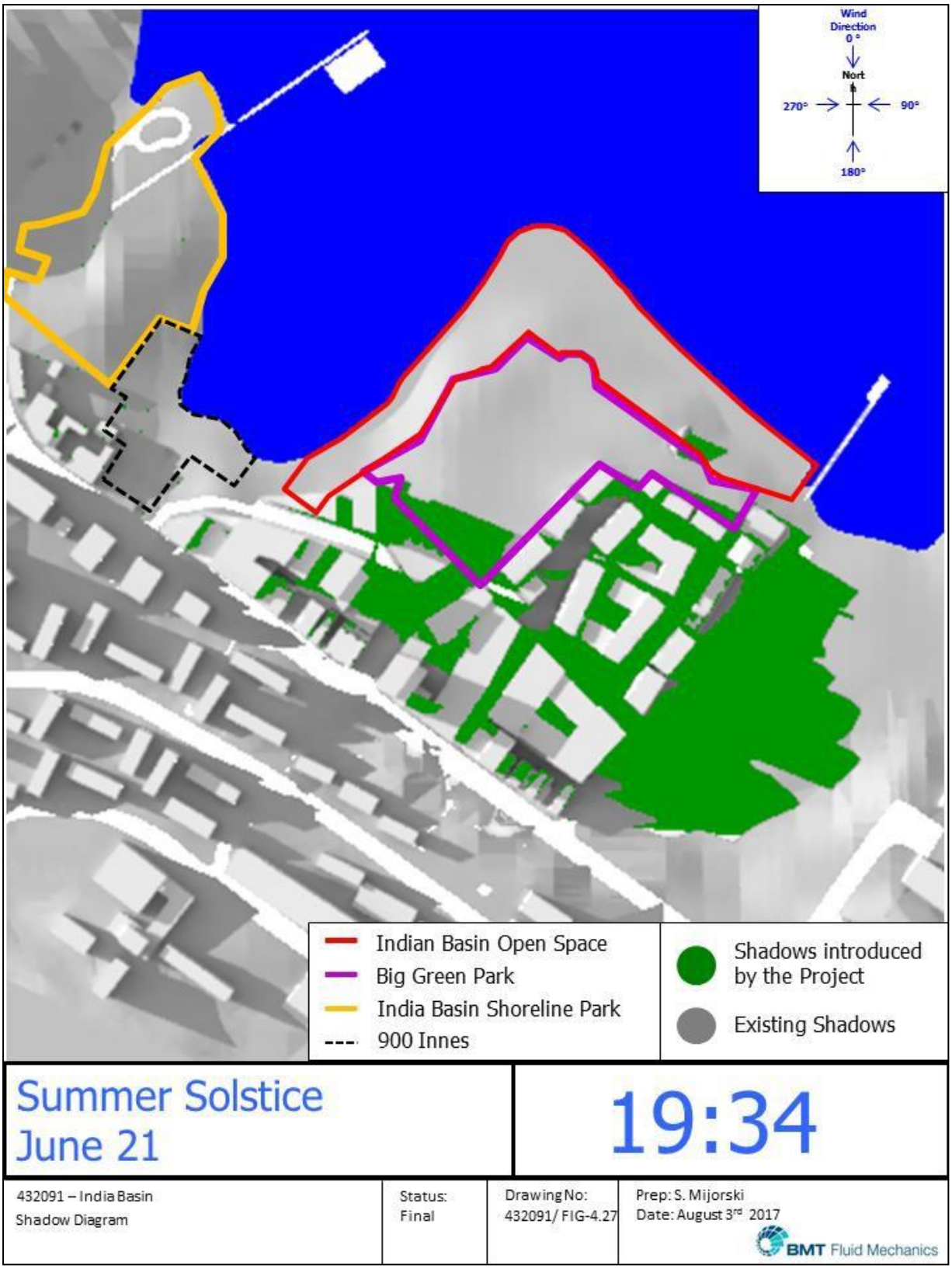
Source: San Francisco, 2017

Figure 3.10-2: Shadow Diagram, 1 Hour after Sunrise on the Summer Solstice (June 21, 6:48 a.m.)



Source: San Francisco, 2017

Figure 3.10-3: Shadow Diagram, Noon on the Summer Solstice (June 21, 12:00 p.m.)

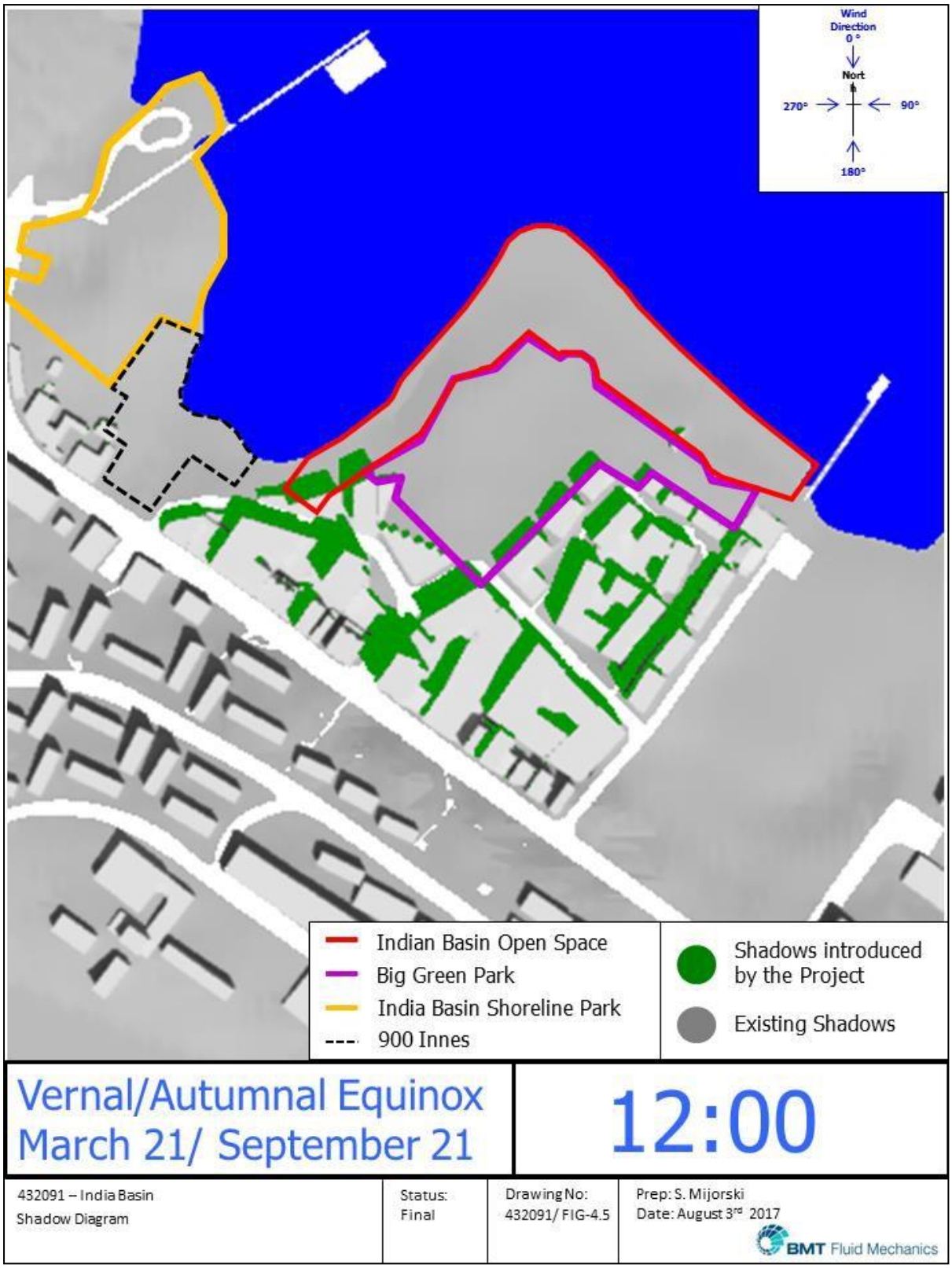


Source: San Francisco, 2017

Figure 3.10-4: Shadow Diagram, 1 Hour before Sunset on the Summer Solstice (June 21, 7:34 p.m.)

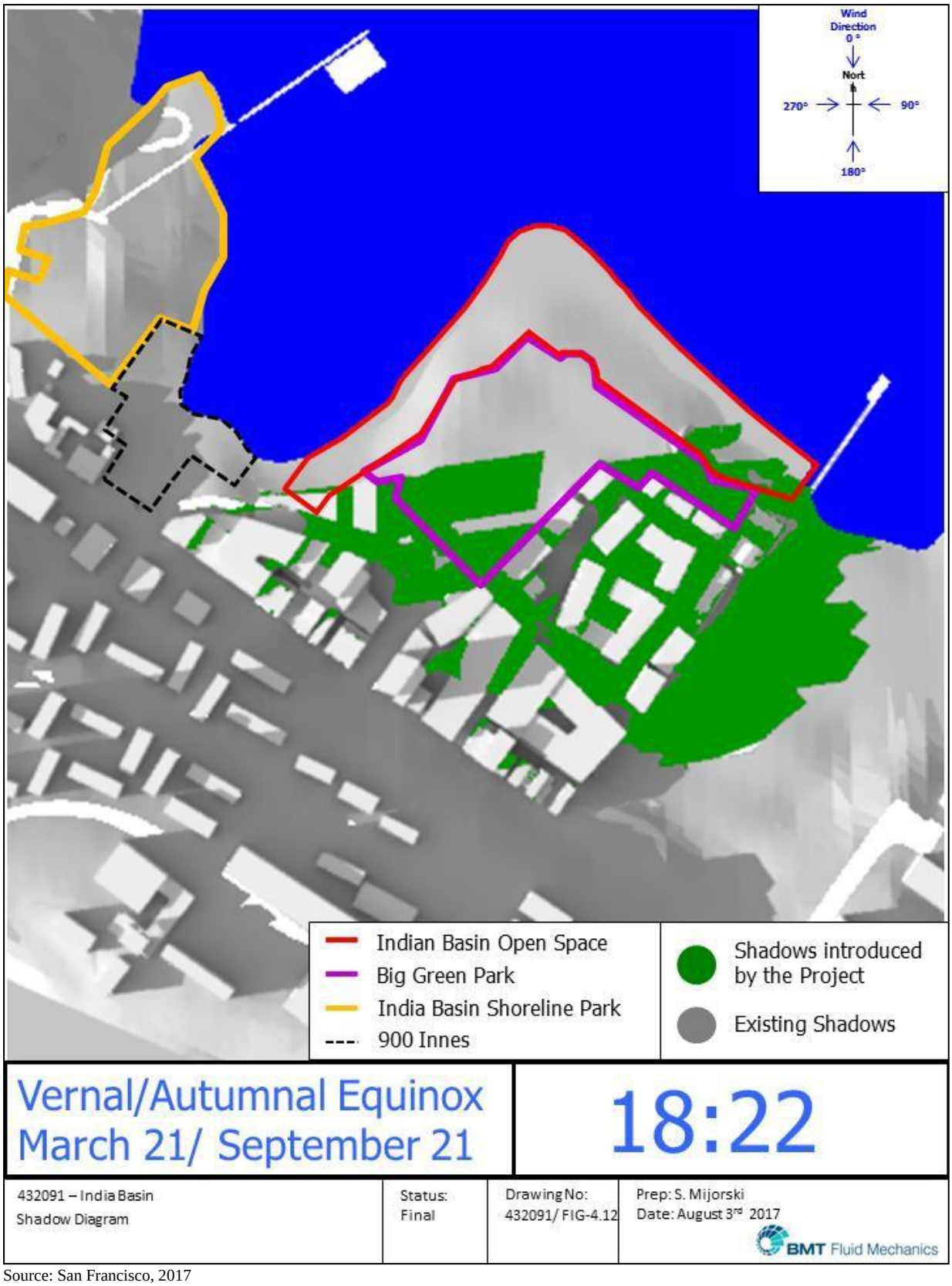
Source: San Francisco, 2017

Figure 3.10-5: Shadow Diagram, 1 Hour after Sunrise on the Vernal/Autumnal Equinox (March 21/September 21, 8:10 a.m.)



Source: San Francisco, 2017

Figure 3.10-6: Shadow Diagram, Noon on the Vernal/Autumnal Equinox (March 21/September 21, 12:00 p.m.)



Source: San Francisco, 2017

Figure 3.10-7: Shadow Diagram, 1 Hour before Sunset on the Vernal/Autumnal Equinox (March 21/September 21, 6:22 p.m.)

Source: San Francisco, 2017

Figure 3.10-8: Shadow Diagram, 1 Hour after Sunrise on the Winter Solstice (December 21, 8:21 a.m.)

Source: San Francisco, 2017

Figure 3.10-9: Shadow Diagram, Noon on the Winter Solstice (December 21, 12:00 p.m.)

Source: San Francisco, 2017

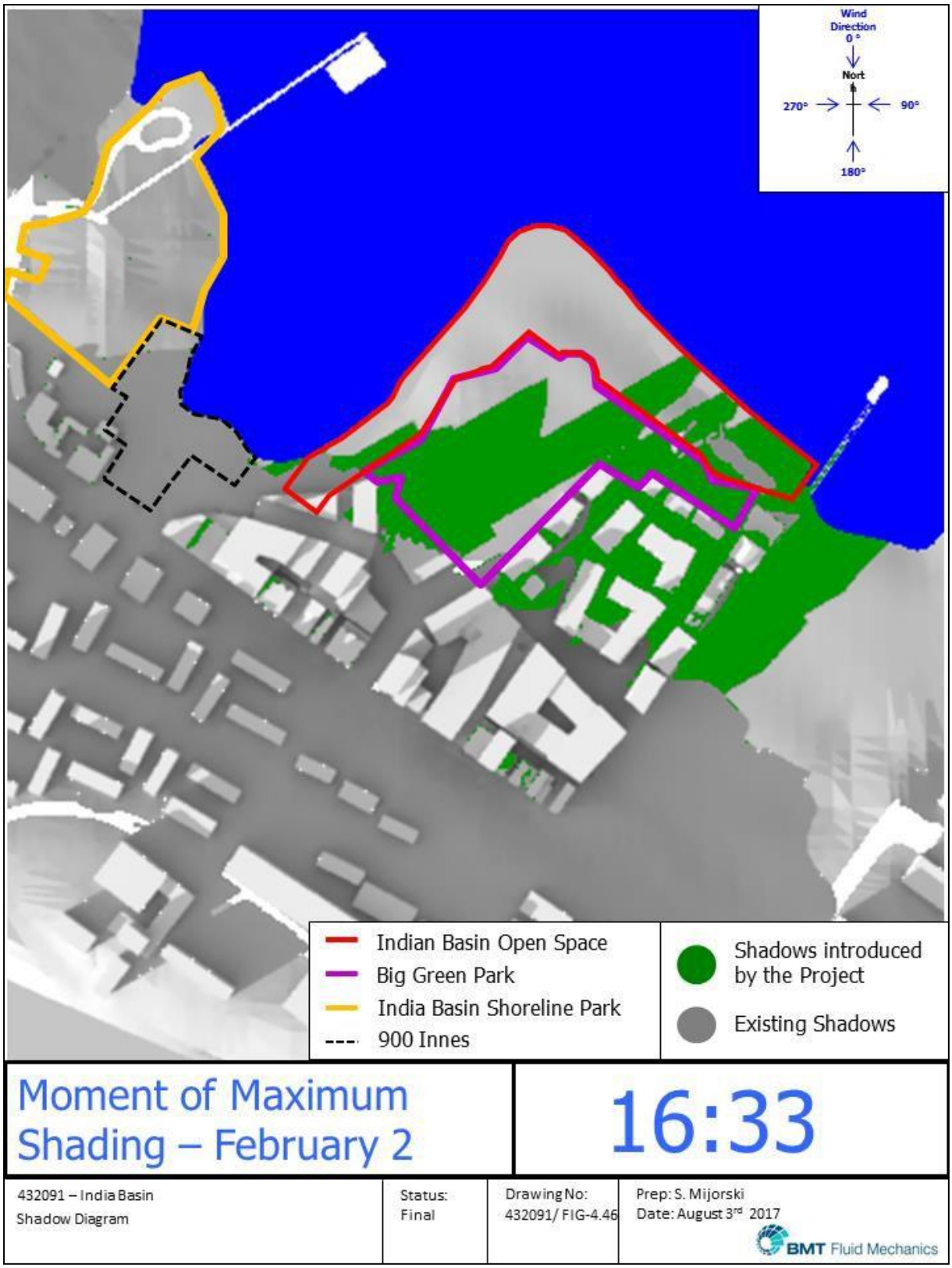
Figure 3.10-10: Shadow Diagram, 1 Hour before Sunset on the Winter Solstice (December 21, 3:54 p.m.)

Source: San Francisco, 2017

Figure 3.10-11: Shadow Diagram, Date of Maximum Overall Shading, 1 Hour after Sunrise (December 27, 8:23 a.m.)

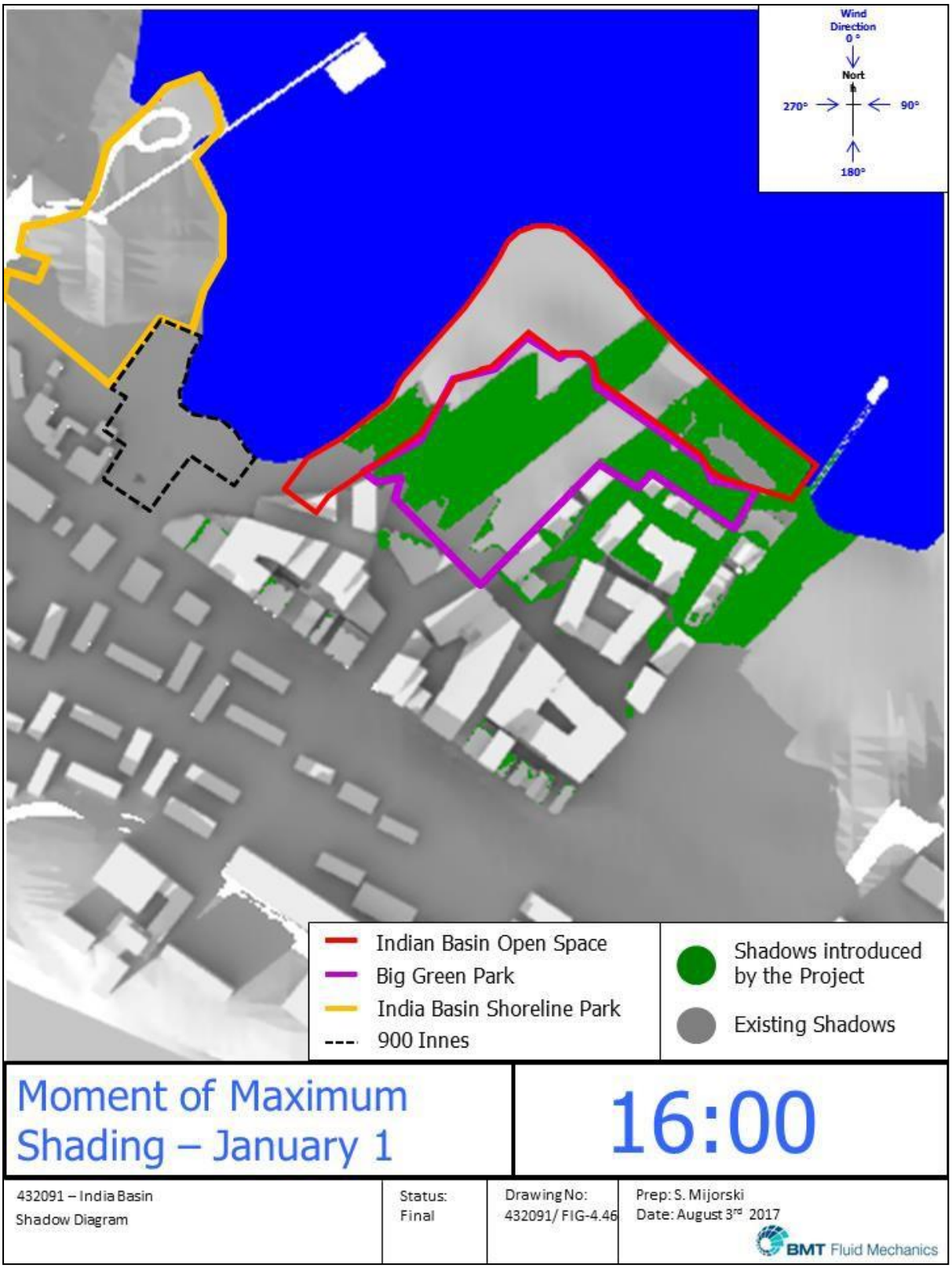
Source: San Francisco, 2017

Figure 3.10-12: Shadow Diagram, Maximum Overall Shading (December 27, 3:00 p.m.)



Source: San Francisco, 2017

Figure 3.10-13: Shadow Diagram, Moment of Maximum Shaded Area on the India Basin Open Space (February 2, 4:33 p.m.)



Source: San Francisco, 2017

Figure 3.10-14: Shadow Diagram, Moment of Maximum Shaded Area on the Big Green (January 1, 4:00 p.m.)

900 Innes Property

There are no existing open spaces on the 900 Innes property. Accordingly, the 900 Innes property, which would be a future publicly accessible park under either the proposed project or the variant, is discussed under "Future Open Spaces on the Project Site."

India Basin Open Space Property

The India Basin Open Space property has a total area of 287,334 sq. ft.[5] and currently has 363,855 sfh of shade annually. Based on the property's TAAS of 1,069,284,748 sfh, the open space is currently shaded 0.03 percent of the year.

Table 3.10-1 presents the TAAS calculations for the India Basin Open Space property.

Table 3.10-1: Theoretical Annual Available Sunlight at the India Basin Open Space Property

Park area	287,334 sq. ft.
Hours of annual available sunlight (from 1 hour after sunrise to 1 hour before sunset on each day)	3,721.4 hours
Theoretical Annual Available Sunlight	1,069,284,748 sfh

Notes: sfh = square foot–hours; sq. ft. = square feet
Source: San Francisco, 2017

As described above, the variant is considered the "worst-case" or more conservative scenario, and shadow diagrams were produced only for the variant. The following analysis of operational shadow impacts is for the variant only.

With implementation of the variant, there would be 39,506,930 sfh of annual shade on the India Basin Open Space property, with the variant contributing 39,143,075 sfh, or 3.66 percent, net additional shading. The day of maximum shading would occur on December 27; new shadows from the variant would create an increase of 248,399 sfh, or 7.78 percent, above current shading levels on this day. The new shadows from the variant on the open space on this day would occur in the afternoon hours.

The largest net new shadow area cast on the India Basin Open Space property would be 75,427 sq. ft., or 26.25 percent of the total India Basin Open Space area. The moment of maximum shading on the India Basin Open Space would occur on February 2 at 4:33 p.m.

Tables 3.10-2 through 3.10-4 summarize shadow impacts on the India Basin Open Space property.

[5] India Basin Open Space property is 6.2 acres (270,072 sq. ft.). The square footage used in the shadow analysis (287,334 sq. ft.) includes rights-of-way within the park boundary. The rights-of-way are not under the jurisdiction of the Recreation and Park Commission, but they were included in the shadow analysis so that the entire park could be analyzed as a single functional area.

Table 3.10-2: Annual Shading at the India Basin Open Space Property

	Annual Shading (sfh)	Annual Shading (% of TAAS)
Existing Conditions	363,855	0.03%
Variant	39,506,930	3.69%
Net New Shading	39,143,075	3.66%

Notes: sfh = square foot–hours; TAAS = Theoretical Annual Available Sunlight
Source: San Francisco, 2017

Table 3.10-3: India Basin Open Space Property—Day of Maximum Shading

Date(s) when maximum new shading would occur	December 27
Percentage net new shading on date(s) of maximum shading	7.78%
Total net new shading on date(s) of maximum shadow	248,399 sfh

Note: sfh = square foot–hours
Source: San Francisco, 2017

Table 3.10-4: India Basin Open Space Property—Time and Date of Maximum Shading

Time and date when maximum new shading would occur	February 2, 4:33 p.m.
Percentage net new shading on time and date of maximum shading	26.25%
Total net new shading on time and date of maximum shadow	75,427 sq. ft.

Note: sq. ft. = square feet
Source: San Francisco, 2017

The shadow diagrams provided in Figures 3.10-2 through 3.10-14 provide a visual representation of the new shadows that would be cast on the India Basin Open Space property by the variant's buildings and structures on 5 representative days of the year. Figures showing results on an hourly basis, starting 1 hour after sunrise and ending 1 hour before sunset, are provided in Appendix I and summarized for the days below.

- *Vernal/autumnal equinox, March 21/September 21:* New shadows would be cast on the India Basin Open Space property all day long, from 7:10 a.m., predominantly on the southwest corner of the open space, with the maximum net new shadow occurring at 9:00 a.m.
- *Summer solstice, June 21:* New shadows would be cast on the India Basin Open Space property all day long, with the minimum net new shadow occurring at an hour after sunrise, at 6:48 a.m., and the maximum in the afternoon, at 6:34 p.m., principally to the southeast of the open space.
- *Winter solstice, December 21:* The India Basin Open Space property would be exposed to new shadows all day long, with a minimum net new shadow occurring at 9:00 a.m. and the maximum at 3:54 p.m., principally covering the southeast and southwest corners of the open space.
- *"Worst-case" shadow day, December 27:* The worst day of the year, in terms of overall sfh of net new shadow cast on the India Basin Open Space property by the variant, has been identified to be December 27.

The maximum net new shadow cast on this property by the variant's buildings and structures would occur at 3:58 p.m.

- *"Worst-case" shadow time and day, for the India Basin Open Space property, February 2, 4:33 p.m.:* This figure represents the moment when net new shadow cast on the India Basin Open Space property by the variant's buildings and structures would reach its maximum area.

Nearly 8 percent net new shading would be cast on the India Basin Open Space property by proposed buildings at the 700 Innes property during the days when maximum shading would occur. Over an entire year, 3.69 percent of TAAS on the India Basin Open Space property would be shaded as a result of development at the 700 Innes property. As stated above in Section 3.10.2, "Regulatory Framework," the India Basin Open Space is not among the 14 downtown parks for which absolute cumulative limits were established in Section 295 of the Planning Code. Moreover, additional shadow is permitted on the India Basin Open Space as long as the new shadow would not adversely affect use of the park. The acceptability of any new shadow is determined by the Planning and Recreation and Park commissions and takes into account the amount of area shaded, the duration of the shadow, the importance of sunlight to the type of open space, and the potential for the new shadow to adversely affect the use of the park. Because no absolute cumulative limit is established for the India Basin Open Space, the qualitative criteria applied in this case are similar to the qualitative criteria pursuant to CEQA. Thus, the discussion below focuses on how the open space would be used and whether new shadow would adversely affect these uses anticipated.

As stated in Section 3.10.1, "Environmental Setting," the India Basin Open Space property is currently used primarily by pedestrians on the Blue Greenway/Bay Trail. The open, accessible nature of the India Basin Open Space, together with its location in a relatively quiet residential area of the City, would allow a substantial number of people to use it when simply crossing through the park. The primary types of activities at the India Basin Open Space property (e.g., walking, running, biking) are transitory and not particularly sensitive to the availability of sunlight, so net new shadow would not substantially affect the public's ability to use and enjoy the open space. Furthermore, the "worst-case" shadow day, or the day when there would be the most net new sfh of shadow, would occur during the winter, on December 27 at 3:58 p.m. According to the National Oceanic and Atmospheric Administration (NOAA 1995), more than 80 percent of San Francisco's seasonal rain falls between November and March. The two coldest months of the year are December and January (WRCC, 2006). Park usage would likely be the lowest during this time of the winter season, because the weather in this part of San Francisco is typically colder and rainier in the winter than in the more temperate spring, summer, and fall seasons.

Under either the proposed project or the variant, 2,000 gsf of commercial uses would be built immediately adjacent to the India Basin Open Space property to serve visitors to the publicly accessible beach and open space. These uses, consisting of a café, a maintenance facility, and rental and concessions facilities, would all be less than 25 feet in height. As discussed above, the shadows cast by 25-foot-tall buildings would be shorter in length and duration and would cover smaller areas than the shadows cast by taller buildings. Because the heights of the buildings proposed for construction immediately adjacent to the India Basin Open Space property would be relatively low, the shadows cast by those buildings would not be noticeable to users of this space.

As stated above, the "worst-case" shadow day would occur during the winter, on December 27. Future recreational uses of the enhanced India Basin Open Space property could include people sitting on the beach, dog walkers, and kayakers. This is the time of year, and the time of day (late afternoon), when there would be the most

sfh of shadow. It is assumed that the winter weather in this part of San Francisco, typically colder and rainier than in the spring, summer, and fall is likely to result in the year's lowest use level of the open spaces. During the winter, because of the less temperate weather, park uses would likely be more active (walking or jogging) than passive (sitting or reading), and thus would not be adversely affected by shadow because the amount of time users would spend within the net new shadow areas would be substantially less. Therefore, new net shadow would not adversely affect the public's ability to use and enjoy the open space, and implementation of the proposed project or variant would not create new shadow in a manner that would substantially affect the India Basin Open Space property.

700 Innes Property

There are no existing open spaces on the 700 Innes property. The Big Green, which would be a future publicly accessible open space on the 700 Innes property, is discussed under "Future Open Spaces on the Project Site."

Sidewalks

The buildings and structures associated with the variant would shade portions of streets and sidewalks in the project vicinity at various times of the day throughout the year. The streets and sidewalks in the vicinity are already shadowed by existing buildings. Additional shadows on streets and sidewalks cast by the variant would be transitory and would not exceed levels commonly expected in urban areas. As a result, the proposed project or variant would not create new shadow in a manner that would substantially affect any public areas.

Overall Impact Conclusion

As stated above, the buildings proposed for construction within India Basin Shoreline Park would be relatively short (25 feet tall). The shadows that would be cast by these buildings would not substantially affect the public's ability to use and enjoy the park. The "worst-case" shadow day on the India Basin Open Space would occur during the winter season when uses of the park would likely be more active (walking or jogging) than passive (sitting or reading) because of the cold, rainy weather and fewer hours of daylight. For the reasons discussed above, the construction-related and operational shadow impacts of the proposed project and variant on existing outdoor recreation facilities or other public areas would be *less than significant*. No mitigation measures are necessary.

Future Open Spaces on the Project Site

900 Innes Property

Under either the proposed project or the variant, the 900 Innes property would be developed as a waterfront park providing a connection between India Basin Shoreline Park and the India Basin Open Space. The 900 Innes property would also provide a connection for the Blue Greenway/Bay Trail, the Class 1 bikeway, and pedestrian, bicycle, and vehicular access to the shoreline. Other potential project elements for this property include piers, fishing areas, plazas, event areas, tidal marshes, facilities for concessions, drinking fountains, restrooms, passive recreational areas for picnicking, shade structures, bicycle parking, wayfinding signage, and historical and education displays.

Once created, the future park on the 900 Innes property would be owned and operated by RPD and would be protected under Section295 of the Planning Code. Because the 900 Innes property does not yet exist as an open space, the net new shadow cast on the 900 Innes property by the variant's buildings and structures could not result in an impact under CEQA (i.e., the variant cannot affect an existing expectation of sunlight on an open space when that open space does not currently exist). The analysis below is presented for informational purposes.

Either the proposed project or the variant would cast shadow on portions of the 900 Innes property throughout the year:

- *Winter:* At the beginning of the day, shadow from some of the proposed buildings on the 700 Innes property would cover most of the park. The shadow would gradually decrease in area and recede eastward across the park as the day progresses, moving off the park around 12:00 p.m. For the remainder of the day, the only shadow cast on the park by the variant would be from two buildings not exceeding 20 feet in height that contain park-serving commercial uses. At the end of the day, the entire park would be shadowed by existing off-site buildings and topographical features (e.g., the hill on the west side of Innes Avenue across from the project site).
- *Spring:* At the beginning of the day, shadow from some of the proposed buildings on the 700 Innes property would cover the eastern edge of the park. The shadow would gradually decrease in area and recede eastward across the park, moving off the park around 9:00 a.m. For the remainder of the day, the only shadow cast on the park by the variant would be from the aforementioned buildings that contain park-serving commercial uses. At the end of the day, most of the park would be shadowed by existing off-site buildings and topographical features.
- *Summer:* During the summer, the only shadow cast on the park by the variant would be from the aforementioned buildings that contain park-serving commercial uses.
- *Fall:* The project shadow patterns would be the same as the shadow patterns during the spring.

Depending on the actual configuration and layout of the 900 Innes property, the project shadow could affect the park's plazas, event areas, picnic areas, and pedestrian pathways. In general, the largest amount of shadow cast by the variant would occur during the winter. Park uses during the winter would likely be more active (walking or jogging) than passive (sitting, reading, gathering, or children playing), due to colder, rainy weather. Active uses are less likely to be negatively affected by shadow, as users engaging in these types of uses (walking or jogging) would spend less time in shaded areas because they would be moving through the open space rather than passively sitting. Moreover, the 900 Innes property is not an existing park. As such, shadows cast on the 900 Innes property would not constitute an impact under CEQA.

700 Innes Property

The Big Green would be a publicly accessible open space on the 700 Innes property under either the proposed project or the variant. Once created, the Big Green would be transferred to SF Port, and operated under a memorandum of understanding with RPD. Because the Big Green would be privately owned at project buildout and would not be under the jurisdiction of the Recreation and Park Commission, it would not be subject to the provisions of Planning Code Section 295. The Big Green does not yet exist as an open space; therefore, net new shadow cast on the Big Green by the variant's buildings and structures could not result in an impact under CEQA

(i.e., the variant cannot affect an existing expectation of sunlight on an open space when that open space does not currently exist). The analysis below is presented for informational purposes only.

The Big Green would occupy a total area of 245,243 sq. ft. This area currently has 817,661 sfh of shade annually. As shown in Table 3.10-5, the Big Green's TAAS is 912,646,556 sfh and the Big Green area is currently shaded 0.09 percent of the year, because the site is mostly vacant.

Table 3.10-5 presents TAAS calculations for the "Big Green" proposed for the 700 Innes property.

Table 3.10-5: Big Green—Theoretical Annual Available Sunlight

Park area	245,243 sq. ft.
Hours of annual available sunlight (from 1 hour after sunrise to 1 hour before sunset on each day)	3,721.4 hours
Theoretical Annual Available Sunlight	912,646,556 sfh

Notes: sfh = square foot–hours; sq. ft. = square feet
Source: San Francisco, 2017

Tables 3.10-6 through 3.10-8 summarize shadow impacts on the Big Green. As shown, with implementation of the variant:

- The Big Green would have 132,875,433 sfh of shade annually, with the variant's buildings and structures contributing 132,057,772 sfh (14.47 percent) net new shading (Table 3.10-6).
- The day of maximum shading would occur on December 27. On that day, new shadows from the variant's buildings and structures would create an increase of 567,336 sfh (19.57 percent) above current shading levels on the Big Green (Table 3.10-7). New shadows cast on the Big Green by the variant on this day would occur in the afternoon hours.
- The largest net new shadow area cast on the Big Green would be 138,637 sq. ft., or 56.53 percent of the total Big Green area. This shadow would be cast on January 1 at 4:00 p.m. (Table 3.10-8).

Table 3.10-6: Big Green—Shadow Impacts

	Annual Shading (sfh)	Annual Shading (% of TAAS)
Existing Conditions	817,661	0.09%
Proposed Development	132,875,433	14.56%
Net New Shading	132,057,772	14.47%

Note: sfh = square foot–hours; TAAS = Theoretical Available Annual Sunlight
Source: San Francisco, 2017

Table 3.10-7: Big Green—Day of Maximum Shading

Date(s) when maximum new shading occurs	December 27
Percentage net new shading on date(s) of maximum shading	19.57%
Total net new shading on date(s) of maximum shadow	567,336 sfh

Source: San Francisco, 2017

Table 3.10-8: Big Green—Time and Date of Maximum Shading

Time and date when maximum new shading occurs	January 1, 4:00 p.m.
Percentage net new shading on time and date of maximum shading	56.53%
Total net new shading on time and date of maximum shadow	138,637 sq. ft.

Note: sq. ft. = square feet
Source: San Francisco, 2017

The shadow diagrams provided in Figures 3.10-2 through 3.10-14 provide a visual representation of the new shadows cast on the Big Green by the variant's buildings and structures on 5 representative days of the year. Figures showing results on an hourly basis, starting 1 hour after sunrise and ending 1 hour before sunset, are provided in Appendix I and summarized for the days below.

- *Vernal/autumnal equinox, March 21/September 21:* New shadows would be cast on the Big Green all day long, starting at 7:10 a.m., predominantly on the southern portion of the Big Green. The maximum net new shadow would occur at 5:15 p.m.
- *Summer solstice, June 21:* New shadows would be cast on the Big Green all day long, with the minimum net new shadow occurring at 1:15 p.m. and the maximum at 6:30 p.m., principally on the southwest and southeast portions of the Big Green.
- *Winter solstice, December 21:* The Big Green would be exposed to new shadows all day long, with a minimum net new shadow occurring at 12:45 p.m. and the maximum at 3:45 p.m., covering the majority of the north and northeast portions of the Big Green.
- *"Worst-case" shadow day, December 27:* The worst day of the year, in terms of overall sfh of net new shadow cast on the Big Green by the variant, has been identified to be December 27. The maximum net new shadow cast on the India Basin Open Space by the variant's buildings and structures would occur at 3:45 p.m.
- *"Worst-case" shadow time and day for the Big Green, January 1, 4:00 p.m.:* This figure represents the moment when net new shadow cast on the Big Green by the variant's buildings and structures would reach its maximum area.

Under either the proposed project or the variant, the majority of the Big Green would be composed of grasslands, stormwater bioretention ponds, swales, planters, a wet meadow, and groves of trees. The Big Green would also include some children's play areas, a fitness loop, small gathering spaces, pedestrian-focused pathways, streets, and plazas. Additional shadow on this area would be cast on this space, which could have the potential to negatively affect users of this space. As stated above, shadow cast on this space would be the worst during the winter (December 27 and January 1), when park uses would likely be more active (walking or jogging) than

passive (sitting, reading, gathering, or children playing) because of the cold, rainy weather and fewer hours of daylight. Active uses are less likely to be negatively affected by shadow, as users engaging in these types of uses (walking or jogging) would spend less time in shaded areas because they would be moving through the open space rather than passively sitting. Moreover, the Big Green is currently vacant and is not an existing park. As such, shadows cast on the Big Green would not constitute an impact under CEQA.

Future Open Spaces in the Project Vicinity

Northside Park is a 12.8-acre future open space that will be created as part of the Candlestick Point–Hunters Point Shipyard Phase II Development Plan Project (San Francisco, 2010). Northside Park will be southeast of and adjacent to the project site. As envisioned, Northside Park will include both active and passive recreational uses. The active recreational uses will be concentrated in the southwest portion of the open space and will include community gardens; basketball, tennis, and volleyball courts; a children's playground; and restrooms. There will be an open-air marketplace and pedestrian pathways will cross the open space. The northeast portion of the open space will feature passive recreational uses such as picnic areas and pathways along the waterfront.

Because Northside Park does not yet exist, shadow cast on this open space by the buildings and structures for the proposed project or the variant could not result in an impact under CEQA (i.e., the proposed project cannot affect an existing expectation of sunlight on an open space when that open space does not currently exist). Therefore, the discussion below is presented for informational purposes only.

Either the proposed project or the variant would cast shadow on portions of Northside Park throughout the year:

- *Winter:* The project shadow would begin around 3:00 p.m. along the western boundary of Northside Park. The shadow would gradually increase in area and move eastward across the open space as the day progresses, eventually covering the northwest portion of the open space by the end of the day (Figure 3.10-10).
- *Spring:* The project shadow would begin around 4:00 p.m. along the western boundary of Northside Park. The shadow would gradually increase in area and move eastward across the open space, eventually covering the western third of the open space by the end of the day (Figure 3.10-9).
- *Summer:* The project shadow would begin around 5:00 p.m. along the western boundary of Northside Park. The shadow would gradually increase in area and move eastward across the open space, eventually covering the western half of the open space by the end of the day (Figure 3.10-6).
- *Fall:* The project shadow patterns would be the same as the shadow patterns during the spring.

Depending on the actual configuration and layout of Northside Park, the project shadow would affect the park's community gardens; the basketball, tennis, and volleyball courts; and possibly the open-air marketplace and some of the pedestrian pathways. The northeast portion of Northside Park, originally envisioned to include picnic areas and pathways along the waterfront, would be largely unaffected by shadow from the proposed project or the variant.

As discussed above, project shadow on Northside Park would be limited to the late afternoon and early evening throughout the year. The proposed project or variant would not cast shadow on Northside Park during the morning and early to mid-afternoon at any time during the year.

3.10.4 Cumulative Impacts

Impact C-SH-1: The proposed project or variant would not combine with past, present, or reasonably foreseeable future projects to create new shadow in a manner that would affect outdoor recreation facilities or other public areas. *(Less than Significant)*

The relevant cumulative projects listed in Table 3-1 are somewhat removed from the project site by distance (more than 1,500 feet away). Therefore, the shadowing effect of the cumulative projects in combination with the proposed project or variant would not result in a different shadow effect on outdoor recreation facilities or other public areas in the vicinity of the project site. The changes to shadow patterns under cumulative conditions would be the same as the changes to shadow patterns under the proposed project or variant. Neither the proposed project nor the variant would combine with past, present, or reasonably foreseeable future projects to create a cumulative shadow impact on outdoor recreation facilities. For these reasons, this impact would be *less than significant.* No mitigation measures are necessary.

Sidewalks in the project vicinity are already shadowed in the morning and afternoon by existing buildings. As discussed above, changes to shadow patterns under cumulative conditions would be the same as changes to shadow patterns under the proposed project or variant. The proposed project or variant would add net new shadow to the streets and sidewalks in the project vicinity; however, these shadows would be transitory, would not substantially affect the use of the streets and sidewalks, and would not increase shadows above levels that are common and generally expected in a developed urban environment.

The proposed project or variant would not combine with past, present, and reasonably foreseeable future projects in the project vicinity to create a significant cumulative shadow impact on streets or sidewalks. This impact would be *less than significant.* No mitigation measures are necessary.

3.10.5 References

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3.11 RECREATION

This section describes the existing environmental and regulatory setting related to recreational resources and addresses the potential impacts of the proposed project and variant. Comments regarding recreation were received during the public scoping period for the Notice of Preparation, covering topics that included the San Francisco Bay Trail (Bay Trail), nonmotorized boat access, ability to experience nature, recreational facilities, and public access. These comments are addressed in this section.

3.11.1 Environmental Setting

Recreational and Open Space Resources

San Francisco

RPD owns and manages more than 3,400 acres of recreational facilities and open space throughout San Francisco (San Francisco, 2014). San Francisco also has 250 acres of open space owned and managed by the State of California, including Mt. Sutro Open Space and Candlestick State Recreation Area (San Francisco, 2014). Approximately 1,600 acres of federally owned open space are located at the Golden Gate National Recreation Area, Ocean Beach, Fort Funston, Fort Mason, Lands End, Sutro Heights, China Beach, and the Presidio (San Francisco, 2014). Almost 20 percent of the City's land area is publicly owned open space (San Francisco, 2014).

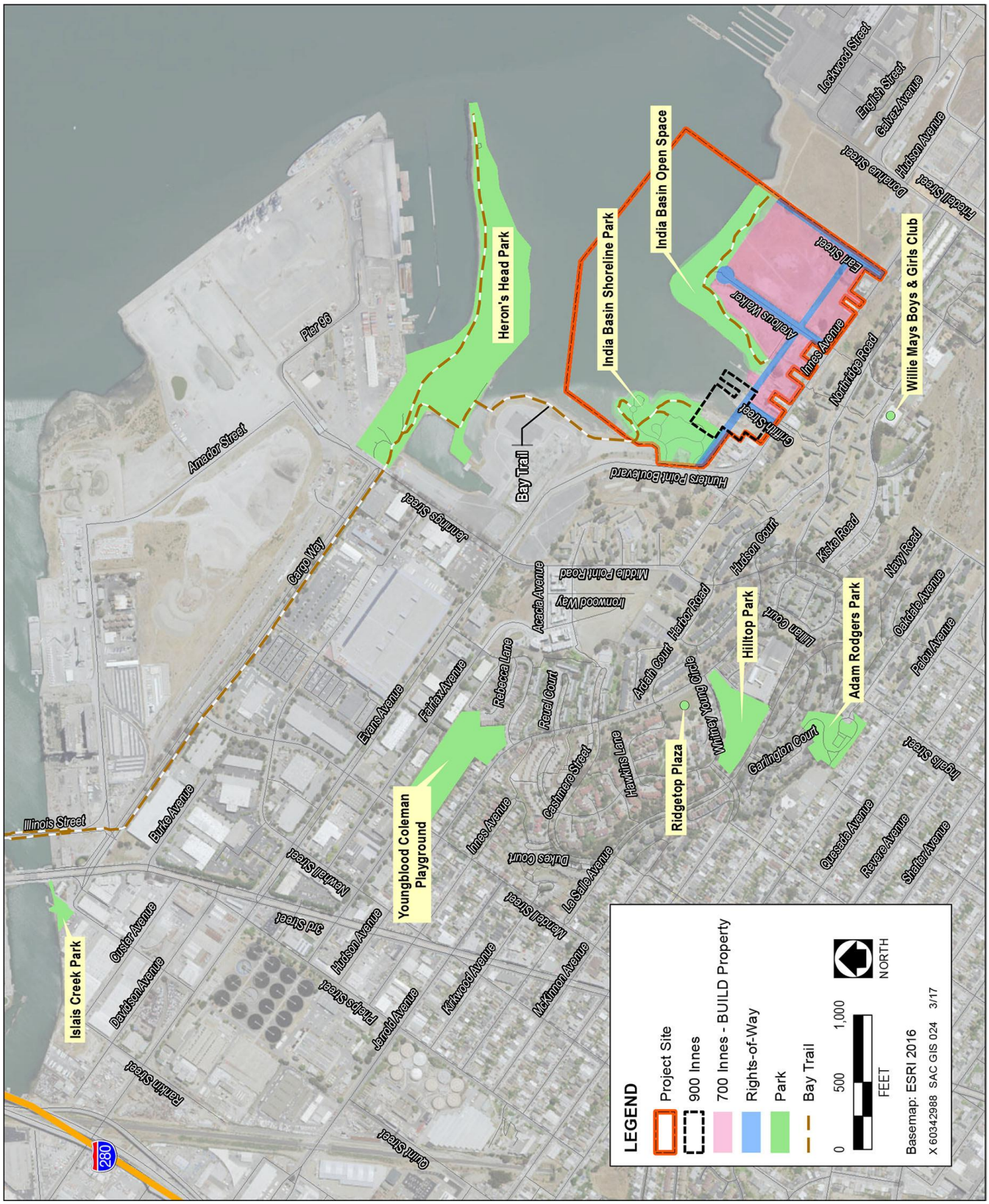
The National Park and Recreation Association does not have an absolute target for average park acreage per population. The City also has no target ratio of parkland to residents. Rather, the City focuses on the distribution of open space and on acquisition of open space in high-need areas, defined as a combination of areas where access to open space is low; the most population growth is expected to occur; and there are high percentages of children, youth, seniors, and low-income households (San Francisco, 2014). The City also focuses on improving access and connectivity to open space and ensuring high utilization of open space.

Bayview Hunters Point Area

The Bayview Hunters Point area has a high ratio of open space per household. Supervisorial District 10, as mapped on the San Francisco Board of Supervisors Web site (San Francisco, 2016), has approximately 25.7 acres of parkland per 1,000 households (when Candlestick Point State Recreation Area is included), compared to the Citywide average of 16.3 acres per 1,000 households (San Francisco, 2010).[1]

Several recreation areas, summarized in the following list, are located in the Bayview Hunters Point area (Figure 3.11-1). All but two of these recreation areas, Heron's Head Park and Willie Mays Boys and Girls Club, contain facilities operated by RPD.

[1] Boundary of Supervisorial District 10: Beginning at the San Francisco/Daly City border and census block line east of Red Leaf Court and west of Robinson Drive—following census block line north to Walbridge Street, east on Walbridge Street, west along Geneva Avenue, north between John McLaren Park and Luther Burbank High School to la Grande Avenue, north along la Grande Avenue, east on Persia Avenue, east following Mansell Street, east on Salinas Avenue, north at Wheat Street, north along Bayshore Boulevard, west at Paul Avenue, north following James Lick Freeway, east at Interstate 280 (I-280) to Bayshore Boulevard, north following Bayshore Boulevard, west on Cesar Chavez Street, north at Potrero Avenue, west on 20th Street, north on Bryant Street, east following the Central Freeway, east at Division Street, northeast on Townsend Street, southeast on 7th Street to Hubbell Street, east along Hubbell Street, south following I-280 to Mariposa Street, east on Mariposa Street, north along Terry Francois Street, east to shoreline at 16th Street.



Sources: OpenStreetMap.org (accessed September 12, 2016) and BUILD Inc., 2016

Figure 3.11-1 **Existing Recreational Facilities on the Project Site and in the Vicinity**

- *Islais Creek Park* is a 0.52-acre park owned by the Port of San Francisco that contains a dock, gravel beach, boat storage, picnic tables, and parking area for 18 vehicles. The park provides nonmotorized boat access to Islais Creek and San Francisco Bay (Bay) and is stewarded by Kayaks Unlimited (SFBAWT, 2016).
- *Adam Rodgers Park* is a 2.74-acre facility that contains a community garden, basketball court, playground, barbeque area, and restrooms (RPD, 2016a). This park, located west of the project site, provides the nearest alternate basketball court to the site. No parking area is provided at this park (RPD, 2016a).
- *Ridgetop Plaza* is a 0.29-acre park that provides excellent views but few recreational facilities. This park is located west of the project site. The park contains some picnic/seating areas but no parking or restrooms (RPD, 2016b).
- *Youngblood Coleman Playground*, located on 6.13 acres northwest of the project site, contains soccer and softball fields, basketball and tennis courts, a play area, a picnic area, and restrooms. No parking area is provided on this site (RPD, 2016c).
- *Hilltop Park* contains a playground, amphitheater, skate park, picnic area, cement slides, and restrooms (RPD, 2016d). This 3.5-acre park has recently been remodeled and includes an updated skate park, picnic area, playground, scenic overlook, and exercise area for adults (RPD, 2016e). Hilltop Park, located west of the project site, is the closest playground to the site. No parking area is provided at this park (RPD, 2016e).
- *Heron's Head Park*, owned by the Port of San Francisco and located north of the project site, is the nearest alternate shoreline park and picnic area to the site. This 22-acre park includes wetlands, a dog run, picnic area, parking area, and hiking trail, as well as the EcoCenter, which is used for educational programs (SF Port, 2016).
- *Willie Mays Boys and Girls Club at Hunters Point* is a privately owned, membership-based children's recreation center located south of the project site. This facility provides a learning center, multimedia center, art studio, teen center, games room, community room, full-size gymnasium, baseball field, and organic teaching garden (Boys and Girls Clubs of San Francisco, 2016).

Table 3.11-1 summarizes the recreational facilities located near the project site. The table shows the distance of each park from the site and, based on information from RPD, characterizes each park's overall use level and typical users. Most of the parks are within 1 mile of the project site and are used by similar user groups: children, picnickers (groups/families), and basketball players. The only other park with boating use is Islais Creek Park. All parks listed in Table 3.11-1 receive moderate use, compared to the light to moderate use received at India Basin Shoreline Park.

Project Site

India Basin Shoreline Park Property

India Basin Shoreline Park is a 5.6-acre public park, owned by the City and managed by RPD, that contains a picnic area, playground, parking area, and basketball court and a portion of the Bay Trail (San Francisco Parks Alliance, 2016; RPD, 2016f). The Bay Trail is a hiking and biking trail that encircles San Francisco and San Pablo bays, although the trail is incomplete in some locations, including within the project area and east of the site in the Hunters Point Shipyard area (San Francisco Bay Trail, 2016). India Basin Shoreline Park is also an informal launch site (i.e., no formal launching facilities exist) for the San Francisco Bay Water Trail (Bay Water Trail), which constitutes a network of launch and landing sites, or "trail heads," that allow people to enjoy

continuous, multiple-day and single-day trips on the Bay in beachable sail craft and human-powered boats (CSCC, 2011). The nearest alternate Bay Water Trail launch site is Islais Creek Park, northwest of India Basin (CSCC, 2011).

Table 3.11-1: Recreational Facilities near the Project Site

Site Name	Distance from Project Site	Recreational Facilities	Use Level/Users
Islais Creek Park	1.2 miles northwest	Dock, beach, picnic area, parking, boat storage	Average use is moderate. Users include human-powered boaters and picnickers (groups/families).
Adam Rodgers Park	0.7 mile west	Community garden, basketball court, playground, barbeque area, restrooms	Average use is moderate. Users include gardeners, basketball players, children, and picnickers (groups/families).
Ridgetop Plaza	0.7 mile west	Picnic/seating area	Average use is moderate. Users include picnickers (individuals and groups) and walkers.
Youngblood Coleman Playground	0.8 mile northwest	Soccer and softball fields, basketball and tennis courts, play area, picnic area, restrooms	Average use is moderate. Users include teams (softball and soccer), basketball and tennis players, children, and picnickers (groups/families).
Hilltop Park	0.6 mile west	Playground, amphitheater, skate park, picnic area, cement slides, restrooms	Average use is moderate. Users include children, performers/performance attendees, picnickers (groups/families), and children.
Heron's Head Park	0.5 mile north	Dog run, picnic area, hiking trail, EcoCenter	Average use is moderate. Users include dog owners/dogs, picnickers (groups/families), hikers and bird-watchers.
Willie Mays Boys and Girls Club at Hunters Point	0.1 mile south	Learning center, multimedia center, art studio, teen center, games room, community room, full-size gymnasium, baseball field, and organic teaching garden	Not available.

Sources: Avril, pers. comm., 2016; Boys and Girls Clubs of San Francisco, 2016; RPD, 2016a, 2016b, 2016c, 2016d, and 2016f; SFBAWT, 2016; SF Port, 2016

India Basin Shoreline Park is generally used during daylight hours by residents and visitors including Bay Trail users, kayakers, children (at the playground), families and groups (at the picnic area), and people playing basketball. The park is lightly used during weekdays, with moderate use on weekends. The main recreation activities are playing at the playground, picnicking, playing basketball, and kayaking (Avril, pers. comm., 2016). Many of the amenities at India Basin Shoreline Park are in outdated condition.

900 Innes Property

No public recreational facilities exist at the 900 Innes property.

India Basin Open Space Property

The India Basin Open Space property (Figure 3.11-1) does not currently contain any formal public recreational facilities other than a portion of the Bay Trail; however, this property is used by Bay Trail hikers, bird-watchers/naturalists, and dog walkers (off-trail informal/unauthorized access) during daylight hours. This property is lightly used on weekdays and weekends, with authorized usage of sand dunes occurring during low tide (Avril, pers. comm., 2016). The property does not have restrooms or parking facilities, but street parking is available nearby at the end and along the side of Arelious Walker Drive.

700 Innes Property

No public recreational facilities exist on the 700 Innes property.

3.11.2 Regulatory Framework

Federal

No federal plans, policies, regulations, or laws related to recreation are applicable to the proposed project or the variant.

State

San Francisco Bay Conservation and Development Commission

Under the McAteer-Petris Act, the San Francisco Bay Conservation and Development Commission (BCDC) has jurisdiction over the Bay and a band of land extending inland 100 feet from the Bay shoreline. The McAteer-Petris Act requires that a permit be obtained from BCDC to place fill in, extract materials exceeding $20 in value from, or substantially change the use of any land, water, or structure within BCDC's jurisdictional area. BCDC focuses on public access and can designate certain water-oriented priority land uses within the 100-foot shoreline band that are essential to the public welfare of the San Francisco Bay Area (Bay Area). BCDC grants a permit after a proposed project has been found consistent with its plans and policies, with the goal of providing the maximum feasible public access to the Bay and its shoreline (BCDC, 2016a).

In 1971, as part of its jurisdiction under the McAteer-Petris Act, BCDC designated the India Basin shoreline between the Pacific Gas and Electric Company power plant and the Hunters Point Shipyard for waterfront park, beach priority use. Development in waterfront park priority-use areas must be consistent with the recreation policies in the *San Francisco Bay Plan* (Bay Plan) (described below) that describe appropriate uses and other development and management considerations for waterfront parks (BCDC, 2016b).

San Francisco Bay Plan

The Bay Plan, originally adopted in 1968, includes policies to guide future uses of the Bay and shoreline (BCDC, 2016c), including several policies related to recreation (BCDC, 2006). Bay Plan recreation policies relevant to the proposed project and variant are listed below.

- **Policy 3:** Recreational facilities, such as waterfront parks, trails, marinas, live-aboard boats, non-motorized small boat access, fishing piers, launching lanes, and beaches, should be encouraged and allowed by the Commission, provided they are located, improved and managed consistent with the following standards:

  a. General Recreational facilities should: …

     4. Be consistent with the public access policies that address wildlife compatibility and disturbance. In addition:

     5. Different types of compatible public and commercial recreation facilities should be clustered to the extent feasible to permit joint use of ancillary facilities and provide a greater range of choices for users. …

     7. Access to marinas, launch ramps, beaches, fishing piers, and other recreational facilities should be clearly posted with signs and easily available from parking reserved for the public or from public streets or trails.

     8. To reduce the human health risk posed by consumption of contaminated fish, projects that create or improve fishing access to the Bay at water-oriented recreational facilities, such as fishing piers, beaches, and marinas, should include signage that informs the public of consumption advisories for the species of Bay fish that have been identified as having potentially unsafe levels of contaminants.

     9. Complete segments of the Bay and Ridge Trails where appropriate, consistent with policy 4-a-6 [of the Bay Plan]. …

  e. Non-Motorized Small Boats[2] Where practicable, access facilities for non-motorized small boats should be incorporated into waterfront parks, marinas, launching ramps and beaches, especially near popular waterfront destinations. (2) Access points should be located, improved and managed to avoid significant adverse affects on wildlife and their habitats, should not interfere with commercial navigation, or security and exclusion zones or pose a danger to recreational boaters from commercial shipping operations, and should provide for diverse water-accessible overnight accommodations, including camping, where acceptable to park operators. (3) Sufficient, convenient parking that accommodates expected use should be provided at sites improved for launching non-motorized small boats. Where feasible, overnight parking should be provided. (4) Site improvements, such as landing and launching facilities, restrooms, rigging areas, equipment storage and concessions, and educational programs that address navigational safety, security, and wildlife compatibility and disturbance should be provided, consistent with use of the site. (5) Facilities for boating organizations that provide training and stewardship, operate concessions, provide storage or boathouses should be allowed in recreational facilities where appropriate. (6) Design standards for non-motorized small boat launching access should be developed to guide the improvement of these facilities. Launching facilities should be accessible and designed to ensure that boaters can easily launch their watercraft. Facilities should be durable to minimize maintenance and replacement cost.

  f. Fishing Piers. Fishing piers should not block navigation channels, nor interfere with normal tidal flow.

  g. Beaches. Sandy beaches should be preserved, enhanced, or restored for recreational use, such as swimming, consistent with wildlife protection. New beaches should be permitted if the site conditions are suitable for sustaining a beach without excessive beach nourishment.

[2] Note to the reader: Section e of Policy 3 in the Bay Plan is presented here verbatim. The first sentence of this section was not labeled in the Bay Plan as item (1).

h. Water-oriented commercial-recreation. Water-oriented commercial recreational establishments, such as restaurants, specialty shops, private boatels, recreational equipment concessions, and amusements, should be encouraged in urban areas adjacent to the Bay. Public docks, floats or moorages for visiting boaters should be encouraged at these establishments where adequate shoreline facilities can be provided. Effort should be made to link commercial-recreation centers and waterfront parks by ferry or water taxi.

- **Policy 4:** To assure optimum use of the Bay for recreation, the following facilities should be encouraged in waterfront parks and wildlife refuges.

  a. In waterfront parks. (1) Where possible, parks should provide some camping facilities accessible only by boat, and docking and picnic facilities for boaters. (2) To capitalize on the attractiveness of their bayfront location, parks should emphasize hiking, bicycling, riding trails, picnic facilities, swimming, environmental, historical and cultural education and interpretation, viewpoints, beaches, and fishing facilities. Recreational facilities that do not need a waterfront location, e.g., golf courses and playing fields, should generally be placed inland, but may be permitted in shoreline areas if they are part of a park complex that is primarily devoted to water-oriented uses, or are designed to provide for passive use and enjoyment of the Bay when not being used for sports. (3) Where shoreline open space includes areas used for hunting waterbirds, public areas for launching non-motorized small boats should be provided so long as they do not result in overuse of the hunting area. (4) Public launching facilities for a variety of boats and other water-oriented recreational craft, such as kayaks, canoes and sailboards, should be provided in waterfront parks where feasible. (5) Except as may be approved pursuant to recreation policy 4-b [in the Bay Plan], limited commercial recreation facilities, such as small restaurants, should be permitted within waterfront parks provided they are clearly incidental to the park use, are in keeping with the basic character of the park, and do not obstruct public access to and enjoyment of the Bay. Limited commercial development may be appropriate (at the option of the park agency responsible) in all parks shown on the Plan maps except where there is a specific note to the contrary. (6) Trails that can be used as components of the San Francisco Bay Trail, the Bay Area Ridge Trail or links between them should be developed in waterfront parks. San Francisco Bay Trail segments should be located near the shoreline unless that alignment would have significant adverse effects on Bay resources; in this case, an alignment as near to the shore as possible, consistent with Bay resource protection, should be provided. Bay Area Ridge Trail segments should be developed in waterfront parks where the ridgeline is close to the Bay shoreline. (7) Bus stops, kiosks and other facilities to accommodate public transit should be provided in waterfront parks to the maximum extent feasible. Public parking should be provided in a manner that does not diminish the park-like character of the site. Traffic demand management strategies and alternative transportation systems should be developed where appropriate to minimize the need for large parking lots and to ensure parking for recreation uses is sufficient. (8) Interpretive information describing natural, historical and cultural resources should be provided in waterfront parks where feasible. (9) In waterfront parks that serve as gateways to wildlife refuges, interpretive materials and programs that inform visitors about the wildlife and habitat values present in the park and wildlife refuges should be provided. Instructional materials should include information about the potential for adverse impacts on wildlife, plant and habitat resources from certain activities. (10) The Commission may permit the placement of public utilities and services, such as underground sewer lines and power cables, in recreational facilities provided they would be unobtrusive, would not permanently disrupt use of the site for recreation, and would not detract from the visual character of the site.

  b. In waterfront parks and wildlife refuges with historic buildings.

c. Historic Buildings in waterfront parks and wildlife refuges should be developed and managed for recreation uses to the maximum practicable extent consistent with the Bay Plan Map policies and all of the following:

1. Physical and visual access corridors between inland public areas, vista points and the shoreline should be created, preserved or enhanced. Corridors for Bay-related wildlife should also be created, preserved and enhanced where needed and feasible.
2. Historic structures and districts listed on the National Register of Historic Places or California Registered Historic Landmarks should be preserved consistent with applicable state and federal Historic Preservation law and should be used consistent with the Bay Plan recreation policies. Public access to the exterior of these structures should be provided. Public access to the interiors of these structures should be provided where appropriate.
3. To assist in generating the revenue needed to preserve historic structures and develop, operate and maintain park improvements and to achieve other important public objectives, uses other than water-oriented recreation, commercial recreation and public assembly facilities may be authorized only if they would: (a) not diminish recreational opportunities or the park-like character of the site; (b) preserve historic buildings where present for compatible new uses; and (c) not significantly, adversely affect the site's fish, other aquatic life and wildlife and their habitats.

- **Policy 5:** Bay resources in waterfront parks and, where appropriate, wildlife refuges should be described with interpretive signs. Where feasible and appropriate, waterfront parks and wildlife refuges should provide diverse environmental education programs, facilities and community service opportunities, such as classrooms and interpretive and volunteer programs.
- **Policy 7:** Because of the need to increase the recreational opportunities available to Bay Area residents, small amounts of Bay fill may be allowed for waterfront parks and recreational areas that provide substantial public benefits and that cannot be developed without some filling.
- **Policy 8:** Signs and other information regarding shipping lanes, ferry routes, U.S. Coast Guard rules for navigation, such as U.S. Coast Guard Rule 9, weather, tide, current and wind hazards, the location of habitat and wildlife areas that should be avoided, and safety guidelines for smaller recreational craft, should be provided at marinas, boat ramps, launch areas, personal watercraft and recreational vessel rental establishments, and other recreational watercraft use areas.

San Francisco Waterfront Special Area Plan

The *San Francisco Waterfront Special Area Plan* (Special Area Plan) (1975, as amended through 2012) describes a vision for the San Francisco waterfront from the Hyde Street Pier through India Basin that applies the Bay Plan policies in greater detail (BCDC, 2012 and 2016c). The Special Area Plan's policies apply only to areas that are within BCDC jurisdiction for permit purposes (BCDC, 2012). Special area plans inform public agencies and private parties regarding what fill, dredging, or change in use of a shoreline area would be consistent with the McAteer-Petris Act and the Bay Plan policies (BCDC, 2016c).

Special Area Plan Map 7 shows the India Basin Shoreline Park and India Basin Open Space properties, as well as portions of the 900 Innes and 700 Innes properties, as a Park Priority Use area.[3] According to the Special Area Plan, permitted uses on new or replacement fill include public recreation/open space/public access and a marina. The plan has three policies that are specific to India Basin (BCDC, 2012):

- **Policy 1:** The India Basin area should be developed as a major waterfront park in accordance with the Recreation and Open Space Plan of the City of San Francisco. Some fill may be needed.
- **Policy 2:** Limited development, preferably Bay-oriented commercial recreation, should be permitted on the shoreline provided it is incidental to public access and water-related recreation and does not obstruct public access.
- **Policy 3:** Continuous public access should be provided along the west side of future Pier 98, along India Basin, and a public access connection should be provided between the two.

The following general policies from the Special Area Plan related to required public access are applicable to the proposed project and variant (BCDC, 2012):

- **Policy a:** In accordance with general Bay Plan policies, maximum feasible public access should be provided in conjunction with any development in the area covered by this Special Area Plan. Public access should be located at ground or platform level, but minor variations in elevation intended to enhance design of open space may be permitted. Public access should also be open to the sky, although some covering may be allowed if it serves the public areas and does not support structures. Particular attention should be given to the provision of perimeter public access along the platform edge. Other uses may extend to the platform edge subject to the following conditions:
  i) Such uses should enhance the total design of the project, should serve to make the public access more interesting, and should not divert the public way along more than twenty percent (20%) of the total platform edge;
  ii) Deviations of the public way from the platform edge should be limited to short distances.
- **Policy b:** Development of public access should be required as a condition of permits for new maritime and non-maritime development. The location of such access obtained as a condition of maritime development between Channel Street and India Basin should be guided by the designations for public recreation, open space, and public access, as found on Special Area Plan Maps 5 and 6.

Enhanced San Francisco Bay Area Water Trail Plan

The California State Coastal Conservancy's *Enhanced San Francisco Bay Area Water Trail Plan* describes the Bay Water Trail as a "network of launch and landing sites, or 'trail heads,' to allow people in human-powered boats and beachable sail craft to enjoy the historic, scenic and environmental richness of San Francisco Bay through continuous, multiple-day and single-day trips on the Bay" (CSCC, 2011). The plan guides implementation of the trail access points and lists India Basin Shoreline Park as an existing launching site, which

[3] Priority use areas include ports, water-related industry, airports, wildlife refuges, and water-related recreation. BCDC has designated the areas that should be reserved for priority uses on the Bay Plan maps. Priority use areas designated for such uses in the Bay Plan are to be reserved for them to minimize the need for future filling in the Bay for such uses (BCDC, 2016c).

should be focused on during implementation of the plan because minimal planning, management changes, and improvements (i.e., signage only) are required (CSCC, 2011).

Local

San Francisco General Plan, Recreation and Open Space Element

The Recreation and Open Space Element of the *San Francisco General Plan* (General Plan) (San Francisco, 2014) contains several objectives and policies that apply to recreation and the open space areas within India Basin, including using existing open space for maximum benefit and improving connectivity to open space areas. The following objectives and policies are applicable to the proposed project and variant.

Objective 1: Ensure a well-maintained, highly utilized, and integrated open space system.

- **Policy 1.1:** Encourage the dynamic and flexible use of existing open spaces and promote a variety of recreation and open space uses, where appropriate.
- **Policy 1.2:** Prioritize renovation in highly-utilized open spaces and recreational facilities and in high need areas.
- **Policy 1.3:** Preserve existing open space by restricting its conversion to other uses and limiting encroachment from other uses, assuring no loss of quantity or quality of open space.
- **Policy 1.4:** Maintain and repair recreational facilities and open spaces to modern maintenance standards.
- **Policy 1.5:** Prioritize the better utilization of McLaren Park, Ocean Beach, the Southeastern Waterfront and other underutilized significant open spaces.
- **Policy 1.7:** Support public art as an essential component of open space design.
- **Policy 1.9:** Preserve sunlight in public open spaces.
- **Policy 1.10:** Ensure that open space is safe and secure for the City's entire population.
- **Policy 1.11:** Encourage private recreational facilities on private land that provide a community benefit, particularly to low and moderate-income residents.

Objective 2: Increase recreation and open space to meet the long-term needs of the City and Bay region.

- **Policy 2.2:** Provide and promote a balanced recreation system which offers a variety of high quality recreational opportunities for all San Franciscans.
- **Policy 2.4:** Support the development of signature public open spaces along the shoreline.
- **Policy 2.7:** Expand partnerships among open space agencies, transit agencies, private sector and nonprofit institutions to acquire, develop and/or manage existing open spaces.
- **Policy 2.8:** Consider repurposing underutilized City-owned properties as open space and recreational facilities.
- **Policy 2.11:** Assure that privately developed residential open spaces are usable, beautiful, and environmentally sustainable.

Objective 3: Improve access and connectivity to open space.

- **Policy 3.2**: Establish and implement a network of Green Connections that increases access to parks, open spaces, and the waterfront.
- **Policy 3.3:** Develop and enhance the City's recreational trail system, linking to the regional hiking and biking trail system and considering restoring historic water courses to improve stormwater management.
- **Policy 3.4:** Encourage non-auto modes of transportation—transit, bicycle and pedestrian access—to and from open spaces while reducing automobile traffic and parking in public open spaces.
- **Policy 3.5:** Ensure that, where feasible, recreational facilities and open spaces are physically accessible, especially for those with limited mobility.

Objective 4: Protect and enhance the biodiversity, habitat value, and ecological integrity of open spaces and encourage sustainable practices in the design and management of our open space system.

- **Policy 4.3:** Integrate the protection and restoration of local biodiversity into open space construction, renovation, management and maintenance.
- **Policy 4.4:** Include environmentally sustainable practices in construction, renovation, management and maintenance of open space and recreation facilities.

Objective 5: Engage communities in the stewardship of their recreation programs and open space.

- **Policy 5.1:** Engage communities in the design, programming and improvement of their local open spaces, and in the development of recreational programs.
- **Policy 5.3:** Facilitate the development of community-initiated or supported open spaces.

Accountable Planning Initiative

In November 1986, the voters of San Francisco approved Proposition M, the Accountable Planning Initiative, which added Section 101.1 to the San Francisco Planning Code, establishing eight priority policies. The eighth policy addresses recreational facilities (American Legal Publishing Corporation, 2017):

> (8) that our parks and open space and their access to sunlight and vistas be protected from development.

Bayview Hunters Point Area Plan

The *Bayview Hunters Point Area Plan* (San Francisco, 2010) encompasses the project site and contains objectives and policies related to improving recreation and open spaces in the Bayview Hunters Point area, particularly the open space facilities along the shoreline. The following objectives and policies are applicable to the proposed project and variant.

Objective 12: Provide and maintain adequately located, well designed, fully equipped recreation facilities and encourage their use.

- **Policy 12.1:** Make better use of existing facilities.
- **Policy 12.1:** Maximize joint use of recreation and education facilities.
- **Policy 12.3:** Renovate and expand Bayview's parks and recreation facilities, as needed.

Objective 13: Provide continuous public open space along the shoreline of Bayview Hunters Point unless public access clearly conflicts with maritime uses or other non-open space uses requiring a waterfront location.

- **Policy 13.1:** Assure that new development adjacent to the shoreline capitalizes on the unique waterfront location by improving visual and physical access to the water in conformance with urban design policies.
- **Policy 13.2:** Maintain and improve the quality of existing shoreline open space.
- **Policy 13.3:** Complete the San Francisco Bay Trail around the perimeter of the City which links open space areas along the shoreline and provides for maximum waterfront access.
- **Policy 13.4:** Provide new public open spaces along the shoreline—at Islais Creek, Heron's Head, India Basin, Hunters Point Shipyard, and Candlestick Point/South Basin.

Bay Trail Plan

The *Bay Trail Plan*, prepared by the Association of Bay Area Governments (ABAG) and adopted in 1989, describes a 400-mile alignment of trail around the perimeter of San Francisco and San Pablo bays (ABAG, 2015). The plan also includes policies that guide selection of trail routes and implementation of the trail system. The plan was prepared by ABAG pursuant to Senate Bill 100, which mandated that the Bay Trail:

- provide connections to existing park and recreational facilities,
- create links to existing and proposed transportation facilities, and
- avoid adverse effects on environmentally sensitive areas.

San Francisco Recreation and Parks Department Project Standards and Design Guidelines

RPD's Project Standards and Design Guidelines were created in 2009 to provide standards for design and maintenance practices to preserve local ecosystems. The guidelines synthesize current practices and new investigations into sustainable design and maintenance, which RPD considers to be mutually interdependent activities (Avril, pers. comm., 2016).

San Francisco Recreation and Parks Department Strategic Plan 2016–2020

RPD's Strategic Plan (RPD, n.d.) discusses the five strategies RPD will take for planning activities between 2016 and 2020. The strategies include inspiring public space, play, investment, stewardship, and the RPD team. The following strategies are applicable to the proposed project and variant:

- **Strategy One: Inspire Public Space** includes objectives to develop more open space to address population growth in high-needs areas and emerging neighborhoods, strengthen the quality of existing parks and facilities, promote good park behavior, and preserve and celebrate historic and cultural resources. Objective 1.1 b) specifically includes a key initiative to "plan, design, construct, and open new parks at India Basin."
- **Strategy Four: Inspire Stewardship** includes objectives to conserve and strengthen natural resources, increase biodiversity and interconnectivity on City parkland, and increasing eco-literacy of park users and park maintenance staff.

San Francisco Recreation and Parks Department Management Plan (Significant Natural Resource Areas)

RPD completed the Significant Natural Resource Areas Management Plan for designated significant natural areas in San Francisco (RPD, 2006). The purpose of the plan, now known as the Natural Resource Management Plan (NRAMP), is to establish a maintenance and preservation program for the protection and enhancement of natural resource values. The Final EIR for the project was certified by the Planning Commission on December 15, 2016, and this certification was upheld by the Board of Supervisors on February 28, 2017. The plan includes a variety of recommendations for improvements in the park, such as restoration, enhancement, and maintenance work.

Chapter 2.0, "Project Description," and Section 3.14, "Biological Resources," describe the habitat improvements proposed by the proposed project and variant for the India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties. These proposed habitat improvements would be consistent with the recommendations contained in the NRAMP.

3.11.3 Impacts and Mitigation Measures

Significance Thresholds

The thresholds for determining the significance of impacts in this analysis are consistent with the environmental checklist in Appendix G of the State CEQA Guidelines, which has been modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the proposed project or the variant would result in a significant impact related to Recreation. Implementation of the proposed project or the variant would have a significant effect on Recreation if the proposed project or variant would:

- increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities may occur or be accelerated,
- include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment, or
- physically degrade existing recreational facilities.

Approach to Analysis

The aforementioned significance thresholds were applied to determine impact significance using a qualitative approach. The following evaluation discusses whether the proposed project or variant would result in direct impacts on recreational resources, such as City parks and related facilities and privately owned publicly accessible recreational resources. Specifically, the evaluation focuses on whether the proposed project or variant would have detrimental impacts on recreational parks and facilities such that the construction of new parks and/or facilities would be necessary.

In determining whether the proposed project or variant would have a significant adverse impact on parks and recreational facilities, this analysis considers the facilities, users, and use level of parks and recreation facilities within an approximately 1-mile radius of the project area; existing facilities, users, and use levels of recreation

facilities in the project area; foreseeable future recreational facilities to be built in the surrounding area; and recreation facilities to be provided as part of the proposed project or variant.

Regarding the demand for future recreation facilities, the analysis assumes that the residential populations associated with the proposed project or variant are the primary demand generators because residents tend to be more intensive users of open space than workers. This is primarily because workers have limited time for engaging in passive and active recreational pursuits, e.g., an office worker is more likely to use open space for passive recreation during lunch periods and has limited opportunities to use open space that is not easily accessible from the workplace. Therefore, it is assumed that new residents under the proposed project would result in higher intensity park usage than the combined effect of both workers and residents under the variant.

Project Features

Both the proposed project and the variant would involve demolishing some of the existing buildings on the project site and constructing a mixed-use development that would include residential, commercial, institutional/educational, research and development, parking, and open space uses. The residential, commercial, institutional/educational, and research and development uses would generate demand for recreational facilities and open space. Both the proposed project and the variant would include the expansion of existing recreational facilities and open space and creation of new facilities and open space.

Impact Evaluation

Impact RE-1: The proposed project or variant would not increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facilities may occur or be accelerated. *(Less than Significant)*

Construction

India Basin Shoreline Park Property

Recreational facilities at India Basin Shoreline Park currently include a picnic area, playground, parking area, and basketball court, and a portion of the Bay Trail. Under the proposed project or variant, the facilities at India Basin Shoreline Park would be removed during Phase 2 of construction. During construction, which is conservatively assumed to last 1 year, portions of the park would be closed to recreation, including use of the boat launch facility for the Bay Water Trail and use of the portion of the Bay Trail that passes through the property. Therefore, park visitors would be displaced to other area parks and trails. RPD intends to start construction at India Basin Shoreline Park after implementing Phase 1 of the project at the 900 Innes property, which would provide some passive recreational open space during Phase 2 construction.

The recreational facilities at India Basin Shoreline Park (playground, picnic area, and basketball court) and the user groups for these facilities are similar to the facilities and user groups for six other recreation sites located within 0.5 to 0.7 mile of the project site (Table 3.11-1). The use of India Basin Shoreline Park is light to moderate (on weekends); several alternative sites are available for the park's recreation activities (using the playground, picnicking, and playing basketball); and those other sites are only moderately used. Therefore, the nearby recreation sites would likely be able to accommodate users temporarily displaced from India Basin Shoreline Park

without resulting in substantial physical deterioration and would be accessible to the public during construction of the proposed project or variant.

During closure of the Bay Trail in India Basin Shoreline Park, visitors desiring a similar trail experience would be displaced to other portions of the Bay Trail, such as farther north between China Basin and Heron's Head Park or farther south at Candlestick Point. No other bicycle trails exist in the project vicinity, although there is a bicycle lane along Hunters Point Boulevard and a bicycle route along Innes Avenue (SFMTA, 2016). The portion of the Bay Trail within India Basin Shoreline Park does not experience a high level of use. Thus, temporary displacement of Bay Trail use to other Bay Trail segments would not be likely to result in substantial physical deterioration of other recreational facilities.

Closing India Basin Shoreline Park to boat launching for the Bay Water Trail or to other boating use would cause visitors to be displaced to other launching areas, such as Islais Creek, the nearest Bay Water Trail launch site. India Basin Shoreline Park does not experience substantial boating use. Thus, temporary displacement of boaters to other publicly accessible launch sites would not be likely to result in substantial physical deterioration of other recreational facilities.

India Basin Open Space Property

Construction of the proposed project or variant could begin as early as spring 2018 and is conservatively anticipated to last 5 years. During this time, the portion of the Bay Trail within the India Basin Open Space property would be closed. Similar to impacts described above for India Basin Shoreline Park, Bay Trail visitors would be displaced to other segments of the Bay Trail in the greater southern shoreline area. Like the Bay Trail segment at India Basin Shoreline Park, the Bay Trail segment within the India Basin Open Space property does not experience a high level of use; the entire open space area is lightly used on weekdays and weekends (Avril, pers. comm., 2016). Therefore, temporary displacement of visitors to other Bay Trail segments would not be likely to result in substantial physical deterioration of other recreational facilities.

The India Basin Open Space property is also lightly used by bird-watchers/naturalists and dog walkers. Heron's Head Park is the closest area also used by both of these user groups and would be the likely area to receive displaced users from the open space area. Heron's Head Park is moderately used (Avril, pers. comm., 2016). Thus, Heron's Head Park would likely be able to accommodate the low number of visitors temporarily displaced from the India Basin Open Space property without resulting in substantial physical deterioration of facilities and would be accessible to the public during construction of the proposed project or variant.

900 Innes and 700 Innes Properties

Because the 900 Innes and 700 Innes properties do not have any existing public recreational facilities and are not used for recreation, construction of the proposed project or variant would not result in the displacement of recreational visitors to these properties or increase the use of existing neighborhood or regional parks or other recreational facilities.

Overall Construction Impact Conclusion

Because of the lack of recreation facilities on the 900 Innes and 700 Innes properties, no effects on recreation would occur at these sites. The temporary displacement of recreationists from the India Basin Shoreline Park and

India Basin Open Space area would not result in substantial physical deterioration of other recreation facilities. Therefore, construction of the proposed project or variant would have a *less-than-significant* impact related to recreation. No mitigation measures are necessary.

Operation

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

The proposed project and variant would not involve any development at these three sites, such as residential or commercial development, that would generate demand for recreational facilities or lead to increased use of existing neighborhood parks or other recreational facilities. New and/or additional recreational facilities and amenities developed at these three sites would include trails (for walking, skating, and biking), basketball courts, beaches, piers, restrooms, a play area, floating dock, and buildings, which would lead to increased use of these facilities and amenities as well as the shoreline. However, the new facilities are anticipated to accommodate and would be designed for this use (see Figures 3.11-2 and 3.11-3) consistent with the Recreation and Open Space Element of the General Plan and the RPD Strategic Plan.

Once the proposed project or variant is complete, the missing segment of the Bay Trail in this area would be complete, allowing for a continuous connection between areas to the north and south. Bicycle paths would also flow through the new development (Figures 2-13a and 2-13b). Substantial physical deterioration of facilities would not be expected to occur at the India Basin Shoreline Park, 900 Innes, or India Basin Open Space property.

700 Innes Property

Either the proposed project or the variant would result in a large increase in the population of potential visitors to existing neighborhood and regional parks and other recreational facilities. However, recreational facilities would be developed on all four project site properties, and would be suitable for all age groups and provide opportunities for a variety of activities. At the 700 Innes property, the Big Green would provide an open area with play areas, a fitness loop, and small gathering spaces (Figure 3.11-3). Because all four project site properties would provide recreational facilities, recreational use of the 700 Innes property by the new population would likely focus primarily on facilities within this property. Recreational use would then radiate out from the site to existing neighborhood and regional parks and other recreational facilities to a lesser extent, given the distance to these other facilities and parks, and the redundancy with facilities provided on the project site. As stated above, the new recreational facilities on the project site would accommodate and be designed for use by the new population of the 700 Innes property, as well as existing users. The proposed project or variant would be designed to allow access and use by the public from nearby or from other parts of the City.

Overall Operation Impact Conclusion

The proposed project or variant would not be anticipated to increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. Therefore, operation of the proposed project or variant would have a *less-than-significant* impact. No mitigation measures are necessary.

Impact RE-2: The proposed project and variant would include recreational facilities, the construction of which would cause significant environmental effects but would not require the construction or expansion of other recreational facilities that might have an adverse effect on the environment. ***(Less than Significant with Mitigation)***

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

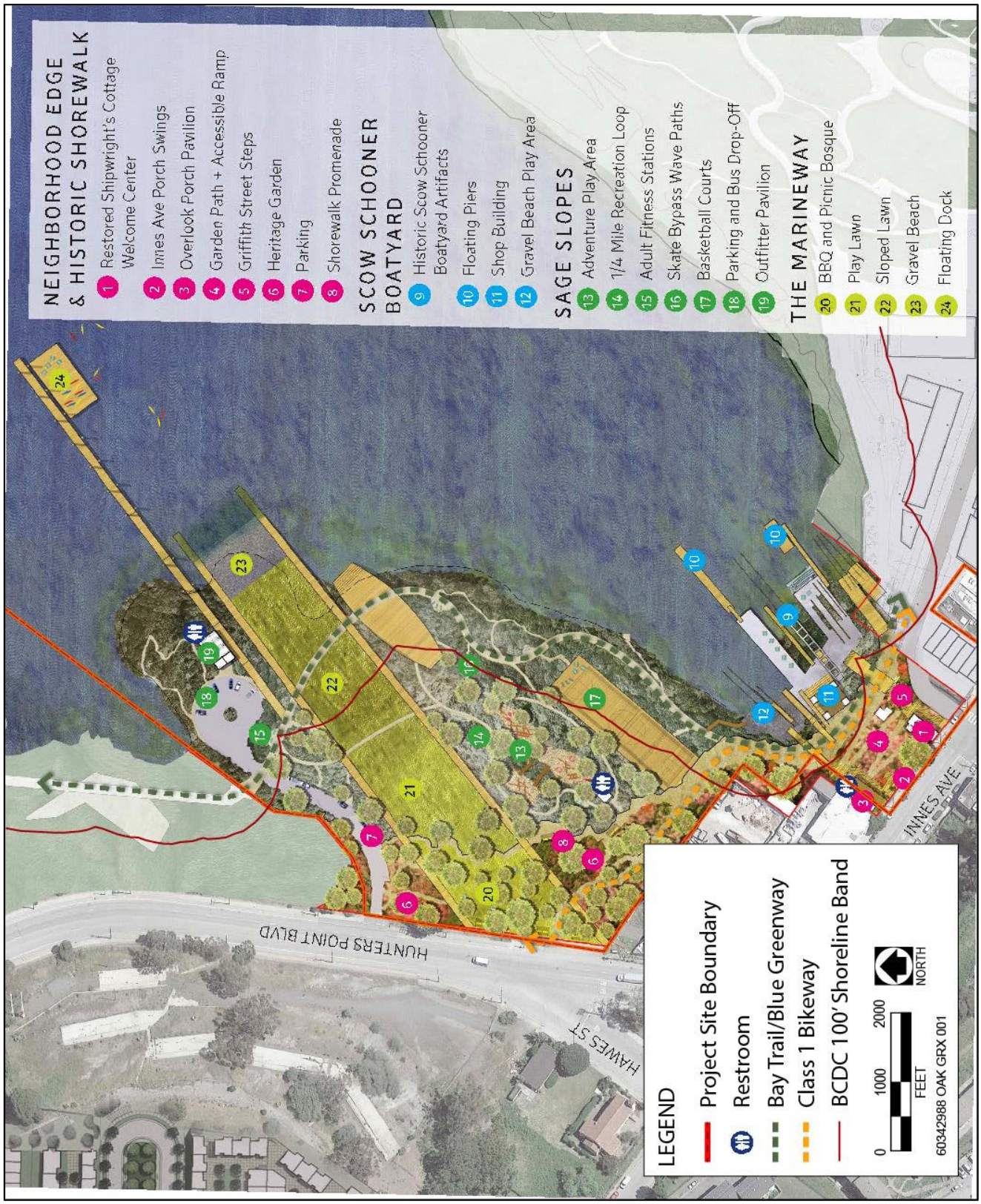
The proposed project and variant would involve developing open spaces and recreational facilities on all four project site properties (see Figures 3.11-2 and 3.11-3). This development would increase recreation opportunities, while improving existing opportunities such as experiencing nature, bird-watching, kayaking, using trails, picnicking, and using playgrounds. The new facilities would enable a broader range of activities including beach use, fishing, biking, skating, boating and other on-water uses, and fitness activities. Construction of these recreational facilities would be phased so that some recreational amenities would be available on the project site throughout implementation of the proposed project or variant. The construction of these facilities would be beneficial, rather than resulting in adverse changes, because the project would improve existing recreational facilities and add new facilities to the site. The proposed project and variant would not require construction of new recreational facilities beyond those included as part of the project.

Temporary physical environmental impacts necessary to construct the recreational facilities that would be part of the proposed project and variant are considered in the analyses of construction-related impacts presented elsewhere in this EIR. These impacts are discussed in Section 3.5, "Transportation and Circulation"; Section 3.6, "Noise"; Section 3.7, "Air Quality"; Section 3.14, "Biological Resources"; and Section 3.15, "Hydrology and Water Quality." Mitigation measures identified in those sections would reduce any significant impacts specifically related to the construction of recreational facilities that are part of the project or variant. Therefore, this construction-related impact would be *less than significant with mitigation.*

Operation

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

As discussed above, the proposed project and variant would involve expanding existing recreational facilities and open space and creating new facilities and open space. Operation of the proposed project or variant would not generate the need to construct recreational facilities beyond those proposed as part of the project or variant. Therefore, *no impact* would occur related to constructing recreational facilities beyond those that are proposed as part of the project or variant. No mitigation measures are necessary.



Sources: Data from RPD, 2016, compiled by AECOM in 2016

Figure 3.11-2. Proposed Recreational Facilities at the India Basin Shoreline Park and 900 Innes Properties

Source: Data from BUILD, Inc., compiled by AECOM in 2016

Figure 3.11-3: Proposed Recreational Facilities at the India Basin Open Space and 700 Innes Properties

Impact RE-3: The proposed project or variant would not physically degrade existing recreational facilities. ***(Less than Significant)***

Construction and Operation

India Basin Shoreline Park Property

The existing recreational facilities at India Basin Shoreline Park would be physically removed during Phase 2 of construction, but would be replaced with new recreational facilities that would enable the same activities (using a playground, picnicking, playing basketball, using skate trails, using the Bay Trail, and kayaking) in a natural setting. The design of the new facilities would be more sustainable (e.g., considering the potential for flooding, sea level rise, maintenance, and connections to other facilities). Adding new facilities would provide recreational activities and opportunities that are not currently available at India Basin Shoreline Park. Therefore, the construction-related impact of physically removing the existing recreational facilities would be offset by the introduction of new facilities that would be in better physical condition than the existing facilities, resulting in a beneficial effect, rather than an adverse change. During project operations, physical degradation of existing recreational facilities would not occur because the existing recreational facilities would no longer be present and would be replaced.

India Basin Open Space Property

The Bay Trail is the only recreational facility on the India Basin Open Space property. The trail segment within the open space would be removed during construction on the India Basin Open Space and 700 Innes properties. However, as at India Basin Shoreline Park, the trail would be replaced with a trail featuring a more sustainable design and amenities that would also be in better physical condition than the existing facility. The existing wetlands and other habitats would be improved, providing a more landscaped, scenic experience. Therefore, the impact of physically removing the existing recreational facility within the India Basin Open Space would be offset by the introduction of new facilities that would be in better physical condition than the existing facilities, resulting in a beneficial effect, as opposed to an adverse change.

During project operations, physical degradation of existing recreational facilities would not occur because the existing recreational facilities would no longer be present and would be replaced.

900 Innes and 700 Innes Properties

Because no recreational facilities currently exist at the 900 Innes and 700 Innes properties, the proposed project and variant would not result in changes to the physical state of recreational facilities on these properties.

Overall Impact Conclusion

Because of the lack of recreation facilities at the 900 Innes and 700 Innes properties, no effects on recreation would occur at these sites. The construction-related impact of physically removing the existing recreational facilities at the India Basin Shoreline Park and India Basin Open Space properties would be offset by introducing new replacement facilities that would be in better physical condition than the existing facilities; this would result in a beneficial effect, rather than an adverse change. As such, construction of the proposed project or variant would have a less-than-significant impact related to physical degradation of existing recreation facilities. During

project operations, no impact would occur at the India Basin Shoreline Park and India Basin Open Space properties related to physical degradation of existing recreational facilities because the recreational facilities would be enhanced with new replacement amenities. Therefore, the overall impact related to physical degradation of existing recreation facilities would be *less than significant.* No mitigation measures are necessary.

3.11.4 Cumulative Impacts

Impact-C-RE-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would not substantially contribute to cumulative impacts related to recreation. *(Less than Significant)*

The geographic scope for cumulative impacts on recreation is the project vicinity, which includes proposed development projects within approximately 1 mile of the project site and existing and proposed recreational facilities on and within approximately 1 mile of the project site.

Implementation of the cumulative development projects would increase the residential and employment-related populations in the project vicinity. This population increase would increase the demand for recreational facilities and would necessitate the construction of new or expansion of existing recreational facilities, including those on the project site. Transportation improvements in the project vicinity could also encourage visitors to travel to the project site and increase the use of the recreational facilities on the project site. Construction of additional Bay Trail segments would provide longer trail opportunities for residents and employees of and visitors to the project site. In addition, a new 12.8-acre public park, Northside Park, would provide recreational facilities and open space in the general area as part of the Candlestick Point–Hunters Point Shipyard Phase II Development Plan Project (San Francisco, 2010).

The new recreational facilities on the project site would accommodate and be designed for use by residents and employees of the project site, as well as visitors from surrounding neighborhoods and other parts of San Francisco. The City has accounted for such growth as part of the Recreation and Open Space Element of the General Plan (San Francisco, 2014). In addition to the new Northside Park, San Francisco voters passed two bond measures, in 2008 and 2012, to fund the acquisition, planning, and renovation of the City's network of recreational resources, which will provide additional recreation facilities and opportunities in the City. Therefore, the proposed project or variant would not combine with past, present, or reasonably foreseeable future projects to create a significant cumulative impact related to recreation. This impact would be *less than significant.* No mitigation measures are necessary.

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3.12 UTILITIES AND SERVICE SYSTEMS

This section describes the existing environmental and regulatory setting related to utilities and service systems and addresses the potential impacts of the proposed project and variant. Additional information supporting the analysis of utilities and service systems is presented in Appendix J of this EIR. Comments regarding utilities, trash, recycling, and composting were received during the public scoping period in response to the Notice of Preparation. These comments are addressed in this section.

3.12.1 Environmental Setting

Water

Water Source and Supply

San Francisco

The San Francisco Public Utilities Commission's (SFPUC's) Hetch Hetchy Regional Water System (RWS) currently provides an average of approximately 198 million gallons per day (mgd) of water to 2.6 million users in San Francisco, Tuolumne, San Joaquin, Alameda, Santa Clara, and San Mateo counties (SFPUC, 2016a). Approximately 85 percent of the water delivered by SFPUC comes from the Tuolumne River watershed, collected in Hetch Hetchy Reservoir in Yosemite National Park. Water from Hetch Hetchy Reservoir travels through the Hetch Hetchy Water and Power Project and represents the majority of the water supply available to San Francisco. The remaining 15 percent of the water for the RWS is obtained from local surface waters in the Alameda and Peninsula watersheds and is stored in San Francisco Bay Area reservoirs (Calaveras, San Antonio, Crystal Springs, San Andreas, and Pilarcitos reservoirs). These local watershed facilities are operated to conserve local runoff for delivery.

In addition to providing water from the RWS, SFPUC also supplies to its San Francisco customers a small portion of locally-produced groundwater, which is used primarily for irrigation at local parks and on highway medians. San Francisco is located atop all or part of seven unadjudicated groundwater basins. All of the basins except the Westside and Lobos basins are generally inadequate to supply a significant amount of groundwater for municipal supply because their yields are low (SFPUC, 2016a).

The Westside Groundwater Basin is the largest groundwater basin in San Francisco. This basin is currently used to meet water demands for some irrigation and nonpotable water needs in Golden Gate Park and the San Francisco Zoo; it has not been adjudicated or identified as overdrafted by the California Department of Water Resources (DWR) (SFPUC, 2016a). The San Francisco Groundwater Supply Project, for which construction was completed in early 2017, involved constructing six deep well pumping stations to extract up to 4 mgd of water from the Westside Groundwater Basin, as well as more than 5 miles of pipelines to distribute the groundwater to in-City reservoirs for blending with the municipal drinking water supply and emergency drinking water supplies (SFPUC, 2016a and 2017a).

A small percentage of San Francisco's water. Recycled water supply is sourced from recycled water. Recycled water is currently used primarily for golf course irrigation in some parts of San Francisco. In addition, recycled water produced by the Southeast Treatment Plant (also known as the Southeast Water Pollution Control Plant) is

used for wash-down operations at the Plant, as well as for soil compaction, dust control, landscape irrigation, street cleaning, and sewer flushing throughout the City. Actual use of recycled water in 2015 was approximately 0.3 mgd (SFPUC, 2016a). The Westside Recycled Water Project will provide irrigation water to replace the existing groundwater and RWS sources used on the west side of the City. This project is expected to begin making deliveries in 2020 and will provide an annual average of 1.6 mgd. In addition, the Eastside Recycled Water Project will provide up to 2 mgd (annual average) of recycled water to portions of the east side of the City for nonpotable irrigation, commercial, and industrial users.

Alternate water sources also now may be used in San Francisco for approved nonpotable use. The Nonpotable Water Ordinance calls for the onsite collection, treatment, and use of alternate water sources for nonpotable applications and for district-scale water systems to share nonpotable water. In July 2015, the ordinance was amended to mandate the installation of on-site water systems to treat and reuse available alternate water sources for toilet flushing and irrigation in new developments that meet specified criteria. The use of onsite alternate water sources serves to offset demands for potable water, with a cumulative projected potable-water offset of 0.4 mgd by 2040 (SFPUC, 2016a). This potable-water offset is part of SFPUC's water supply portfolio in the 2015 Urban Water Management Plan (UWMP) for the City.

During normal precipitation years, the RWS is projected to have adequate water supplies to meet service area demands through 2040. In a single dry year, SFPUC projects to have sufficient supplies to meet demands for potable water through 2040; however, during a multiple-year drought, SFPUC would experience shortages in deliveries in 2040 without development of additional water supplies (SFPUC, 2016a).

Each year, SFPUC evaluates the amount of total water storage expected to occur throughout the RWS. SFPUC may impose delivery reductions or rationing in accordance with its Retail Water Storage Allocation Plan, if projected total water storage is less than what has been identified as necessary to provide sustained deliveries during drought conditions. SFPUC implemented customer water rationing during the 1987–1992 drought and more recently on irrigation customers in 2015-2016 during the recent drought. At the beginning of 2014, SFPUC called on all customers to voluntarily reduce water use by at least 10 percent system-wide. Later in the year, SFPUC called for mandatory reductions of retail potable-water use for outdoor irrigation by 10 percent and then by 25 percent in the summer of 2015. The voluntary 10 percent system-wide water use reduction (compared to 2013 use) in place because of continued drought conditions was lifted in April 2017 (SFPUC, 2017b).

Project Site

Potable water supply is currently available from and supplied by SFPUC via a domestic water main in Innes Avenue. Recycled water is not a current source of nonpotable water at any of the project site properties.

Water Treatment

San Francisco

All San Francisco water derived from sources other than Hetch Hetchy Reservoir is treated at one of two water treatment plants: the Sunol Valley or Harry Tracy Water Treatment Plant. The Sunol Valley Water Treatment Plant treats water primarily from the Alameda System reservoirs and has both a peak capacity and a sustainable

capacity of 160 mgd. The Harry Tracy Water Treatment Plant treats water from the Peninsula System reservoirs and has a peak capacity of 180 mgd and a sustainable capacity of 140 mgd.

Project Site

No water treatment currently occurs at the project site.

Water Distribution

San Francisco

Water from the RWS is distributed in San Francisco through a local low-pressure distribution system that is owned by SFPUC and maintained by San Francisco Public Works (SFPW). The water distribution system includes 10 reservoirs and eight water tanks that store the water delivered by the RWS. Its 17 pump stations and approximately 1,250 miles of pipelines deliver water to residences and businesses throughout San Francisco. Water provided to the east side of the City is fed by two pipelines, one that terminates at Sunset Reservoir and the other at Merced Manor Reservoir. The Water System Improvement Program is nearly complete and includes improvements to the local distribution system, including seismic improvements to many of the pump stations and upgrades to reservoirs.

Project Site

Potable water supply is currently distributed by SPFUC in the project vicinity via a 16-inch main in Innes Avenue. Two fire hydrants are located along the Innes Avenue frontage, at the intersections of Innes Avenue with Arelious Walker Drive and Earl Street.

Water Demand

San Francisco

The California Urban Water Management Act of 1983 (Water Code Sections 10610–10657) requires that all urban water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually prepare a UWMP. These plans were first submitted to DWR in 1985; updated plans must be submitted to DWR every 5 years. On June 14, 2016, SFPUC adopted the 2015 UWMP for the City. SFPUC is committed to meeting its contractual obligation to its wholesale customers of 184 mgd and its delivery reliability goal of 265 mgd, with no greater than 20 percent rationing in any 1 year of a drought (SFPUC, 2016a). The UWMP forecasts an increase in in-City water demand as a result of San Francisco's estimated 1.0 percent average growth rate per year through 2040 in addition to the growth of nonresidential users (SFPUC, 2016a).

Actual water demands in 2015 in San Francisco included 14.5 mgd for single-family residential uses, 22.2 mgd for multifamily residential uses, 23.6 mgd for nonresidential uses, and 5.3 mgd of water loss,[1] for a total of 65.6 mgd citywide (SFPUC, 2016a:4–5). That total is projected to increase to 84.9 mgd by 2040. The overall

[1] Water loss is the difference between the quantity of water supplied to customers and the quantity of water actually consumed by customers. It consists of apparent losses (e.g., firefighting, pipe flushing, street cleaning, inaccuracies associated with customer metering, and theft or illegal use) and water that is physically lost as a result of distribution system leaks, breaks, overflows, and other unbilled, unauthorized consumption (i.e., real losses).

water demand in San Francisco has continued to decline, in large part because of increasingly more efficient plumbing fixtures. However, water demand projections indicate that by around 2018, total potable-water demand will reach a point at which conservation savings will no longer outpace anticipated population and job growth. Thus, demand is forecasted to increase steadily through 2040 for a total projected increase of 29 percent. (SFPUC, 2016a.)

SFPUC's demand management measures range from financial incentives for plumbing devices to improvements in the efficiency of system distribution. The conservation programs implemented by SFPUC are based on the California Urban Water Conservation Council's list of 14 best management practices (BMPs) identified by signatories of the *Memorandum of Understanding Regarding Urban Water Conservation in California*, executed in 1991. The 14 BMPs have since been updated and reorganized.

SFPUC recently completed the *2015 Retail Water Conservation Plan* (Water Report) (SFPUC, 2015). The Water Report presented an analysis performed to project SFPUC's daily per capita water use, taking into consideration the impact of population and employment growth, as well as passive and active conservation efforts. The analysis projected that, with its continued water conservation program, SFPUC's per capita water use in 2020 would be approximately 86 gallons per capita per day (GPCD), indicating that it is also on track to meet the final 2020 target of 96 GPCD.

Project Site

Table 3.12-1 summarizes existing water demands at the four project site properties. The total potable-water demand is 2,747 gallons per day (gpd) (3 gallons per minute); there is currently no demand for recycled water.

Table 3.12-1: Existing Water Demands

Land Use	Average Daily Demand (gpd)	Average Daily Demand (gpm)
Residential	750	1
Commercial/Retail	1,997	2
Total Existing Water Demand	2,747	3

Notes:
gpd = gallons per day; gpm = gallons per minute
Source: BKF, 2016

India Basin Shoreline Park Property

The India Basin Shoreline Park property utilizes domestic water service for landscape irrigation. No other existing water demands are associated with this property (MKA, 2016).

900 Innes Property

No current water demands are associated with the 900 Innes property.

India Basin Open Space Property

No current water demands are associated with the India Basin Open Space property.

700 Innes Property

Based on the existing square footage and uses of the buildings at the 700 Innes property (residential and commercial/retail), there is an assumed low level of existing potable-water demand, 2,747 gpd (BKF, 2016).

Wastewater and Stormwater

Wastewater and Stormwater Generation

San Francisco

When rain flows over land or impervious surfaces such as paved streets, parking lots, and building rooftops and does not soak into the ground, it creates stormwater runoff. Paved surfaces such as streets, buildings, and parking lots cover most of San Francisco, thus preventing rainwater from slowly infiltrating into the ground. Instead, stormwater runoff travels rapidly over these paved areas, and picks up pollutants like oil, bacteria, and debris before entering the combined sewer system (San Francisco, 2017).

Project Site

Stormwater is generated at the project site when it rains and water flows over impervious surfaces (e.g., the parking lot at India Basin Shoreline Park, streets), over the land (e.g., India Basin Open Space), and on building rooftops, such as those at the 900 Innes and 700 Innes properties, and either flows into the combined sewer system or overland flows to San Francisco Bay (Bay).

Wastewater and Stormwater Collection

San Francisco

San Francisco wastewater service is provided by SFPUC. Although the City is served almost exclusively by combined sewers that handle both wastewater and stormwater runoff in a single system, small areas of the City are served by separate storm sewer systems.

Project Site

The India Basin Shoreline Park property, the northern tip of the 900 Innes property, and the portion of the 700 Innes property centered around Arelious Walker Drive are located in the municipal separate storm sewer system (MS4) area of the City (see Figure 3.15-1, "Project Site Hydrologic Features," in Section 3.15, "Hydrology and Water Quality"). The India Basin Open Space property is not identified by the City as being located in the separate sewer area, as it does not have any wastewater generation or existing utility infrastructure.

Wastewater that flows from the project site is transported via gravity connections to Innes Avenue sewer facilities (Wistrom, pers. comm., 2016). Sewer pipes in the project vicinity run along Hunters Point Boulevard, along Innes Avenue, and up through the 700 Innes property along Arelious Walker Drive (SFPUC, 2013). Although known sewer infrastructure exists within Arelious Walker Drive, there are no known connections to this infrastructure. The Hudson Avenue Pump Station and combined sewer discharge outfall No. 38 (Hudson Avenue) are located along Hudson Avenue at Hunters Point Boulevard.

Most (90 percent) of San Francisco is served by a combined sewer system, but the project site is served mainly by a separate storm sewer. Stormwater that enters storm drains flows directly to receiving waters—the Bay in this case. The project area is under SFPUC's jurisdiction for wastewater and stormwater (Wistrom, pers. comm., 2016).

India Basin Shoreline Park Property

There is no direct sanitary sewer connection to the City's combined sewer system on the India Basin Shoreline Park property. Restroom service is provided via portable toilets.

The India Basin Shoreline Park property is located in the City's separate storm sewer area. There is one existing storm drain inlet within the road turnaround on the property. Stormwater that enters this drain inlet is conveyed to an outfall that discharges to the Bay. Some portions of the property direct overland flow[2] toward this inlet, while the remainder of the property directs overland flow directly to the shoreline of the Bay. A combined sewer overflow pipe runs under Hudson Avenue and beneath the property, but the property is not connected to it (MKA, 2016).

900 Innes Property

There are no current sanitary sewer demands on the 900 Innes property. However, the Shipwright's Cottage (and potentially other buildings) may have utilized municipal sewer service when they were in service in the past. A City wastewater line that runs through a portion of the 900 Innes property seems to be in a location that could have allowed for gravity collection from the Shipwright's Cottage and some of the other nearby on-site buildings (MKA, 2016).

Drainage from the 900 Innes property directs sheet water flow to the shoreline and discharges into the Bay. Although this property is not currently mapped in the City's Geographic Information System as part of the separate sewer area, SFPUC has indicated that this is because it has no inlet/outlet infrastructure (MKA, 2016). As described for the India Basin Shoreline Park property, a combined sewer overflow pipe in Hudson Avenue crosses the property and then outfalls within the 900 Innes property. The 900 Innes property, however, is not connected to the pipe.

India Basin Open Space and 700 Innes Properties

The India Basin Open Space and 700 Innes properties are currently serviced by the City's combined sewer system for wastewater generated on the properties. There is an existing combined sewer in Innes Avenue with a flow direction of southeast to northwest. The size of the pipe varies: southeast of Arelious Walker Drive, it is a 21-inch-diameter trunk line, and northwest of Arelious Walker Drive, the pipe is 30 inches in diameter. Laterals of varying size (6–12 inches) connect to the trunk line via manholes from adjacent properties along the street.

The combined sewer system on the 700 Innes property was installed for a prior development plan on the site that was never built. Subsequently, the City never accepted this infrastructure and it remains private (i.e., not maintained by SFPW). Nothing is known to connect to the sewer infrastructure within Arelious Walker Drive. Existing sewer infrastructure includes a combined 12-inch gravity sewer running beneath Arelious Walker Drive

[2] Overland flow is runoff that exceeds the infiltration capacity of the soil and flows over the land surface downward toward a river or a local depression in the topography.

that flows southwest to northeast, the remains of a combined sewer pump station at the northeast end of the Arelious Walker Drive cul-de-sac, and two combined sewer force mains (6-inch and 14-inch) running back up to the City's sewer main on Innes Avenue. Details of pipe inverts and connections are unknown, but the infrastructure is not currently in use.

The 700 Innes property is located in the separate sewer area and has its own existing stormwater outfall to the Bay. The only stormwater improvements at the site are a series of catch basins and a 12-inch storm drain line in Arelious Walker Drive, which flows downhill to an assumed pump station inside a locked/fenced area adjacent to the Bay (the existence of the pump station was not confirmed). It is assumed that a 14-inch force main conveys stormwater up to the Innes Avenue sewer at the intersection with Arelious Walker Drive. Any stormwater flows that cannot be accommodated by the pump station likely exit via an overflow structure and spill-down structure and would flow toward the nearby shoreline embankment and into the Bay. Because the Arelious Walker Drive storm drain system is currently the only existing stormwater facility at the site, most rainfall either is absorbed into the soil or runs off the site as overland sheet water flow into the Bay (Sherwood, 2016a). In addition to the storm drain infrastructure within Arelious Walker Drive, two small culvert outfalls flow toward the Bay, draining through the undeveloped portions of the India Basin Open Space and 700 Innes properties.

Wastewater and Stormwater Treatment

San Francisco

SFPUC owns and operates three wastewater treatment facilities for San Francisco: the Southeast Treatment Plant, the Oceanside Treatment Plant, and the North Point Wet-Weather Facility. These treatment facilities collect and treat an average of 80 mgd of combined wastewater and stormwater runoff on non-rainy days and can collect and treat up to 575 mgd when it rains (SFPUC, 2014a).

The Southeast Treatment Plant, built in 1952, receives 80 percent of the City's combined sewer flows, treating an average of 60 mgd and up to 250 mgd during rainstorms (SFPUC, 2014a). The Southeast Treatment Plant has a dry-weather design capacity of 85.4 mgd (San Francisco Bay RWQCB, 2013:F-5). As part of the Sewer System Improvement Program (SSIP), a 20-year, multibillion-dollar citywide investment to upgrade failing infrastructure and ensure the reliability and performance of the sewer system, the Southeast Treatment Plant is undergoing operational improvements and seismic upgrades.

Dry-weather effluent flows from the Southeast Treatment Plant undergo secondary treatment before being discharged to the Bay through the Pier 80 Outfall. During wet-weather conditions, the Bayside Wet-Weather Facilities (storage/transport structures, outfalls, pump stations) provide storage and treatment that is equivalent to wet-weather primary treatment. During wet weather, the underground transport tunnels provide a total storage capacity of approximately 120 million gallons, while pumps continue to transfer combined wastewater and stormwater to the Southeast Treatment Plant. If the capacities of the Southeast Treatment Plant, North Point Wet-Weather Facility, and Bayside Wet-Weather Facilities storage/transport structures are exceeded, the combined stormwater and sewage receives the equivalent of wet-weather primary treatment in the transport structures/boxes, then is discharged into the Bay through any one of the 29 shoreline combined sewer overflow (CSO) structures. The outfalls associated with these CSO structures are very-wide-diameter pipes or box culverts. All solids that settle out in the storage/transport structures are flushed to the Southeast Treatment Plant after the rainstorm

subsides. The level of treatment provided throughout San Francisco meets the minimum treatment specified by the U.S. Environmental Protection Agency (EPA) CSO Control Policy (San Francisco Bay RWQCB, 2013).

Project Site

Wastewater flows from the project site are limited to the India Basin Open Space and 700 Innes properties. Wastewater from these properties is transported to SFPUC's combined sewer system via gravity connections to Innes Avenue sewer facilities and then to the Southeast Treatment Plant, located on Phelps Street near Third and Evans streets in the Bayview District (Wistrom, pers. comm., 2016).

San Francisco Emergency Firefighting Water System

San Francisco

The San Francisco Emergency Firefighting Water System, referred to in this section as the Auxiliary Water Supply System (AWSS), is used for the suppression of multiple-alarm fires and for fire suppression during a major earthquake. The system delivers water at high pressure and consists of a storage reservoir, tanks, cisterns, water mains and hydrants, emergency saltwater pump stations, and fireboats (SFPUC, 2014b and 2017c). The AWSS is an independent system, owned and operated by SFPUC, that is used exclusively by the San Francisco Fire Department for firefighting (SFPUC, 2014b). The system is currently being seismically upgraded with funding from the Earthquake Safety and Emergency Response Bond that was approved in June 2010 (SFPUC, 2017c).

Project Site

Existing AWSS infrastructure is currently not available along Innes Avenue within the project site. The adjacent Candlestick Point–Hunters Point Shipyard Development plans to install AWSS infrastructure in Innes Avenue to Earl Street in the future.

3.12.2 Regulatory Framework

Federal

Clean Water Act (National Pollutant Discharge Elimination System)

The Clean Water Act (CWA) was enacted in 1972 to regulate the discharge of pollutants to receiving waters such as oceans, bays, rivers, and lakes. The objective of the act is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" by regulating discharges of pollutants into the waters of the United States. The major federal legislation governing stormwater quality, the CWA established a two-phase plan to regulate runoff of polluted stormwater under the National Pollutant Discharge Elimination System (NPDES). EPA is the lead federal agency responsible for water quality management and is authorized to implement pollution control programs such as setting wastewater standards for industry. The CWA also requires that water quality standards be set for all contaminants in surface waters.

Safe Drinking Water Act

Originally enacted in 1974, the Safe Drinking Water Act aimed to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and groundwater wells. The Safe Drinking Water Act authorizes EPA to set national health-based standards for drinking water to protect against both naturally occurring and human-made contaminants that may be found in drinking water. Implementation and enforcement of both the federal and California Safe Drinking Water Acts are under the jurisdiction of the California Department of Public Health, Division of Drinking Water and Environmental Management. Drinking water regulations are set forth in the California Code of Regulations, Titles 17 and 22.

Federal Combined Sewer Overflow Control Policy

In 1994, EPA adopted the CSO Control Policy (50 *Federal Register* 18688, April 11, 1994), which established a two-phase control program for communities with combined sewer systems. In the first phase of this program, communities receiving permits from EPA for their combined sewer systems must implement a series of nine technology-based controls designed to reduce the frequency of CSOs and limit their effects on receiving waters. In the second phase, permit recipients also must either:

- ensure that, on average, no more than four CSO events will occur per year;
- provide primary treatment (remove floatables and settleable solids) for at least 85 percent of the total discharge; or
- remove enough pollutants before they enter the sewer system to prevent degradation of receiving waters.

In 1997, San Francisco completed the improvements identified in the City's wastewater master plan, bringing the City into compliance with EPA's CSO Control Policy. These improvements consisted mainly of constructing storage culverts and installing discharge weirs (e.g., screens) and skimmers at all CSO outlets. The added storage reduced the frequency of CSOs, and the discharge facilities allow the City to provide at least primary treatment for 100 percent of its stormwater and wastewater discharges. Therefore, although the City averages approximately 10 CSOs each year, it is currently in compliance with the CSO Control Policy as a result of the removal of solids and the primary treatment provided.

State

Urban Water Management Planning Act

The Urban Water Management Planning Act (California Water Code, Section 10610 et seq.) was originally enacted in 1983 with the passage of Assembly Bill 797 (Chapter 1009, Statutes of 1983) and was subsequently amended. This law applies to urban water suppliers that serve 3,000 or more customers or provide more than 3,000 acre-feet of water annually. The Urban Water Management Planning Act states that such water suppliers should endeavor to ensure that their water service is reliable enough to meet the needs of their various categories of customers during normal, dry, and multiple dry years. The law also describes how urban water suppliers should adopt and implement urban water management plans. On June 14, 2016, SFPUC adopted the 2015 UWMP for the City and County of San Francisco, which includes the project site.

State Water Resources Control Board

The State Water Resources Control Board (SWRCB) and nine regional water quality control boards (RWQCBs) address water quality and regulate water rights. Created by the California Legislature in 1967, the five-member SWRCB protects water quality by setting statewide policy, coordinating and supporting RWQCB efforts, and reviewing petitions that contest RWQCB actions. The SWRCB is also solely responsible for allocating surface water rights. Each RWQCB makes critical water quality decisions for its region, including setting standards, issuing waste discharge requirements, determining compliance with those requirements, and taking appropriate enforcement actions. The proposed project and variant would fall under the wastewater treatment requirements of San Francisco Bay RWQCB. On April 7, 2015, the State Water Board adopted what are referred to as the 'trash amendments' to provide statewide consistency for the SWRCB's "regulatory approach to protect aquatic life and public health beneficial uses, and reduce environmental issues associated with trash in state waters, while focusing limited resources on high trash generating areas" (SWRCB, 2017). The 'trash amendments' include an Amendment to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) to Control Trash and Part 1 Trash Provision of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries (ISWEBE Plan).

California Health and Safety Code

Section 64562 of the California Health and Safety Code establishes water supply requirements for service connections to public water systems. Before additional service connections can be permitted, enough water must be available to the public water system from its water sources and distribution reservoirs to adequately, dependably, and safely meet the total requirements of all water users under maximum-demand conditions.

Senate Bill 610 and Senate Bill 221

Through Senate Bill 610 (California Water Code, Sections 10910–10915), the State of California requires that a jurisdiction prepare a water supply assessment (WSA) for development projects that meet certain criteria, including projects that create demand for 500 or more housing units, have more than 500,000 square feet (sq. ft.) of shopping center/business establishment floor space, or have more than 250,000 sq. ft. of commercial office building floor space. SFPUC prepared a WSA for the proposed project and variant (see Appendix J).

Water Conservation Act (Senate Bill X7-7)

The Water Conservation Act of 2009, also known as Senate Bill X7-7, requires the State to set a goal of reducing urban water use by 20 percent by the year 2020. Each retail urban water supplier must determine baseline water use during its baseline period, as well as its target water use for the years 2015 and 2020 to help the State achieve the 20 percent reduction. SFPUC has an interim per capita water use target of 101 GPCD and a 2020 target of 96 GPCD.

Local

San Francisco Green Building Ordinance

To minimize the use and waste of energy, water, and other resources in the construction and operation of buildings, to provide a healthy indoor environment, and to reduce greenhouse gas emissions, in 2008 the Board of Supervisors adopted the Green Building Ordinance, which applies to newly constructed residential and commercial buildings and renovations to existing buildings. The ordinance specifically requires a minimum reduction of 30 percent in potable-water use for high-rise residential, mid-size commercial, and large commercial buildings, and a minimum reduction of 50 percent in the use of potable water for landscaping for all of these building types.

San Francisco Sewer System Master Plan

An update to the San Francisco Sewer System Master Plan (SSMP), a comprehensive plan that charts the long-term vision and strategy for the City's management of wastewater and stormwater for the next 20 years, was completed in 2009. Rather than considering the sewer system in isolation, the plan states that "Integrated Urban Watershed Management" should be used as the basis for implementation, which means using the drainage basin as the central planning unit and incorporating opportunities for sustainable solutions such as through the use of Low Impact Development (LID). The guiding principles for the SSMP are to:

- protect public health and safety, and the environment;
- ensure the long-term sustainability of the sewer system;
- strive to ensure that all sectors of the community are protected from nuisances associated with the sewer system and that no community bears a disproportionate share of the negative environmental consequences resulting from system operations; and
- promote environmental stewardship that includes the sustainable use of natural resources.

Through implementation of the SSIP, major capital projects are being planned, designed, and constructed to address the challenges presented in the SSMP.

San Francisco Health Code Article 12C (Nonpotable Water Ordinance)

The Onsite Water Reuse for Commercial, Multi-family, and Mixed Use Development Ordinance, commonly known as the Nonpotable Water Ordinance was adopted in September 2012. This ordinance added Article 12C to the San Francisco Health Code. The Nonpotable Water Ordinance allows the collection, treatment, and use of alternate water sources (e.g., rainwater, stormwater, gray water, foundation drainage, black water) for nonpotable applications and for sharing of nonpotable water by district-scale water systems.

Article 12C was amended in July 2015 to mandate that beginning November 1, 2015, all new development projects of 250,000 sq. ft. or more of gross floor area located in San Francisco's designated recycled-water-use areas, as defined by the Recycled Water Ordinance, must install on-site water systems to treat and reuse available alternate water sources for toilet and urinal flushing and irrigation. This requirement expanded to the entire City

the following year, on November 1, 2016. The 2015 UWMP considered this potable-water offset to be part of SFPUC's water supply portfolio (SFPUC, 2016a:6-17). The project site is located in the recycled-water-use area.

San Francisco Stormwater Management Plan

The City developed a stormwater management plan (SWMP) in 2004 to comply with the NPDES General Permit for Small MS4s (Order No. 2003-0005-DWQ, as amended by 2013-0001-DWQ), which enables the City to comply with the CWA in those areas of the City that are served by separate storm sewer systems. The SWMP describes specific programs to be implemented to minimize stormwater pollution in these areas.

Waterfront properties on the east side of San Francisco that are owned and operated by the Port of San Francisco (SF Port) are also served by separate storm sewer systems. SF Port has developed its own SWMP to address MS4 areas on SF Port properties. However, stormwater from the project site is currently managed under SFPUC's SWMP (SFPUC, 2010:3 [Figure 1]; Wistrom, pers. comm., 2016). SFPUC and SF Port staff work closely and coordinate where feasible on development and implementation of SWMP programs. To set up a framework for coordination between SFPUC and SF Port, the agencies have developed a memorandum of understanding for interagency coordination on stormwater management issues (SFPUC, 2010:2).

A stormwater management program for small MS4s must consist of six elements that, when implemented in concert, are expected to result in substantial reductions of pollutants discharged into receiving water bodies. These six elements, termed "minimum control measures," are as follows:

- Public education
- Public involvement and participation
- Illicit discharge detection and elimination
- Construction site runoff control
- Postconstruction stormwater management in new development and redevelopment
- Pollution prevention/good housekeeping for municipal operations

The SWMP requires control of stormwater runoff from construction sites to reduce pollutants in storm sewer systems from construction sites. The NPDES Phase II General Permit for Small MS4s requires the City to:

- adopt, maintain, and enforce an ordinance, policy, or other regulatory mechanism to require erosion and sediment controls at the construction sites, as well as sanctions to ensure compliance;
- develop and implement requirements for construction site operators to implement appropriate erosion and sediment control BMPs;
- develop and implement requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts on water quality;
- develop and implement procedures for site plan review, which incorporate consideration of potential water quality impacts;
- develop and implement procedures for receipt of and response to information submitted by the public regarding stormwater runoff impacts of construction projects; and

- develop and implement procedures for site inspection and enforcement of control measures.

The SWMP also requires postconstruction stormwater management for new development and redevelopment to reduce, long term, the type and quantity of pollutants in urban stormwater runoff, and the quantity of water delivered to water bodies during storms after construction. The NPDES Phase II General Permit for Small MS4s requires the City to:

- develop, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb areas greater than or equal to 1 acre, including projects less than 1 acre that are part of a larger common plan of development or sale, that discharge into a small MS4 by ensuring that controls are in place that would prevent or minimize water quality impacts;
- adopt and enforce an ordinance, policy, or other regulatory mechanism that requires projects to include long-term operation and maintenance of appropriate BMPs to address postconstruction runoff;
- develop and implement strategies that include a combination of structural and/or nonstructural BMPs appropriate for the community; and
- ensure adequate long-term operation and maintenance of BMPs.

Finally, the SWMP sets forth a process to be applied to the review of development site plans to address long-term water quality issues and postconstruction impacts of proposed land uses. The entire project site is proposed to be operated in the separate sewer-stormwater area.

San Francisco Stormwater Management Ordinance

SFPUC administers a stormwater management program developed in accordance with the CWA. Effective May 22, 2010, and updated in May 2016, the San Francisco Stormwater Management Ordinance requires new projects and redevelopment projects to manage stormwater using green infrastructure (i.e., stormwater controls or BMPs) and to maintain that green infrastructure for the lifetime of the project. As stated in the Stormwater Management Ordinance, the *San Francisco Stormwater Management Requirements and Design Guidelines* (SMR), updated in May 2016, apply to development or redevelopment projects that would:

- create and/or replace 5,000 sq. ft. or more of impervious surface in combined and separate sewer areas (considered large projects) or
- create and/or replace 2,500–5,000 sq. ft. or more of impervious surface in separate sewer areas only (considered small projects).

Applicable performance requirements differ for projects in the separate sewer system (Chapter 6 of the SMR) relative to those in the combined sewer system. Small projects must implement at least one site design measure, as described in the SMR (e.g., permeable pavement, green roof, vegetated swale, rainwater harvesting) and submit the estimated runoff reduction volume using the SWRCB Stormwater Multiple Application and Report Tracking System calculator. Large projects in the separate sewer area must meet the following stormwater performance requirement:

- Projects within SFPUC jurisdiction must manage the 90th-percentile, 24-hour storm.

Large projects must submit a preliminary and final stormwater control plan to SFPUC for review and approval, demonstrating how the project will meet the performance requirements, and must complete, sign, and record a maintenance agreement committing to ongoing stormwater management maintenance in perpetuity. The proposed project or variant would need to comply with the City's Stormwater Management Ordinance.

San Francisco Public Works Code (Temporary Construction Dewatering)

Under Article 4.1 of the San Francisco Public Works Code, discharges to the combined sewer system from temporary dewatering of construction sites are regulated by the Batch Wastewater Discharge Permit issued by SFPUC. As such, project applicants must obtain a batch wastewater discharge permit from SFPUC before the start of groundwater dewatering to the combined sewer system. SFPUC imposes specific permit terms and conditions to maintain its compliance with its wastewater discharge permit issued by the San Francisco Bay RWQCB. Under the batch wastewater discharge permit, the discharge must meet specific numeric effluent limitations for toxic and conventional pollutants, and monitoring is required to ensure compliance. Any construction dewatering during the project would be discharged to the existing combined sewer system. Therefore, the proposed project or variant would require a batch wastewater discharge permit.

San Francisco National Pollutant Discharge Elimination System Permit

The City has an NPDES permit (RWQCB Order No. R2-2013-0029, NPDES No. CA0037664) that was adopted by San Francisco Bay RWQCB on August 14, 2013. The permit covers treated effluent discharges from the Southeast Treatment Plant, North Point Wet-Weather Facility, and Bayside Wet-Weather Facilities, including combined sewer discharges to the Bay. The permit specifies a permitted flow of 85.4 mgd and includes discharge prohibitions, dry-weather effluent limitations, wet-weather effluent performance criteria, receiving-water limitations, sludge management practices, and monitoring and reporting requirements. Areas that drain to the City's combined sewer system are subject to this permit. The proposed project or variant would contribute only wastewater to the Southeast Treatment Plant; stormwater would be managed in a separate stormwater system.

Landscape Irrigation

Projects that will install or modify 500 square feet or more of landscape area are required to comply with San Francisco's Water Efficient Irrigation Ordinance, adopted as Chapter 63 of the San Francisco Administrative Code and SFPUC Rules and Regulations Regarding Water Service to Customers. The project's landscape and irrigation plans shall be reviewed and approved by SFPUC prior to installation.

Non-potable Water Use for Soil Compaction and Dust Control

City Ordinance 175-91 restricts the use of potable water for soil compaction and dust control activities undertaken in conjunction with any construction or demolition project occurring within the boundaries of San Francisco, unless permission is obtained from SFPUC. Non-potable water must be used for soil compaction and dust control activities during project construction or demolition. Recycled water is available from SFPUC for dust control on roads and streets. However, per State regulations, recycled water cannot be used for demolition, pressure washing, or dust control through aerial spraying. The SFPUC operates a recycled water truck-fill station at the Southeast Water Pollution Control Plant that provides recycled water for these activities at no charge.

Recycled Water Use

This project is required to comply with San Francisco's Recycled (or Reclaimed) Water Use Ordinance, adopted as Article 22 of the San Francisco Public Works Code. The project shall include all necessary plumbing for the future use of recycled water for non-potable applications including, but not limited to, toilet flushing and irrigation. In a mixed-used residential building where a recycled water system is installed, any restaurant or other retail food-handling establishment must be supplied by a separate potable water system to ensure public health and safety. The SFPUC's City Distribution Division and the Department of Building Inspection's Plumbing Division shall review all technical aspects of the water and recycled water infrastructure (mains, piping, valves, etc.) design plans.

Residential Water Submetering

This project is required to comply with residential water submetering requirements set forth in the California Water Code (Division 1, Chapter 8, Article 5, Section 537-537.5) by Senate Bill 7 and enforced in San Francisco by SFPUC. New construction of a multi-family residential structure or mixed-use residential and commercial structure must indicate on its site plans that each dwelling unit will be submetered as a condition of the site permit and water service. The SFPUC will review plans for compliance only for projects that apply for a site permit from the Department of Building Inspection and for new water service from SFPUC after January 1, 2018. Projects that submit either application before January 1, 2018 do not need to comply.

Groundwater Resources

If wells are to be used for groundwater dewatering during construction, the project would be required to comply with San Francisco's Soil Boring and Well Regulation Ordinance, adopted as Article 12B of the San Francisco Health Code. The use of a groundwater well may affect the beneficial uses of San Francisco's aquifers, and shall be reviewed and approved by the San Francisco Department of Public Health and SFPUC.

San Francisco Housing Code

The intent of Chapter 12A of the San Francisco Housing Code, also known as the Residential Water Conservation Ordinance, is to conserve existing water supplies by reducing overall demand for water in residential buildings. The ordinance requires that water conservation devices be installed in all residential buildings, except tourist hotels and motels, when a specific event occurs such as a major building improvement, a meter conversion, a condominium conversion, or a transfer of title.

Sustainability Plan for the City and County of San Francisco

The *Sustainability Plan for the City and County of San Francisco* establishes sustainable development as a fundamental goal of municipal public policy, and approval of the plan's goals and objectives as ends that the City will strive to attain. The San Francisco Building Code was amended in 2008 to add Chapter 13C, "Green Building Requirements," which partially implements the energy provisions of the sustainability plan. The proposed project or variant would comply with applicable Green Building requirements, including those for water and stormwater. The proposed development at the India Basin Shoreline Park and 900 Innes properties would be developed to

Leadership in Energy and Environmental Design (LEED) Gold standards, and the proposed development at the India Basin Open Space and 700 Innes properties would be developed to a LEED Silver rating or equivalent.

3.12.3 Impacts and Mitigation Measures

Significance Thresholds

The thresholds for determining the significance of impacts in this analysis are consistent with the environmental checklist in Appendix G of the State CEQA Guidelines, which has been modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the proposed project or the variant would result in a significant impact related to Utilities and Service Systems. Implementation of the proposed project or the variant would have a significant effect on Utilities and Service Systems if the proposed project or variant would:

- exceed wastewater treatment requirements of the applicable RWQCB;
- require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- have insufficient water supply available to serve the project from existing entitlements and resources, or require new or expanded water supply resources or entitlements; or
- result in a determination by the wastewater treatment provider that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Approach to Analysis

A quantitative approach was used to determine the significance of the impacts of the proposed project or variant based on the aforementioned significance thresholds. Wastewater production was calculated and compared to City treatment capacity to determine whether wastewater treatment requirements would be exceeded. In addition, the demand for potable water (both with and without use of recycled water) was calculated to assist in determining whether sufficient water supply would be available. SFPUC has completed a water supply assessment of the project and determined that sufficient water supply is available (SFPUC, 2016b). The City's wastewater discharge permitting and stormwater requirements were also reviewed.

The following evaluation discusses whether the proposed project or variant would result in direct impacts on utilities and service systems such as existing wastewater and stormwater drainage facilities, water supply, or water treatment facilities. The evaluation also discusses whether the proposed project or variant would result in indirect impacts on utilities and services systems, such as construction impacts from new stormwater drainage systems. The analysis involved reviewing published data and material provided by the City, SFPUC, RPD's and BUILD's designs, and other available information.

The Initial Study (included in Appendix A of this EIR) found that the proposed project or variant would not result in significant adverse impacts associated with solid waste generation and disposal and compliance with statutes and regulations related to solid waste. Therefore, these topics are not discussed further in this section.

Project Features

Both the proposed project and the variant would involve demolishing some of the existing buildings on the project site and constructing a mixed-use development that would include residential, commercial, institutional/educational, research and development, parking, and open space uses. All of these uses except parking would generate demand for utilities, including potable and nonpotable water, wastewater treatment, and solid waste disposal.

Impact Evaluation

Impact UT-1: The proposed project or variant would not exceed wastewater treatment requirements of the applicable RWQCB or result in a determination by the wastewater treatment provider that it has inadequate capacity to serve the projected demand in addition to the provider's existing commitments. ***(Less than Significant)***

All water discharged from the project site—construction-related wastewater, wastewater generated at the proposed new housing and facilities during project operation, and stormwater runoff—would be subject to NPDES permitting requirements, as administered by San Francisco Bay RWQCB and the City.

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Construction-related wastewater runoff would be subject to NPDES permitting requirements, as administered by San Francisco Bay RWQCB and the City. Wastewater generated during construction would consist of dewatering effluent and wastewater from construction work.

Construction-related wastewater flows from the project site would be discharged to the combined sewer system. Wastewater from the project site would be treated at the Southeast Treatment Plant and the Bayside Wet-Weather Facilities. SFPUC, which operates the Southeast Treatment Plant, is required to comply with NPDES Order R2-2013-0029, which specifies a permitted flow and includes discharge prohibitions, dry-weather effluent limitations, wet-weather effluent performance criteria, receiving-water limitations, sludge management practices, and monitoring and reporting requirements. Discharges are also subject to the City's Industrial Waste Ordinance. This ordinance is found in Article 4.1 of the Public Works Code, as supplemented by Order No. 158170, which regulates the quantity and quality of discharges to the combined sewer system. In accordance with Article 4.1 and Order No. 158170, the project would require a batch wastewater discharge permit, which would contain appropriate discharge standards and may require installation of meters to measure the volume of the discharge.

Any groundwater dewatered from the site may contain contaminants related to past site activities, as well as sediment and suspended solids; however, the construction contractors would be required to treat the groundwater as necessary to meet permit requirements before discharge to the combined sewer system, and discharge rates would be controlled to avoid exceeding the capacity of the sewer system. (For additional information, see Impact HY-1 in Section 3.15, "Hydrology and Water Quality.") In addition, if a well is used for groundwater dewatering, the project would be required to comply with San Francisco's Soil Boring and Well Regulation Ordinance,

whereby the use of a groundwater well would be reviewed and approved by the San Francisco Department of Public Health and SFPUC.

Because the project would comply with the City's Industrial Waste Ordinance and the requirements of the batch wastewater discharge permit, construction-related wastewater generation would not cause the City to exceed the requirements of the NPDES permit. Thus, this impact would be *less than significant.* No mitigation measures are necessary.

Operation

The entire project site is proposed to be operated in the separate sewer-stormwater area; therefore, only wastewater would flow to the wastewater treatment plant. For the overall project site, any wastewater generated by the proposed project or variant would be discharged to the City's sewer system, treated at the Southeast Treatment Plant and/or on-site, and used as recycled water.

India Basin Shoreline Park and 900 Innes Properties

Wastewater from the India Basin Shoreline Park and 900 Innes properties would be generated by restroom use (flows and flushes) and food vendor concession operations. Anticipated water use at these facilities is estimated to be 3,180 gpd or 0.0032 mgd (2,789 gpd or 0.003 mgd at the India Basin Shoreline Park property and 391 gpd or 0.0004 mgd at the 900 Innes property). Another infrequent sanitary-sewer demand would be for the twice-yearly draining of the water feature for routine maintenance, which would entail draining 3,330 cubic feet of water each time. Water from irrigation, drinking fountains, and the water feature (top-off) would not generate wastewater that would enter the City's combined sewer system (BKF, 2016; MKA, 2016).

During wet weather (typically October 15–April 30), the Southeast Treatment Plant has a total design flow capacity of 250 mgd, whereas during dry weather (typically May 1–October 15), the Southeast Treatment Plant currently has available dry-weather treatment capacity of about 25 mgd. The increase in wastewater generated by the India Basin Shoreline Park and 900 Innes properties would not be enough to exceed the capacity of the Southeast Treatment Plant for worst-case wastewater discharges.

India Basin Open Space Property

Because of the lack of facilities proposed for the India Basin Open Space property, no wastewater would be generated (Sherwood, 2016b).

700 Innes Property

Because of the residential development proposed for the 700 Innes property, this property would produce an estimated 155,511 gpd or 0.16 mgd of wastewater, more than 80 percent from residential development. Wastewater would also be generated by commercial/retail and institutional/educational uses (Sherwood, 2016b).

With a reduction in residential development, the variant would generate an estimated 123,575 gpd of wastewater, less than under the proposed project. About 50 percent of the wastewater generated at the site would be from commercial/retail uses, and about 42 percent would be from residential development (Sherwood, 2016b). Operation of the proposed project or variant would increase wastewater generation at the project site, as very little

wastewater currently flows through the site. Two potential scenarios for wastewater management are being considered under the proposed project or variant at this time:

- *Wastewater Scenario 1:* Connect to the municipal combined sewer system and discharge all sewer flows generated on the property to the municipal system.[3]
- *Wastewater Scenario 2:* Construct a wastewater treatment facility on-site to treat a portion of the wastewater for reuse on-site as recycled water.

Proposed Project

Assuming no on-site water treatment, the proposed project would generate an estimated total of 0.1634 mgd of sewage annually (Sherwood, 2016b; BKF, 2016). This does not include any foundation dewatering that may be needed during operation of the proposed project.

During construction of the proposed project, new wastewater lines would be constructed within the project site to connect to the existing SFPUC combined sewer system. Because stormwater from the project site would be collected in a separate stormwater system, only wastewater flows from the project site would contribute to flows requiring treatment at the Southeast Treatment Plant.

All wastewater generated from the project site during dry weather (typically May 1–October 15) would be conveyed to and treated at the Southeast Treatment Plant, which currently has available dry-weather treatment capacity of about 25 mgd.[4] During dry weather, with the proposed project under the more conservative scenario, Wastewater Scenario 1 (no on-site wastewater treatment), the worst-case discharge of wastewater from the project site would contribute toward 0.19 percent of the total design treatment capacity (0.27 percent of the average dry-weather treatment capacity) of the Southeast Treatment Plant. Thus, during dry weather, there would be adequate capacity to handle the 0.1634 mgd of wastewater flows from the proposed project.

During wet weather (typically October 15–April 30), the Southeast Treatment Plant has a total design flow capacity of 250 mgd. The volume of flow to the combined sewer system varies widely during wet weather because of the addition of stormwater flows from areas of the City that lack separate stormwater systems. During large storm events, the capacity of the Southeast Treatment Plant, North Point Wet-Weather Facility, and Bayside Wet-Weather Facilities can be exceeded, and the City's NPDES permit (Order No.R2-2013-0029, NPDES No. CA0037664) allows the City to discharge into the Bay via CSO structures. Stormwater from the proposed project would be diverted to a separate stormwater system and would not require treatment at the Southeast Treatment Plant.

Wastewater from the project site would be conveyed to the combined sewer system during both wet and dry weather at a constant rate of 0.1634 mgd under the most conservative, worst-case scenario in which no on-site wastewater treatment plant would be constructed (Wastewater Scenario 1). Even during wet weather, there would be no contribution of stormwater from the project site to the combined sewer system and Southeast Treatment Plant, because that stormwater would be treated on-site and discharged directly to the Bay following the MS4

[3] The City requires developments with 250,000 sq. ft. of gross floor area to treat water on-site and reuse it for nonpotable applications. If Wastewater Scenario 1 is chosen, a building-by-building system would be installed to use all available graywater, rainwater and foundation drainage to meet the toilet flushing and irrigation nonpotable-water demands.

[4] During dry weather, the Southeast Treatment Plant treats an average of 60 mgd, although the treatment plant has a dry-weather design capacity of 85.4 mgd.

requirements. The 0.1634 mgd of wastewater flows generated from the proposed project would be 0.07 percent of the wet-weather flows to the Southeast Treatment Plant, an incremental increase in wastewater volume from the project site compared to existing conditions. This incremental increase would not contribute to a violation of current wastewater treatment and discharge requirements. The proposed project's wastewater flows during wet weather are not anticipated to exceed the wastewater treatment requirements of San Francisco Bay RWQCB.

Variant

Like the proposed project, the variant would contribute only wastewater to the City's combined sewer system and treatment plants. All stormwater would be captured and treated on-site and discharged directly to the Bay following the MS4 requirements. The same two potential scenarios for wastewater management described for the proposed project are also applicable to the variant: Wastewater Scenario 1, connecting to the municipal combined sewer system and discharging all sewer flows generated on the property to the municipal system; and Wastewater Scenario 2, assuming the construction of a wastewater treatment facility on-site to treat a portion of the wastewater for reuse on-site as recycled water. Assuming no on-site water treatment, the variant would generate an estimated total of 0.1234 mgd of sewage annually.

During dry weather, there would be adequate capacity for the 0.1234 mgd of wastewater flows from the variant under the more conservative, worst-case scenario (Wastewater Scenario 1), in which no on-site wastewater treatment plant would be constructed. That represents 0.14 percent of the total design treatment capacity (0.20 percent of the average dry-weather treatment capacity) of the Southeast Treatment Plant. During dry weather, the variant's wastewater flows are not anticipated to exceed the wastewater treatment requirements of San Francisco Bay RWQCB.

During wet weather, the 0.1234 mgd of wastewater flows generated from the variant would be 0.05 percent of the wet-weather flows to the Southeast Treatment Plant, representing an incremental increase in wastewater volume from the project site compared to existing conditions. This incremental increase would not contribute to a violation of current wastewater treatment and discharge requirements. The variant's wastewater flows during wet weather are not anticipated to exceed the wastewater treatment requirements of San Francisco Bay RWQCB.

Overall Operational Impact Conclusion

The incremental increase in wastewater flows to the City's combined sewer system and treatment plants resulting from the proposed project or variant would not be anticipated to exceed the wastewater treatment requirements of San Francisco Bay RWQCB. Therefore, the operational impact of the proposed project or variant related to exceedance of wastewater treatment requirements would be *less than significant* for all four properties. No mitigation measures are necessary.

Impact UT-2: The proposed project or variant would require or result in the construction of new water, wastewater, or stormwater drainage treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. ***(Less than Significant with Mitigation)***

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

The proposed project or variant would create additional residential and retail/commercial uses, which could substantially increase water demand as well as wastewater generation and stormwater runoff from the project site. Installing and upgrading water, wastewater, and stormwater infrastructure would require excavation, trenching, soil movement, and other activities typical of the construction of development projects. Constructing an on-site wastewater treatment facility would also require excavation, soil movement, and other activities similar to those pursued during construction of development projects. During construction, non-potable water would be used for dust control and other construction activities per Ordinance 175-91.

The activities required to install water, wastewater, and stormwater utility infrastructure would be similar to the activities required to construct the proposed project or variant (e.g., excavation, trenching). Thus, such activities would not result in environmental impacts beyond those related to cultural resources, noise, air quality, biological resources, water quality, and hazardous materials that are discussed in this EIR. (See Section 3.4, "Cultural Resources"; Section 3.6, "Noise"; Section 3.7, "Air Quality"; Section 3.14, "Biological Resources"; Section 3.15, "Hydrology and Water Quality"; and Section 3.16, "Hazards and Hazardous Materials," respectively.) Mitigation measures identified in those sections would reduce any significant impacts specifically related to the construction of water, wastewater, or stormwater facilities to less-than-significant levels. Therefore, this impact would be *less than significant with mitigation*.

Operation

For the overall project site, either the proposed project or the variant would require new on-site infrastructure for stormwater, potable water, and wastewater collection and recycling.

New stormwater conveyance infrastructure (pipes, channels, swales) would be required at the project site and would comply with the City's 2015 Subdivision Regulations. The proposed project or variant would include a stormwater management system that would also meet the City's Stormwater Management Ordinance andSWRCB's 'trash amendments'. The project site would be designed with LID concepts and stormwater management systems to comply with the SMR. Compliance with the SMR would ensure that stormwater generated at the project site is managed on-site to meet the performance requirements. Stormwater runoff from the proposed project or variant would not be connected to the combined sewer system, and therefore, would not contribute stormwater runoff to the City's combined sewer system.

New potable-water infrastructure that would connect to existing SFPUC potable-water infrastructure would be installed on-site to convey potable water throughout the project site. As discussed below in Impact UT-3, the India Basin WSA, approved by SFPUC on December 13, 2016, concluded that SFPUC has adequate short-term and long-term water supplies for the project to operate through 2040.

The combined sewer in Arelious Walker Drive, including all manholes and appurtenances, would be demolished as part of the proposed project or variant. The combined sewer in Innes Avenue would remain in place and would be used as the point of connection for wastewater associated with the project. New wastewater collection and treatment infrastructure would be installed on-site to serve project uses. Proposed wastewater lines would connect to existing City combined sewer lines located beneath adjacent streets. As discussed in Impact UT-1, wastewater flows for the proposed project or variant are not anticipated to exceed the wastewater treatment requirements of San Francisco Bay RWQCB, and existing wastewater facilities are anticipated to be able to accommodate the projected wastewater flows.

Among the four properties, there would be differences in both stormwater collection and treatment and wastewater treatment and recycling facilities. These differences are discussed below.

India Basin Shoreline Park Property

Stormwater conveyance infrastructure for the India Basin Shoreline Park property would comply with SFPUC requirements and SWRCB's 'trash amendments'. Runoff from new impervious surfaces would be managed using swales and/or bioretention areas. The current design would require two subbasins that would manage stormwater runoff via bioretention ponds and swales. The northern subbasin would utilize the existing stormwater outfall near the turnaround and the southern subbasin would require a new stormwater outfall (MKA, 2016).

Nonpotable water used for park irrigation and potentially toilet flushing could be created by mining wastewater from the combined sewer pipeline in Hunters Point Boulevard and treating it in an on-site wastewater treatment system (MKA, 2016) if approved by SFPUC and the City. Any treated wastewater in excess of the amount needed for on-site recycled-water demand would be discharged into the combined sewer via the Hunters Point Boulevard connection.

900 Innes Property

Stormwater conveyance infrastructure for the 900 Innes property would comply with SFPUC requirements and SWRCB's 'trash amendments'. Runoff from new impervious surfaces would be managed using swales and/or bioretention areas. The current design would include a single constructed basin within the 900 Innes property to manage stormwater runoff for the property. This property would utilize a new outfall that would be jointly used by the 900 Innes and 700 Innes properties.

Nonpotable water used for park irrigation and potentially toilet flushing could be created by mining wastewater from the combined sewer pipeline in Hunters Point Boulevard and treating it in an on-site wastewater treatment system at the India Basin Shoreline Park property, and then piping that water for use at the 900 Innes property (MKA, 2016) if approved by SFPUC and the City.

India Basin Open Space Property

It is assumed that the India Basin Open Space property would be self-treating in terms of stormwater and would enable water to overland flow into the Bay. An existing drainage outfall extending from the India Basin Open Space property into the Bay would be removed. No wastewater would be generated at the India Basin Open Space property.

700 Innes Property

Proposed Project

As stated above in Impact UT-1, two potential scenarios are being considered for wastewater management at the 700 Innes property:

- *Wastewater Scenario 1:* Connect to the municipal combined sewer system and discharge all sewer flows generated on the property to the municipal system.[5]
- *Wastewater Scenario 2:* Construct a wastewater treatment facility on-site to treat a portion of the wastewater for reuse on-site as recycled water.

Wastewater would be diverted to this plant for treatment and reuse, as needed, to comply with the City's Nonpotable Water Program. A nonpotable recycled-water distribution system would also be installed at the project site as required by the City's Recycled Water Ordinance. The distribution system would be installed under streets (New Hudson Avenue, Hudson Avenue, Griffith Street, Arelious Walker Drive, Earl Street, and an unnamed proposed street) and would connect to Innes Avenue. If Wastewater Scenario 1 was chosen, a building-by-building system would be installed to use all available graywater, rainwater and foundation drainage to meet the toilet flushing and irrigation nonpotable-water demands.

A stormwater management system would be implemented on the 700 Innes property as part of the proposed project or variant, with the goal of retaining and reusing some of the stormwater captured on-site. Stormwater conveyance infrastructure (pipes, channels, swales) for the 700 Innes property would comply with the City's 2015 Subdivision Regulations and would be sized for the 5-year event, and the 100-year event would be routed safely overland through the properties to the Bay (Sherwood, 2016c). Storm drain trunk lines of 12-inch-minimum diameter and ranging up to 24 inches in diameter are proposed on the property, with 12-inch-minimum trunk lines in all public rights-of-way, 6-inch-minimum-diameter pipes in private streets, and roof leaders of 6 inches typical (Sherwood, 2016c). Although a section of the 700 Innes property is located in a separate sewer area, the entire project would be regulated as a separate sewer area and follow the MS4 requirements for stormwater, which would require a preliminary concurrence from SFPUC before submission and approval by San Francisco Bay RWQCB. Stormwater infrastructure for 700 Innes would also be designed to the meet SWRCB's 'trash amendments' requirements.

Stormwater would be treated in centralized and decentralized bioretention areas and/or swales before being discharged to the Bay. The treatment areas would be sized to meet SFPUC and RWQCB requirements. Additionally, stormwater capture, treatment, and reuse may be utilized as a means of providing nonpotable water to meet the regulatory requirements of the Nonpotable Water Ordinance.

The stormwater management system on the 700 Innes property is anticipated to include the following components:

[5] The City requires developments with 250,000 sq, ft. of gross floor area to treat water on-site and reuse it for nonpotable applications. If Wastewater Scenario 1 is chosen, a building-by-building system would be installed to use all available graywater, rainwater and foundation drainage to meet the toilet flushing and irrigation nonpotable-water demands.

- Streetscape runnels for conveyance of stormwater in hardscape areas to various bioretention areas, and to feed the reservoirs in the open space.
- Vegetated swales for treatment and conveyance of stormwater in softscape areas. The swales would accommodate seasonal and large-storm-event water flow, and would be capable of withstanding inundation.
- Local treatment, including the use of rain gardens and flow-through planters in the public realm, stormwater bioretention ponds and swales, and biotreatment landscapes in the open space areas.
- Retention ponds to store runoff for reuse.
- A circulation system to aerate and move water between facilities.
- Use of treated stormwater for on-site reuse, and on-site recycling of gray water and black water for on-site irrigation, toilet flushing, and other purposes, including potential export for off-site irrigation.
- Spring cutoff drain to recapture water flow from a spring below the project site, to contribute to meeting nonpotable-water demands and for use in water features and/or stormwater infrastructure (requires approval from SFPUC and the City).

Variant

Utility infrastructure requirements associated with the variant would be similar to those analyzed and discussed for the proposed project. The on-site wastewater treatment plant would need a nominally larger footprint because the variant is anticipated to result in increased demand for recycled water, and thus, increased demand for water treatment (Sherwood, 2016b).

Overall Operational Impact Conclusion

As discussed above, operation of the proposed project or variant would not require the construction of new or expansion of existing off-site stormwater, water, or wastewater treatment facilities. Installing water, wastewater, and stormwater infrastructure on-site would not result in environmental impacts beyond other resource impacts discussed in this EIR. Mitigation measures listed in Section 3.5, "Transportation and Circulation"; Section 3.6, "Noise"; and Section 3.7, "Air Quality," would reduce any significant impacts specifically related to expanded water, wastewater, and stormwater facilities to less-than-significant levels. Therefore, the impact from the construction of new water, wastewater, or stormwater drainage treatment facilities for the proposed project or variant would be *less than significant with mitigation*.

Impact UT-3: The proposed project or variant would not require new or expanded water supply resources or entitlements. *(Less than Significant)*

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

The use of water during construction would be temporary and less than the long-term operational demand. In addition, during construction, non-potable water would be used for dust control and other construction activities per Ordinance 175-91; recycled water is available from SFPUC for dust control on roads and streets. Therefore, construction under either the proposed project or the variant would not require water supplies in excess of existing

entitlements or result in the need for new or expanded entitlements. Collectively, the impact on water supply resources or entitlements resulting from construction of the proposed project or variant would be *less than significant.* No mitigation measures are necessary.

Operation

The proposed project includes up to 1,240 residential units and 275,300 gross square feet of retail, commercial, or flex space. These uses would create increased demand for potable water. Two potential scenarios were analyzed to determine the associated potable- and nonpotable-water demands (BKF, 2016):

- demands with no recycled water available at the start of the project, and
- demands with recycled water available for the project.

In the second scenario, a wastewater treatment facility would be constructed on-site to treat a portion of the wastewater for reuse on-site as recycled water. The project would be able to recycle enough water on-site to supply all demands for nonpotable water (Sherwood, 2016b). Additionally, because the sewage flows would be greater than the nonpotable-water demands, the proposed project has the opportunity to operate in an ecodistrict capacity and provide nonpotable water to adjacent properties for irrigation, flushing, and/or cooling demands.

Residential potable-water unit demand was based on 90 gpd per dwelling unit. This unit demand assumes 45 GPCD and 2.0 residents per dwelling unit. These unit demands are consistent with the SFPUC Water Enterprise's Water Report, prepared by RMC. The Water Report provides projections of potable-water demand for the years through 2040 and projects that, through normal replacement of plumbing fixtures and appliances, most or all residences will have plumbing fixtures and appliances that meet the current plumbing code by that time. A unit demand of approximately 43–45 GPCD is provided in the Water Report through the year 2040. The India Basin Water Demands Memorandum analysis (BKF, 2016) used 45 GPCD, which is slightly conservative. Residential recycled-water unit demand for toilet flushing was based on 6.4 GPCD (assuming five flushes per day per person at 1.28 gallons per flush) and 2.0 residents per dwelling unit.

Commercial and retail potable-water unit demand was based on 0.07 gallon per day per square foot (gpd/sq. ft.). This demand rate was calculated by the following methodology. Before 2008 and adoption of the California Green Building Standards, 0.10 gpd/sq. ft. was a generally accepted water demand used for office/commercial space. Currently, the California Green Building Standards require calculation of a baseline demand and then a 25 percent reduction from baseline. To account for conservation and implementation of the California Green Building Standards, the 25 percent reduction was applied to 0.10 gpd/sq. ft., resulting in a unit demand of 0.075 gpd/sq. ft. Additionally, the November 2004 Demands Report provides an estimated historical demand of 18.3 gallons per employee per day. Using an assumption of 200 sq. ft. per employee for retail and commercial uses results in a unit demand of 0.92 gpd/sq. ft. This is similar to the 0.10 gpd/sq. ft. noted previously, and with the 25 percent reduction applied, yields 0.07 gallon per square foot (gal/sq. ft.). Commercial and retail recycled-water unit demand for toilet flushing was assumed to be 50 percent of the total water demand; 0.035 gpd/sq. ft. was used for the analysis.

Institutional/education potable-water unit demand is 0.07 gal/sq. ft. and was assumed to be consistent with commercial and retail potable-water unit demand. Similar to the commercial and retail recycled-water unit

demand, institutional/education recycled-water unit demand for toilet flushing was assumed to be 50 percent of the total water demand; 0.035 gpd/sq. ft. is used for this analysis (BKF, 2016).

Irrigation demand was included for the properties, public streets, and open spaces. Cooling demands were calculated from a site mass model using eQuest, an energy simulation program. A nominal unit demand of 1.37 gallons per ton-hour was used to convert the ton-hour output from the model. Cooling demands for the India Basin Shoreline Park and 900 Innes properties was expected to be small compared to the overall project demand and was noted as zero for the analysis. The net potable-water demand resulting from the proposed project at full buildout would be approximately 0.17 mgd without recycled water, or 0.11 mgd with recycled water, after subtracting the existing potable water demand of 0.0027 mgd (see Table 3.12-1). Because of decreased residential development, the variant would have a lower net potable-water demand without recycled water than the proposed project. The net potable-water demand resulting from the variant at full buildout would be approximately 0.16 mgd without recycled water, or 0.08 mgd with recycled water, after subtracting the existing potable-water demand. Table 3.12-2 summarizes demands for potable and recycled (nonpotable) water for the proposed project and variant.

Table 3.12-2: Summary of Overall Project Site Water Demands

	Average Daily Potable-Water Demand (mgd)			Average Daily Recycled-Water Demand (mgd)		
	2015	**2020**	**2025**	**2015**	**2020**	**2025**
Proposed Project (without recycled water)	0	0.12	0.17	0	0	0
Variant (without recycled water)	0	0.10	0.16	0	0	0
Proposed Project (with recycled water)	0	0.07	0.11	0	0.05	0.06
Variant (with recycled water)	0	0.04	0.08	0	0.07	0.08

Notes:
mgd = million gallons per day
Source: BKF, 2016

Using this information, SFPUC developed a WSA for the India Basin Mixed-Use Project (SFPUC, 2016b). Under the WSA law (Sections 10910–10915 of the California Water Code), urban water suppliers such as SFPUC must provide a WSA to the city/county that has jurisdiction to approve environmental documentation for projects qualifying under Water Code Section 10912(a) subject to CEQA. The proposed project is a qualifying project under Water Code Section 10912. The India Basin WSA, approved by SFPUC on December 13, 2016, concluded that SFPUC has adequate short-term and long-term water supplies to operate the project through 2040. Because the proposed project would require the more conservative (higher) water demand, and thus would encompass the variant's lower water demand, the WSA assessed only the proposed project. Because the WSA concluded that adequate water supplies would be available for the proposed project, adequate water supplies would also be available for the variant.

Detailed information about the potable-water demand of individual properties under the proposed project and variant scenarios is provided below and is followed by an overall impact conclusion.

India Basin Shoreline Park and 900 Innes Properties

The India Basin Shoreline Park and 900 Innes properties would have potable-water demand under the proposed project or variant of 0.006 mgd without recycled water (0.0052 mgd for the India Basin Shoreline Park property and 0.00078 mgd for the 900 Innes property). Potable water would be needed for irrigation, restrooms, food vendor concessions, water features, drinking fountains, the kayak building, and a fish station. With recycled water available, the potable-water demand at the India Basin Shoreline Park and 900 Innes properties would be reduced dramatically, to just 0.0032 mgd (0.0028 mgd for the India Basin Shoreline Park property and 0.00034 mgd for the 900 Innes property). Recycled water generated from wastewater mining would be used to fulfill all demand for irrigation and restroom (flush) water if approved by SFPUC and the City. Operation at the India Basin Shoreline Park and 900 Innes properties would not require water supplies in excess of existing entitlements or result in the need for new or expanded entitlements as concluded by SFPUC in the India Basin WSA.

India Basin Open Space Property

The potable-water demand at the India Basin Open Space Property under the proposed project or variant would be low, at 0.0098 mgd without recycled water. The water demand would be used entirely for irrigation. With recycled or other non-potable water available, there would be no demand for potable water at the India Basin Open Space property under the proposed project or variant; recycled or other non-potable water would be used to fulfill the entire irrigation water demand at the project site. Operation at the India Basin Open Space property would not require water supplies in excess of existing entitlements or result in the need for new or expanded entitlements as concluded by SFPUC in the India Basin WSA.

700 Innes Property

Proposed Project

Of the four properties, the 700 Innes property would have the highest potable-water demand under the proposed project, consuming more than 90 percent of the potable water needed for all four properties without recycled water available and 97 percent of potable-water demand for all four properties using recycled water. The potable-water demand at the 700 Innes property would be attributable in large part to residential development, which would account for 71 percent of the demand (without recycled water), with additional demands for commercial/retail, institutional/educational, irrigation, and cooling-water uses.

The total potable-water demand for the 700 Innes property as a result of the proposed project at full buildout would be approximately 0.16 mgd without recycled water. With recycled water, the potable-water demand would decrease to 0.11 mgd. Recycled water would be used for all irrigation and cooling-water uses and for half of the commercial/retail and institutional/educational water demand. Operation of the 700 Innes property development under the proposed project would not require water supplies in excess of existing entitlements or result in the need for new or expanded entitlements as concluded by SFPUC in the India Basin WSA.

Variant

The potable-water demand at the 700 Innes property would be less under the variant than under the proposed project. Under the variant, the potable-water demand at this property would be 0.14 mgd without recycled water, compared to 0.16 mgd under the proposed project, because less water would be needed with fewer residential

users. With recycled water available, the potable-water demand for the 700 Innes property under the variant would be 0.07 mgd, compared to 0.11 mgd under the proposed project. Operation of the 700 Innes property development under the variant would not require water supplies in excess of existing entitlements or result in the need for new or expanded entitlements, as concluded by SFPUC in the India Basin WSA.

Overall Operational Impact Conclusion

The WSA concluded that adequate water supplies would be available for the proposed project; thus, adequate water supplies would also be available for the variant. Therefore, the impact of operation of the proposed project or the variant related to the need for new or expanded water supply resources or entitlements would be *less than significant.* No mitigation measures are necessary.

3.12.4 Cumulative Impacts

Impact-C-UT-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would not substantially contribute to cumulative impacts related to utilities and services systems. *(Less than Significant)*

The geographic scope for cumulative impacts related to utilities and service systems is the service area for SFPUC's water and wastewater facilities, particularly the Southeast Treatment Plant.

Construction

In conjunction with the cumulative projects identified in Table 3-1, the proposed project or variant would alter the amount of impermeable surface, resulting in the need for modifications and improvements to stormwater facilities, and would result in increased demand for potable water and wastewater treatment as the site is fully developed.

All of the developments on the cumulative project list within the City and County of San Francisco would be subject to the City's stormwater management program, the Stormwater Management Ordinance, batch wastewater discharge permit requirements, and the NPDES permit. Construction of the proposed project or variant would not cause a substantial amount of water consumption or wastewater to reach the City's wastewater treatment facilities. Thus, implementation of the cumulative projects would not require or result in the construction of new, or the expansion of existing, SFPUC water distribution infrastructure or wastewater/stormwater facilities, the construction of which would cause significant environmental effects. Therefore, the cumulative impact related to construction of new or expanded water or wastewater/stormwater infrastructure or facilities would be *less than significant*. No mitigation measures are necessary.

Operation

Water Supply

As part of its planning for future water supply needs, SFPUC has conducted comprehensive planning studies to assess water demands for its service area, including the entire City, through the year 2040. SFPUC has adequate water supplies to meet service area demands through 2040. SFPUC approved the India Basin WSA (SFPUC,

2016b), which concluded that SFPUC has adequate short-term and long-term water supplies for the operation of the proposed project (and variant) in combination with projected demand throughout the service area through 2040. Pursuant to the Nonpotable Water Ordinance, the proposed project or variant would use nonpotable water to reduce the overall water demand at the project site. Pursuant to the nonpotable-water requirements, the WSA, and SFPUC's planning efforts, implementing the proposed project or variant and the cumulative projects would not require or result in the construction of new water facilities or expansion of existing facilities, the construction of which would cause significant environmental effects. Thus, the cumulative operational water supply impact would be *less than significant.* No mitigation measures are necessary.

Stormwater

The cumulative projects would be required to appropriately manage stormwater, which may include discharge into the City's combined sewer system or into separate stormwater and wastewater infrastructure. Pursuant to the City's Stormwater Management Ordinance, cumulative projects would be required to prepare stormwater control plans, including using LID strategies.

The proposed project or variant would not result in increased stormwater flows from the project site and would not contribute any stormwater to the Southeast Treatment Plant because a separate stormwater system would be developed on-site. In addition, the Candlestick Point–Hunters Point development would construct a separate stormwater sewer on its own development site; therefore, similar to the proposed project, the Candlestick Point–Hunters Point development would contribute only wastewater to the combined sewer system. Moreover, the May 2014 addendum to the Visitacion Valley Redevelopment Program EIR determined that the modified development program would result in less-than-significant project-level and cumulative impacts on utilities and service systems, including stormwater facilities.

Therefore, cumulative projects in combination with the proposed project or variant would not exceed the capacity of existing, or require the construction of new, off-site stormwater drainage infrastructure. The cumulative operational stormwater impact would be *less than significant.* No mitigation measures are necessary.

Wastewater

The cumulative projects would contribute additional wastewater to the existing Southeast Treatment Plant, which would reduce the available capacity for additional wastewater flows to be treated at the plant. The incremental increase in wastewater flows from the proposed project or variant would not contribute to a violation of current wastewater treatment and discharge requirements. In addition, SFPUC is implementing the SSIP, which anticipates long-term development in the City pursuant to planned growth (SFPUC, 2014c). These improvements include, for example, the Biosolids Digester Facilities Project, which will improve treatment and management of biosolids at the Southeast Treatment Plant; and the Sunnydale Auxiliary Sewer Project, which will reduce local wastewater and stormwater flooding during peak storm events, including wastewater flows from the Visitacion Valley/Schlage Lock Special Use District.

Therefore, implementation of the cumulative projects would not require or result in the construction of new, or the expansion of existing, wastewater facilities. The cumulative operational wastewater impact would be *less than significant.* No mitigation measures are necessary.

Auxiliary Water Supply System

The San Francisco Emergency Firefighting Water System (i.e., AWSS) is proposed to be extended to the Candlestick Point–Hunters Point development by installing AWSS infrastructure along Innes Avenue. Such an extension would benefit the proposed project or variant by providing additional firefighting water infrastructure to the project area that could be available for use at the four project site properties. Thus, the cumulative operational AWSS impact would be *less than significant.* No mitigation measures are necessary.

3.12.5 References

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3.13 PUBLIC SERVICES

This section describes the existing environmental and regulatory setting related to fire protection, police protection, schools, and library services and addresses the potential impacts of the proposed project and variant. Park-related public services are addressed in Section 3.11, "Recreation." No comments related to public services were received during the public scoping period for the Notice of Preparation.

3.13.1 Environmental Setting

Fire Protection

San Francisco

The San Francisco Fire Department (SFFD) provides fire protection and emergency medical services (EMS) in San Francisco. SFFD resources include 43 engine companies, 19 truck companies, a dynamically deployed fleet of ambulances, two heavy rescue squad units, two fireboats, and multiple special-purpose units (SFFD, 2016a). SFFD responds to more than 130,000 incidents each year, including fire and EMS (San Francisco Fire Commission, 2016). As of 2013 (the most recent date for which staffing data were available), SFFD employed a uniformed staff of 1,392 (SFFD, 2013). For each shift, fire engines require four staff members, ladder trucks require five staff members, and the battalion chief requires one staff member. An engine carries one officer and three firefighters, one of whom is qualified to provide EMS.

SFFD seeks to meet a response time of 5 minutes or less for the arrival of the first fire engine company (Rivera, pers. comm., 2017). SFFD's target for ambulance response for EMS is 10 minutes. SFFD does not have a response-time goal for nonemergency requests for EMS (Rivera, pers. comm., 2017). In June 2016, the monthly average response for EMS within 10 minutes was 91.5 percent (SFOC, 2016).

The San Francisco Emergency Firefighting Water System, referred to in this section as the Auxiliary Water Supply System (AWSS), is used for the suppression of multiple-alarm fires and for fire suppression during major seismic events. The system delivers water at high pressure and consists of a storage reservoir, tanks, cisterns, water mains and hydrants, emergency saltwater pump stations, and fireboats (SFPUC, 2014 and 2017). The AWSS is an independent system that is owned and operated by the San Francisco Public Utilities Commission and used exclusively by SFFD for firefighting (SFPUC, 2014). The system is currently being seismically upgraded with funding from the Earthquake Safety and Emergency Response Bond 2010, which San Francisco voters approved in June 2010 (SFPUC, 2017).

Project Site

There are no fire stations at the project site. All four properties at the site—India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes—receive first-alarm fire protection primarily from Station 17 (1295 Shafter Avenue) and Station 25 (3305 Third Street), located approximately 0.7 mile southwest and 1.3 miles northwest of the project site, respectively. Station 9 (2245 Jerrold Avenue) and Station 42 (2430 San Bruno Avenue), located less than 3 miles west and southwest of the project site, respectively, also serve the site.

Emergency vehicles near the project site typically use major streets when heading to and from emergencies and emergency facilities. Arterial roadways allow the emergency vehicles to travel at higher speeds and permit other traffic to maneuver out of the path of these vehicles. Nonemergency vehicles are required to yield to emergency vehicles headed to the project site (California Vehicle Code, Section 21806). Emergency vehicles travel from these nearest fire stations to the project site via Third Street, Evans Avenue, Hunters Point Boulevard, Innes Avenue, and Ingalls Street. (San Francisco, 2017.)

Potable water is currently available in the project vicinity from a 16-inch main in Innes Avenue. Two existing fire hydrants are located along the Innes Avenue frontage, at the intersections with Arelious Walker Drive and Earl Street. Existing AWSS infrastructure is not available along Innes Avenue on the project site. The adjacent Candlestick Point–Hunters Point Phase II Shipyard Development plans to install AWSS infrastructure in Innes Avenue to Earl Street.

Police Protection

San Francisco

The San Francisco Police Department (SFPD) provides police protection services throughout San Francisco. Police protection services primarily involve responding to calls for service, providing law enforcement and deterrence of criminal behavior, completing administrative tasks, and engaging in community policing (which involves working with community groups, businesses, schools, and other government agencies on crime prevention and law enforcement matters). SFPD catalogs criminal incidents by the severity of the crime. Part I crimes consist of homicide, rape, robbery, aggravated assault, burglary, larceny/theft, auto theft, and arson (SFPD, 2014) and Part II crimes are generally nonviolent crimes. SFPD has 10 district stations throughout the City.

SFPD's target for response to high-priority calls is 4 minutes or less. The monthly average police response time from May 1 to July 31, 2016, was 5 minutes (SFOC, 2016). As of 2015, SFPD had a sworn staffing level of 239 officers per 100,000 residents (SFOC, 2015a). SFPD does not have an adopted staffing ratio and allocates police resources based on factors such as calls for service, incident rates, response times, population, and land uses.

As required by the San Francisco Board of Supervisors, SFPD must publish a district station boundary analysis report every 10 years, with the intention of proposing boundaries for each SFPD district that more evenly distribute police resources and respond to community input. The most recent district station boundary analysis report, prepared in 2015, proposed moving the boundary of the Southern District farther south and reducing the size of the Bayview District (SFOC, 2015b). The report estimated that, with the new Bayview District boundaries, both calls for service and the number of incidents in the Bayview District would decrease (SFOC, 2015b). The new district boundaries were implemented in July 2015.

Project Site

There are no police stations at the project site. The project site is located within SFPD's Bayview District, which had a population of approximately 65,000 in 2014 (SFOC, 2015b). All four properties at the project site are served by the Bayview Station, located at 201 Williams Avenue, approximately 1.3 miles southwest of the site. The Bayview Station serves southeastern San Francisco, covering approximately 18 percent of the City's land area. In 2012, 3,802 Part I crimes (violent and property crimes) were reported in the Bayview District; this

accounted for 8.5 percent of the 44,884 total Part I crimes reported Citywide (SFPD, 2012). Part II crimes are not reported by district.

Schools

San Francisco

San Francisco Unified School District (SFUSD) provides public elementary and secondary education throughout the City. Students are placed in SFUSD schools through a preference-based application program rather than a location-based assignment system, which means that not all SFUSD students attend the schools nearest to their homes (SFUSD, 2012).

SFUSD has experienced a gradual increase in enrollment since 2009, from 55,140 enrolled in kindergarten through 12th grade (K-12) in 2009–2010 to 58,865 K-12 students enrolled in 2015–2016 (CDE, 2016). Project yield rates for SFUSD depend heavily on the types of housing units proposed, with market-rate units generally generating fewer students than inclusionary (affordable) units. According to the most recent version of *Demographic Analyses and Enrollment Forecasts for the San Francisco Unified School District* (SFUSD, 2015), using a student generation ratio of 0.25 for new inclusionary units and 0.10 for market-rate units is appropriate to forecast the number of students generated by new residential development. This analysis uses the more conservative figure of 0.25 student per unit, regardless of unit type or affordability.

Project Site

There are no public schools on the project site. Public elementary schools near the site include Dr. George Washington Carver Elementary School, 0.5 mile away at 1360 Oakdale Avenue; and Malcolm X Academy, 0.6 mile away at 350 Harbor Road. Public middle schools in the near vicinity include Willie L. Brown Jr. Middle School, 1.1 miles away at 2055 Silver Avenue; KIPP Bayview Academy, 1.6 miles away at 1060 Key Avenue; and Martin Luther King Jr. Academic Middle School, 1.7 miles away at 350 Girard Street. The closest public high school is KIPP San Francisco College Preparatory, 0.4 mile away at 1195 Hudson Avenue. Thurgood Marshall Academic High School is located approximately 1.6 miles southwest of the project site at 45 Conkling Street.

Table 3.13-1 shows enrollment and capacity at these nearby public schools for the 2015–2016 school year.

Table 3.13-1: Enrollment at Public Schools near the Project Site, 2015–2016

School	Total Enrollment[a]	Capacity[b]
Dr. George Washington Carver Elementary School	220	500
Malcolm X Academy	85	500
Willie L. Brown Jr. Middle School	201	325
KIPP Bayview Academy	288	N/A
Martin Luther King Jr. Academic Middle School	509	525
KIPP San Francisco College Preparatory	312	N/A
Thurgood Marshall Academic High School	444	1,275

Notes: N/A = not available
[a] CDE, 2016
[b] SFUSD, 2009
Source: Data compiled by AECOM in 2016

Library

San Francisco

San Francisco Public Library (SFPL) provides library services in San Francisco, operating the Main Branch at Civic Center and 27 neighborhood branches. As of 2016, SFPL had a collection of 3,809,319 items, consisting of books, CDs, DVDs, sheet music, periodicals, government documents, and software. During the 2015–2016 fiscal year, SFPL had a total of 6,362,573 library visits; branch libraries averaged 150,945 library visits (SFPL, 2016a). Neighborhood branches provide reading rooms, book lending, information services, technological resources, and public programs, including youth-oriented programs (SFPL, 2016b). The average collection size across the branches for the 2015–2016 fiscal year was 44,393 items, although any SFPL branch can receive materials from the overall SFPL collection. A total of 10,778,428 items across all libraries circulated in 2015–2016.

In November 2000, San Francisco voters approved a $106 million bond measure to upgrade San Francisco's branch library system, and in November 2007, voters approved Proposition D, which authorized additional funding to improve the branches. The improvement program seeks to address seismic safety, access, code impacts, condition repairs, modernization, and hazardous materials (SFPL, 2016c).

Project Site

There are no public libraries at the project site. The SFPL branch nearest to all four properties on the project site is the Bayview Linda Brooks-Burton Branch, located 0.9 mile southwest of the site at 5075 Third Street. This branch is the only library in the Bayview Hunters Point neighborhood. Branch libraries in Portola and Visitacion Valley also serve the neighborhood's residents.

The Bayview Linda Brooks-Burton Branch library is open 7 days a week. The library building occupies 9,527 square feet, with two study rooms that are available on a first-come, first-served basis. The library has a community room that seats 35 people. Print and media collections are provided in English, Chinese, and Spanish. During the 2015–2016 fiscal year, this branch library had a collection of 45,085 items (including print and electronic) and circulated 110,811 items during 93,258 library visits (SFPL, 2016a).

The Bayview Linda Brooks-Burton Branch library opened in 2013 as part of the Branch Library Improvement Program. The new branch library, which received Leadership in Energy and Environmental Design (i.e., LEED) certification, was an expansion of the previous building, with more computers and room for an expanded collection to meet community needs (SFPL, 2016c).

3.13.2 Regulatory Framework

Federal

No federal plans, policies, regulations, or laws pertaining to public services are applicable to the proposed project or the variant.

State

California Fire Code

State fire regulations are set forth in California Health and Safety Code Section 13000 et seq., which include regulations governing construction and operation of buildings for fire safety. The code covers fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazard safety, storage and use of hazardous materials, provisions to aid fire responders, industrial processes, and other fire safety requirements for new and existing buildings.

California Vehicle Code Section 21806

Section 21086 of the California Vehicle Code requires that vehicles yield right-of-way to emergency vehicles and remain stopped until the emergency vehicles have passed. This allows emergency vehicles priority access along the right-of-way to facilitate emergency response.

California Government Code Section 65995 and California Education Code Section 17620

Section 17620 of the California Education Code authorizes school districts to levy a fee, charge, dedication, or other requirement against any development project for the construction or reconstruction of school facilities, provided that the district can justify the need for the fee.

Senate Bill (SB) 50 (Chapter 407, Statutes of 1998) instituted a program by which school districts can apply for State construction and modernization funds for new school facilities. SB 50 restricts the ability of cities and counties to require mitigation of impacts related to school facilities as a condition of approving new development. SB 50 also afforded school districts the authority to levy fees against new residential and commercial development to support the construction or reconstruction of school facilities that would support new development.

CEQA Section 21151 and California Education Code Section 17213

The *Guide to School Site Analysis and Development* was prepared by the California Department of Education (CDE) to provide criteria for locating school sites in California (CDE, 2000). With CDE approval, school districts can receive State funds for the acquisition of new school sites. CDE recommends school sites based on acreage, health and safety, environmental constraints, and land use concerns.

CDE recommends that a school district selecting a school site consider proximity to airports or to high-voltage power transmission lines, presence of toxic and hazardous substances or high-pressure gas lines, hazardous air emissions and facilities within one-quarter mile, and proximity to railroads. CEQA Section 21151.8 and Section 17213(b) of the Education Code identify environmental requirements for school projects that supplement CEQA's standard environmental analysis requirements. These additional requirements are intended to ensure that, before a school district approves a school project at a given site, the site is evaluated to identify the potential health effects of exposure to hazardous materials, wastes, emissions, and substances.

The school district as lead agency must consult with other agencies on the potential impacts of school siting before it considers a school project for approval. CEQA Section 21151.2 also requires that a school district notify the appropriate planning commission in writing regarding its intent to acquire title to property for a new school site or an addition to an existing school site. The planning commission would investigate the proposed site and submit its recommendations to the school district's governing board within 30 days of receiving notice. After the required consultation, the governing board must make written findings when taking action on the proposed school project.

CEQA does not restrict school districts from constructing schools in areas where they would be exposed to certain hazards. Construction of a school on such a site is subject to certain design and mitigation requirements, and the governing board of the school district must make findings to this effect. Even in an instance where certain hazards cannot be avoided or fully mitigated, a district can still approve construction of a school that would be subject to certain hazard exposure if alternative sites are similarly constrained or not available.

Local

San Francisco Fire Code

The San Francisco Fire Code was revised in 2013 to regulate and govern the safeguarding of life and property from fire and explosion hazards arising from the storage, handling, and use of hazardous substances, materials, and devices, and from conditions hazardous to life or property in the occupancy of buildings and premises; to provide for the issuance of permits, inspections, and other SFFD services; and to provide for the assessment and collection of fees for those permits, inspections, and services. SFFD reviews building plans to ensure that fire and life safety is provided and maintained in buildings that fall under its jurisdiction.

In coordination with the San Francisco Department of Building Inspection, SFFD conducts plan checks to ensure that all structures, occupancies, and systems outlined below are designed in accordance with the San Francisco Fire Code before a building permit is issued (SFFD, 2016b):

- assembly occupancies (including restaurants and other gathering places for 50 or more occupants);
- educational occupancies (including commercial day care facilities);
- hazardous occupancies (including repair garages, body shops, fuel storage, and emergency generator installation);
- storage occupancies where the potential exists for high-piled storage as defined by the Fire Code;
- institutional occupancies;
- high-rise buildings of all occupancies;
- residential occupancies, such as hotels, motels, lodging houses, residential care facilities, apartment houses, small- and large-family day care homes, and R-1 artisan buildings (excluding minor residential repairs such as kitchen and bath remodeling and dry-rot repair);
- certified family-care homes, out-of-home placement facilities, halfway houses, and drug and/or alcohol rehabilitation facilities;
- tents, awnings, or other fabric enclosures used in connection with any occupancy; and
- fire alarm and fire suppression systems.

San Francisco Police Code

The San Francisco Police Code includes regulations for various types of activities such as automobile use, permitting and licensing, use of ports, and disorderly conduct.

3.13.3 Impacts and Mitigation Measures

Significance Thresholds

The thresholds for determining the significance of impacts in this analysis are consistent with the environmental checklist in Appendix G of the State CEQA Guidelines, which has been modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the proposed project or the variant would result in a significant impact related to Public Services. Implementation of the proposed project or the variant would have a significant effect on Public Services if the proposed project or variant would:

- result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any public services such as:
  - fire protection,
  - police protection,
  - schools,
  - parks, or
  - other services.

Approach to Analysis

To determine whether the proposed project or variant would result in impacts on public services, the project's demands for police, fire, school, and library services were evaluated. The impact analysis considers only operation of the proposed project or variant, as routine demands for public services during the construction period would be similar to existing demands.

Demand for police and fire protection services was evaluated in the context of the addition of residents, employees, and property to the site, as well as project-related changes in access to and around the site. To determine the proposed project's or variant's demand for school services, SFUSD student-generation ratios for new households were utilized to determine the number of students expected to reside at the project site. Similarly, demand for library services was considered to be proportional to the number of project site residents.

The demand for services associated with the proposed project or variant was then compared to the appropriate service provider's planned capacity or service standard. For this analysis, SFUSD capacity was analyzed at the schools nearest to the project site. Although SFUSD prioritizes families' preferences for enrollment, students can be assigned to the school nearest their residences if the preferred schools do not have capacity (SFUSD, 2012). Where the project's demand for services would exceed the capacity of a service provider or would cause a service

standard to drop to unacceptable levels, the project was considered to result in a significant impact. Sources considered included annual reports, capital plans, and personal communications with service providers.

Park-related public services are addressed in Section 3.11, "Recreation."

Project Features

Both the proposed project and the variant would involve demolishing some of the existing buildings on the project site and constructing a mixed-use development that would include residential, commercial, institutional/ educational, research and development, parking, and open space uses. Implementation of the proposed project or variant would increase the residential and employment populations on the project site, resulting in a corresponding increase in demand for public services (e.g., fire protection, EMS, police protection, schools, and library services).

Impact Evaluation

Impact PS-1: The proposed project or variant would not increase demand for fire services in a manner that would result in the need for construction or alteration of fire protection facilities. ***(Less than Significant)***

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

Operation of the recreational, commercial, and institutional facilities proposed for the India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties under either the proposed project or the variant would not result in a substantial increase in demand for fire protection services. As in all areas within the City's jurisdiction, SFFD would respond to calls for service from these properties.

Although increased visitation to the properties may increase the number of calls for service, it is not anticipated that the proposed project or variant would substantially increase the need for fire protection and other emergency services to the point that construction of new fire department facilities would be needed. Many visitors to the India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties would be residents of the 700 Innes property, employees on the project site, or existing residents or employees of the surrounding neighborhood. Moreover, fire protection and emergency medical resources are regularly redeployed based on the need to maintain acceptable service ratios.

Both the proposed project and the variant are subject to the California and San Francisco Fire Codes, which include necessary utility and access requirements for fire protection and emergency services. The components of the proposed project or variant would be constructed according to State and local fire codes. Dilapidated structures that currently exist on-site were not built to State and local fire codes. The structures that would be restored or removed would reduce the potential on-site fire hazards relative to existing conditions. The proposed project or variant would not require providing new or altered fire protection facilities.

700 Innes Property

Development of the 700 Innes property would support approximately 3,400 residents and 924 employees under the proposed project, or 1,371 residents and 3,530 employees under the variant. The addition of residents and employees at this property would increase the demand for fire protection services.

SFFD seeks to meet response-time requirements of 5 minutes for fire suppression and 10 minutes for EMS. Approximate driving times to the project site from the nearest SFFD stations range from 4 minutes (Stations 17 and 25) to 9 minutes (Station 42). These times represent travel time for an ordinary driver and are conservative estimates of travel time for emergency service vehicles. SFFD would be able to serve the project in conformance with response standards (Rivera, pers. comm., 2017). Moreover, fire protection and emergency medical resources are regularly redeployed based on need to maintain acceptable service ratios.

State and local fire codes, including the 2010 California Building Standards Code and Fire Code, regulate the design of buildings, streets, parks, and landscaping. The proposed project or variant would be built in conformance with the San Francisco Fire Code, which requires providing adequate emergency access at the intersections that the proposed project or variant would improve, through the project site, and within the proposed buildings so that SFFD can comply with standard response times. The water volume and pressure needed for on-site fire suppression and the locations of hydrants would be determined during the final design phase, pursuant to SFFD's review and guidance. BUILD would work with SFFD to determine utility and access requirements for fire protection and emergency services for the proposed project or variant during operation.

The project site is located in an area that is accessible by existing SFFD personnel within desired response times, the components of the proposed project or variant would be constructed according to the California and San Francisco fire codes, and the proposed project or variant would not require providing new or altered fire protection facilities.

Overall Impact Conclusion

The proposed project and variant's operational impacts related to provision of fire protection services would be *less than significant.* No mitigation measures are necessary.

Impact PS-2: The proposed project or variant would not increase demand for police services in a manner that would result in the need for construction or alteration of law enforcement facilities. *(Less than Significant)*

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Recreational, commercial, and institutional facilities are proposed for the India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties. Development of the 700 Innes property would support approximately 3,400 residents and 924 employees under the proposed project, or 1,371 residents and 3,530 employees under the variant. Development of the 700 Innes property would also result in a new kindergarten through 8th grade (K-8) school. An increase in use by recreationists, employees, students, and residents would increase the demand for police protection at the project site.

Police protection resources are regularly redeployed within each district and, as necessary, between districts based on the need to maintain acceptable service ratios. If necessary, a school resource officer or other police resources would be allocated to a new school (Sainez, pers. comm., 2017). The district station boundary analysis report considered altering the boundaries of SFPD's 10 districts so that the allocation of police resources would be more consistent with the needs of each district. The Southern District was expanded, reducing the size of the Bayview District. The new Bayview District boundaries reduced the district's population and housing, partially to account

for the future increase in population and housing projected for the Bayview District and the associated increase in future police demand. The new boundaries reduced the projected housing growth in the Bayview District from 33 percent of citywide housing growth to 26.5 percent (SFOC, 2015b). By reducing the existing population and housing in the Bayview District, the boundary changes proposed in the district station boundary analysis report allow the Bayview District to provide adequate service to the district's future population and land uses. No new facilities or physical alterations to the Bayview Police District's existing facilities would be expected to be needed to meet the increased demand generated by the proposed project or variant.

Overall Impact Conclusion

Under either the proposed project or the variant, operational impacts related to provision of police protection services would be *less than significant.* No mitigation measures are necessary.

Impact PS-3: The proposed project or variant would not increase demand for school services in a manner that would result in the need for construction or alteration of school facilities. ***(Less than Significant)***

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

The India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties would not contain any residential or school uses and would not increase demand on SFUSD's school system once in operation.

700 Innes Property

SFUSD has adopted a student generation rate of 0.25 student per dwelling unit (SFUSD, 2015). A total of 1,240 residential units would be developed under the proposed project, resulting in the need to accommodate approximately 310 K-12 students in local schools. By contrast, 500 residential units would be developed under the variant, and at least 125 K-12 students would need to be accommodated in local schools. This analysis conservatively assumes that none of the school-age residents associated with the proposed project or variant are already enrolled in an SFUSD school and that none would enroll in private school.

A 50,000-square-foot K-8 school that could serve approximately 450 students is proposed as part of both the proposed project and the variant. The proposed school is anticipated to serve both the residents of the project site and school-age children from the surrounding community. Because the total combined number of elementary, middle, and high school students generated by the proposed project or variant would be less than the capacity of the proposed K-8 school, the capacity of the proposed school would be adequate to serve all elementary and middle school students generated by the proposed project or variant.

High school students residing on the project site would be located closest to KIPP San Francisco College Preparatory, 0.4 mile from the project site, and Thurgood Marshall Academic High School, 1.6 miles from the project site. Thurgood Marshall Academic High School is currently at 35 percent of the school's capacity and has room for 831 students. KIPP San Francisco College Preparatory is accepting applications. These schools would have capacity available to serve the high school students residing on the 700 Innes property.

The proposed project or variant would increase the residential population and SFUSD enrollment; however, BUILD would be required to pay fees to SFUSD (through the Department of Building Inspection) pursuant to

Section 17620 of the California Education Code. Section 65995(h) of the California Government Code determines that such fees are considered full and complete mitigation of the impacts of development on local school systems.

Overall Impact Conclusion

Because a new school could serve all K-8 students associated with the proposed project or variant, and because the project sponsor would be required to pay fees to SFUSD, the operational impacts related to provision of school services under the proposed project or variant would be *less than significant.* No mitigation measures are necessary.

Impact PS-4: The proposed project or variant would not increase demand for library services in a manner that would result in the need for construction or alteration of library facilities. *(Less than Significant)*

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

The India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties would not support any residents. As such, none of these properties would generate library users.

700 Innes Property

The Bayview Linda Brooks-Burton Branch of the SFPL is located approximately 0.9 mile from the project site. This branch opened in 2013 as part of the Branch Library Improvement Program. The program included an expansion of facilities to meet increased service demand in the Bayview neighborhood (SFPL, 2008). The total number of library visits to the Bayview Linda Brooks-Burton Branch during the 2015–2016 fiscal year was approximately 62 percent of the average number of visits to an SFPL branch. In addition, circulation was lower at this branch library than at other branches with similar collection sizes (SFPL, 2016a), suggesting that this branch could accommodate further growth.

The additional residents generated by the proposed project or variant would likely be accommodated by the Bayview Linda Brooks-Burton Branch Library and other branch libraries in the vicinity (Hayes, pers. comm., 2016). Funding for library services and facilities comes from voter-approved bond measures and the General Fund, which receives revenue from a range of sources, including property taxes and development fees. The proposed project or variant would contribute to library funding through property taxes and development fees that would be proportionate to the increased demand in library services.

Overall Impact Conclusion

The proposed project or variant would not require new or expanded library facilities. The operational impacts related to provision of library services under the proposed project or variant would be *less than significant.* No mitigation measures are necessary.

3.13.4 Cumulative Impacts

Impact-C-PS-1: The proposed project or variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would not substantially contribute to cumulative impacts related to public services. *(Less than Significant)*

The geographic scope for cumulative impacts on public services is the southeast quadrant of the City, within which the SFPD stations, SFFD stations, schools, and libraries that would serve the project site are located.

The proposed project or variant, when combined with the cumulative development projects listed in Table 3-1 in Section 3.0.3, "Format of the Environmental Analysis," would add approximately 11,000 residential units and 500,000 square feet of commercial/institutional uses to the project vicinity. This scale of development would increase demand for fire protection services, police protection services, schools, and libraries.

SFFD, SFPD, SFUSD, and SFPL would be able to accommodate the additional demand for public services that would be generated by the cumulative projects. The Candlestick Point–Hunters Point Phase II Shipyard Development Project EIR considered construction of a new SFFD station and reconfiguration of the existing SFPD Bayview Station and/or construction of a new SFPD facility as part of that project. Because of the proximity of the Hunters Point Shipyard to the project site, it is likely that staff members from these SFFD and SFPD facilities, when constructed, would also serve the project site (Rivera, pers. comm., 2017; Sainez, pers. comm., 2017). If the AWSS is extended to the Candlestick Point–Hunters Point development, and in doing so provides infrastructure along Innes Avenue, such an extension would benefit the proposed project or variant by providing additional firefighting water infrastructure available for use at the project site. This source of firefighting water infrastructure would supplement the on-site fire suppression infrastructure at the project site constructed as part of the proposed project or variant. The proposed project or variant would include a new school that would serve the future residents of the 700 Innes property as well as existing and future San Francisco residents. In addition, RPD and BUILD would be required to pay development impact fees to fund staffing and facilities at SFUSD schools and SFPL branches. For these reasons, the cumulative impact related to public services would be *less than significant.* No mitigation measures are necessary.

3.13.5 References

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3.14 BIOLOGICAL RESOURCES

This section describes the existing environmental and regulatory setting and addresses the potential impacts of the proposed project or variant related to biological resources. Information supporting the biological resources analysis is presented in Appendix K of this EIR. Comments regarding biological resources, including impacts on breeding shorebirds, migratory shorebirds, fish, and native plants, were received during the public scoping period in response to the Notice of Preparation. These comments are addressed in this section.

3.14.1 Environmental Setting

Soils, Hydrology, and Climate

The entire India Basin Open Space property and much of the land on the India Basin Shoreline Park, 900 Innes, and 700 Innes properties were created using fill. Soils in the study area are primarily urban complex (cut and fill) of 0–2 percent and 5–75 percent slopes (USDA SCS, 2010; USDA NRCS, 2010 and 2016). The study area contains two types of soils as mapped by the U.S. Department of Agriculture's Natural Resources Conservation Service: Urban land complex–Orthents, cut and fill, 5–75 percent slopes; and Urban land–Orthents, reclaimed complex, 0–2 percent slopes.

For further discussion of relevant soils in the region and on the project site, see Section 14, "Geology and Soils," of the Initial Study (Appendix A). For a discussion of relevant regional and project site hydrology, see Section 3.15, "Hydrology and Water Quality," and for a discussion of climate, see Section 3.7, "Air Quality," in this EIR.

Physical Habitat/Vegetation

Habitat is an area consisting of a combination of resources (e.g., food, cover, water) and environmental conditions (e.g., temperature, precipitation, presence or absence of predators and competitors) that promotes occupancy by individuals of a species and enables those individuals to survive and reproduce. Thus, habitat arises from interaction among soils, hydrology, climate, and vegetation. Soils, hydrology, and climate are addressed in other sections of this EIR; this habitat discussion includes information regarding vegetation.

San Francisco Bay Area

Habitat communities in the San Francisco Bay Area (Bay Area) consist primarily of Mediterranean plant associations, but vary depending on microclimate. Tidal marshland and open water habitat dominate the aquatic portions of San Francisco Bay (Bay), while nonnative grassland and oak savanna are the primary habitats in the East Bay. The Peninsula is dominated by urban, developed, landscaped, and ruderal habitats, while the North Bay is a mosaic of nonnative grassland, oak savanna, mixed forest, and redwood forest.

San Francisco

San Francisco is primarily developed. Undeveloped areas scattered throughout the City consist primarily of parks, stands of ornamental trees, and ruderal vegetation. Natural communities are limited in San Francisco, but small portions of coastal scrub habitat exist in undeveloped areas, inland of the City's western and eastern shorelines.

In addition, open water habitat surrounds San Francisco, and tidal marsh habitat begins to appear along the eastern shoreline of the City, heading toward the South Bay.

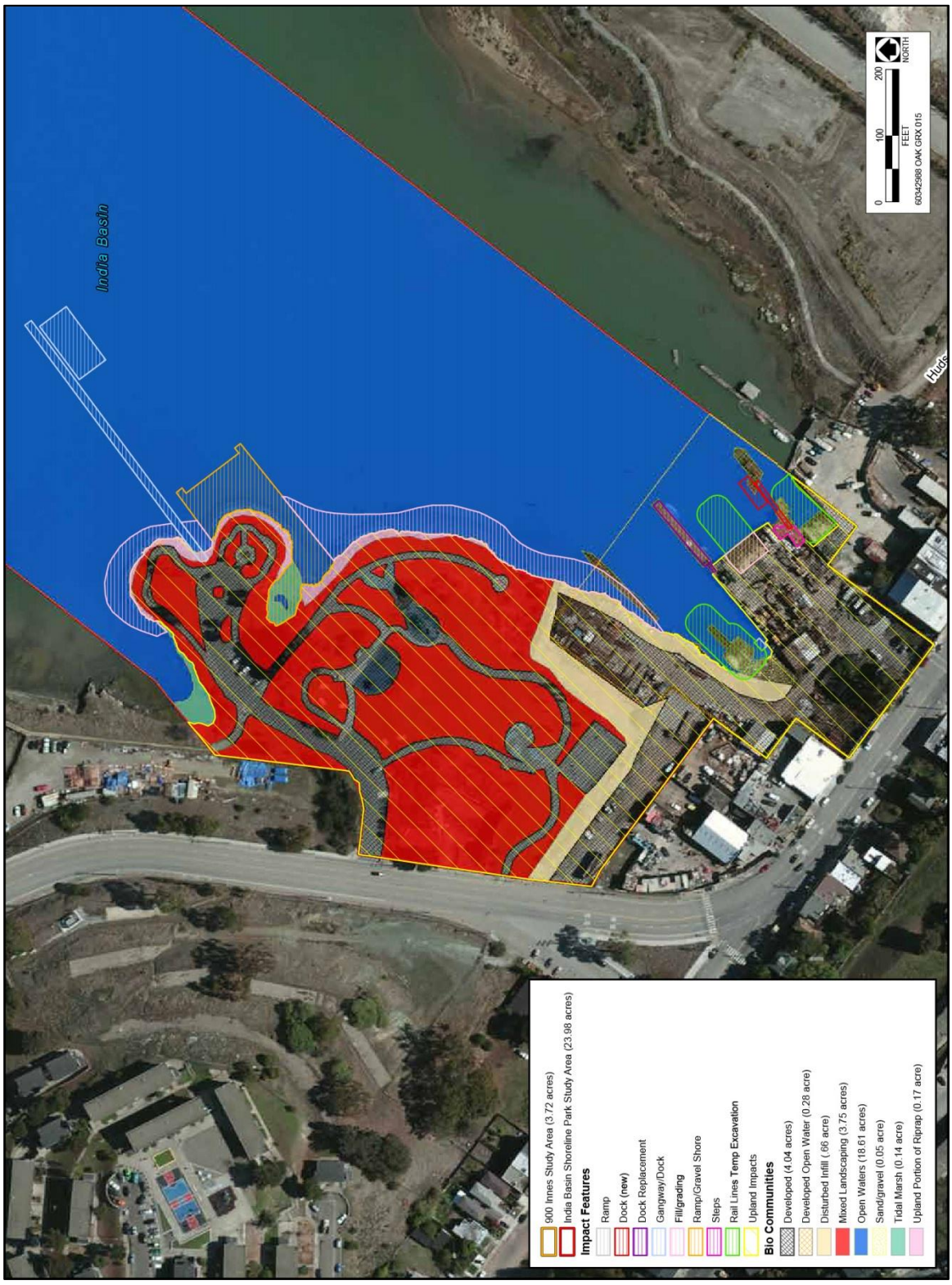
Project Site

Habitat communities on the project site consist of open water, tidal marsh, seasonal wetland, wetland swale, native coastal scrub, beach, and landscaped areas. Vegetation is discussed by project site property below. Table 3.14-1 summarizes the area of each habitat community observed at the project site. Detailed descriptions of these communities are provided in the biological resources assessments for the project site (San Francisco, 2017a and 2017b) (Appendix K). Figures 3.14-1 and 3.14-2 show the locations of each of these habitat communities on each project site property.

Table 3.14-1: Habitat Acreages at the Project Site

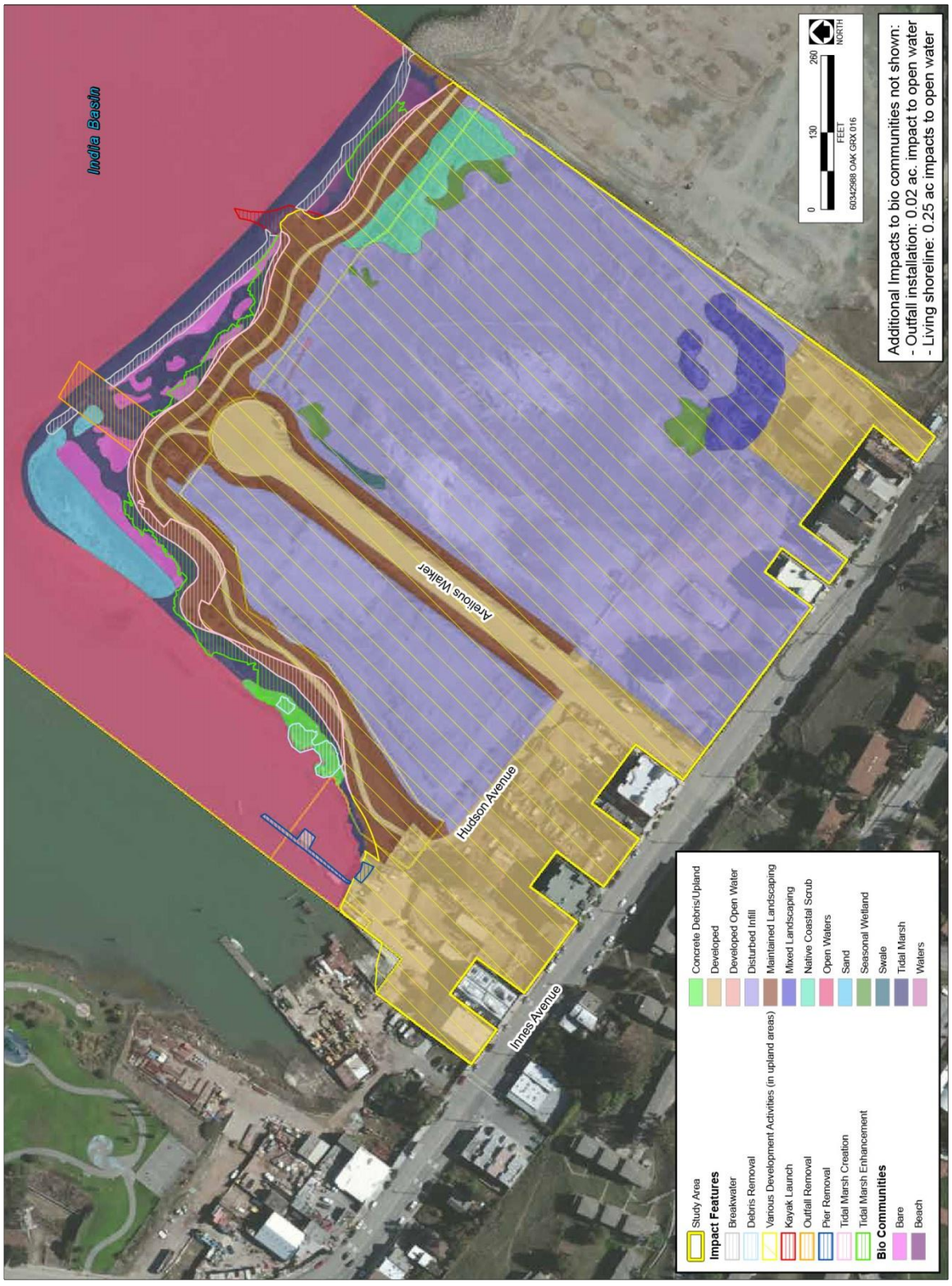
Habitat Type	Area of Project Site Property (acres)				
	India Basin Shoreline Park	900 Innes	India Basin Open Space	700 Innes	Total
Bare (above HTL)	0	0	0.01	0	0.01
Bare (below HTL)	0	0	0.52	0	0.52
Beach	0	0	0.11	0	0.11
Concrete debris (above HTL)	0	0	0.05	0	0.05
Concrete debris (below HTL)	0	0	0.13	0	0.13
Developed	2.11	1.93	0.47	5.39	9.90
Developed open water	0.01	0.27	0.01	0.03	0.32
Disturbed infill	0.45	0.21	0.23	14.72	15.61
Maintained landscaping	0	0	2.33	0.74	3.07
Mixed landscaping	3.75	0	0	0.58	4.33
Native coastal scrub	0	0	0.21	0.33	0.54
Open waters	17.35	1.26	22.59	0.39	41.59
Riprap (upland)	0.17	0	0	0	0.17
Sand (above HTL)	0	0	0.24	0	0.24
Sand (below HTL)	0	0	0.31	0	0.31
Sand/gravel	0	0.05	0	0	0.05
Seasonal wetland	0	0	0	0.26	0.26
Tidal marsh	0.14	0	1.91	0.02	2.07
Waters	0	0	0	0.01	0.01
Wetland swale	0	0	0	0.04	0.04
Total	**23.98**	**3.72**	**29.12**	**22.51**	**79.33**

Notes:
HTL = high-tide line
[1] Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the *Corps of Engineers Wetlands Delineation Manual* (USACE, 1987), are identified by the presence of hydrophytic vegetation, hydric soils, and wetland hydrology.
Sources: San Francisco, 2017a and 2017b



Source: San Francisco, 2017a; adapted by AECOM in 2017

Figure 3.14-1: Habitat Map of the India Basin Shoreline Park and 900 Innes Properties



Source: San Francisco, 2017b; adapted by AECOM in 2017

Figure 3.14-2: Habitat Map of the India Basin Open Space and 700 Innes Properties

India Basin Shoreline Park Property

The India Basin Shoreline Park property consists primarily of mixed landscaping, developed land, and disturbed infill. Mixed landscaping on the property is regularly mowed. Mixed landscaping and disturbed infill areas are dominated by ruderal, nonnative grass and herbaceous species with some shrubs and trees. Dominant grass and herbaceous species observed during site visits include wild oats (*Avena* sp., Not Listed [NL][1]), ripgut brome (*Bromus diandrus*, NL), foxtail chess (*B. madritensis*, Upland [UPL]), soft chess (*B. hordeaceus*, Facultative Upland [FACU]), milk thistle (*Silybum marianum*, NL), fennel (*Foeniculum vulgare*, NL), wild radish (*Raphanus sativus*, NL), and Himalayan blackberry (*Rubus armeniacus*, FACU), among other species.

Dominant trees and shrubs include silver wattle (*Acacia dealbata*, NL), California buckeye (*Aesculus californica*, NL), toyon (*Hetermeles arbutifolia*, NL), bush lupine (*Lupinus* sp., NL), Fremont cottonwood (*Populus fremontii* ssp. *fremontii*, Facultative Wetland [FACW]), and coast live oak (*Quercus agrifolia*, NL), among other species.

Smaller portions of tidal marsh, open water, and riprap occur along the shoreline of the India Basin Shoreline Park property. Riprap consists of boulder-sized rocks piled along the edge of the shoreline. Tidal marsh is dominated by salt grass (*Distichlis spicata*, Facultative [FAC]), alkali sea-heath (*Frankenia salina*, FACW), marsh jaumea (*Jaumea carnosa*, Obligate [OBL]), and pickleweed (*Salicornia pacifica*, OBL) (USACE, 2016).

In total, 42 trees were mapped on the India Basin Shoreline Park property. These trees included blackwood acacia (*Acacia melanoxylon*), blue gum (*Eucalyptus globulus*), Catalina ironwood (*Lyonothamnus floribundus*), Melaleuca (*Melaleuca* sp.), Lombardy poplar (*Populus nigra*), and California pepper (*Schinus molle*).

900 Innes Property

The 900 Innes property consists primarily of developed land and disturbed infill, with smaller portions of developed open water and open water habitat offshore. With the exception of a few ornamental trees, no vegetation exists on this property

India Basin Open Space Property

The India Basin Open Space property consists primarily of mixed landscaping onshore, as well as tidal marsh and open water offshore. As at India Basin Shoreline Park, tidal marsh is dominated by saltgrass, alkali sea-heath, marsh jaumea, and pickleweed. Species present in the mixed landscaping are the same as those described for the India Basin Shoreline Park property. In between portions of mixed landscaping, the India Basin Open Space property contains a more diverse mosaic of habitat types than the other project site properties, with small areas of native coastal scrub, sand, and beach habitats. Vegetation in the coastal scrub communities and along the edges of sand and beach habitats consists predominantly of yellow bush lupine (*Lupinus arboreus*, NL), silver bush lupine (*L. albifrons* var. *albifrons*, NL), telegraph weed (*Heterotheca grandiflora*, NL), and arroyo willow (*Salix lasiolepsis*, FACW). Six arroyo willows are present on the India Basin Open Space property.

[1] The abbreviations used here refer to the indicator statuses of plants listed in the Arid West 2016 Regional Wetland Plant List (USACE, 2016). OBL = Obligate, always found in wetlands (> 99 percent frequency of occurrence); FACW = Facultative Wetland, usually found in wetlands (67–99 percent frequency of occurrence); FAC = Facultative, equal occurrence in wetlands or nonwetlands (34–66 percent frequency of occurrence); FACU = Facultative Upland, usually occurs in nonwetlands (67–99 percent frequency of occurrence), but occasionally found in wetlands (1–33 percent frequency of occurrence); and UPL = Upland, almost never occurs in water or saturated soils. Use of the abbreviation "NL" means that the plant is not listed.

700 Innes Property

The 700 Innes property consists primarily of disturbed infill and developed land. Scattered throughout the property, especially along the edges, are mixed and maintained landscaping, seasonal wetland, wetland swale, open water, native coastal scrub, and human-made water features. Species present in landscaped areas and coastal scrub communities are similar to those described above under "India Basin Open Space Property." Typical plant species observed in seasonal wetlands on the 700 Innes property include cut leaf plantain (*Plantago coronopus*, FAC), water starwort (*Callitriche heterophylla* var. *heterophylla*, OBL), curly dock (*Rumex crispus*, FAC), and salt grass (FAC).

In total, 52 trees were mapped on the 700 Innes property. Surveyed trees on this property consist of 16 species: silver wattle, narrow-leaf peppermint (*Eucalyptus nicholii*), blue gum, Monterey cypress (*Hesperocyparis macrocarpa*), toyon, jacaranda (*Jacaranda mimosifolia*), southern magnolia (*Magnolia grandiflora*), myoporum (*Myoporum laetum*), Canary Island pine (*Pinus canariensis*), Monterey pine (*P. radiata*), Japanese cherry (*Prunus serrulata*), arroyo willow, Coast redwood (*Sequoia sempervirens*), queen palm (*Syagurus romanzoffianum*), water gum (*Tristaniopsis laurina*), and Siberian elm (*Ulmus pumila*).

Sensitive Biological Communities

Biological communities are assemblages of organisms that live within or use a variety of habitats for their range-of-life functions. Of the habitat communities discussed above, some are further identified as sensitive biological communities. Sensitive biological communities include habitats that fulfill special functions or have special values (e.g., greater biological diversity), such as wetlands, streams, and riparian habitat. Because wildlife is a major aspect of a biological community, this discussion of sensitive biological communities describes wildlife present in such communities.

San Francisco Bay Area

Sensitive biological communities in the Bay Area consist primarily of features associated with a water source, such as streams, wetlands, tidal marshes, and open water habitat. In addition, because of the prevalence of special-status species in the greater Bay Area, certain biological communities such as oak savanna, scrub, coastal scrub, or dune habitat may be considered sensitive for the regional or local presence of special-status species.

San Francisco

San Francisco is dominated by developed land, and its water features on land are primarily culverted streams and creeks that drain to the Bay and Pacific Ocean. Therefore, sensitive biological communities in San Francisco consist of limited tidal marsh and wetlands along the southeastern shoreline and open water habitat surrounding the City, which provide habitat for numerous species of birds, fish, and marine mammals. Numerous common and special-status species inhabit these wetland and open water features. Species that make tidal marshland particularly sensitive include the salt marsh harvest mouse (*Reithrodontomys raviventris*), Ridgway's rail (*Rallus obsoletus*), and California black rail (*Laterallus jamaicensis coturniculus*). Species that make open water habitat particularly sensitive include green sturgeon (*Acipenser medirostris*), steelhead (*Oncorhynchus* spp.), longfin smelt (*Spirinchus thaleichtys*), and numerous other endangered, threatened, or otherwise protected fish and marine mammal species.

India Basin Shoreline Park Property

The India Basin Shoreline Park property contains open water and tidal marsh habitats, which are both considered sensitive biological communities. Open water within this project site property includes India Basin, a tidal inlet connected to the Bay that forms the eastern boundary of the project site. Tidal marsh and mudflats are generally bounded by riprap. This is not a remnant tidal marsh community, as the site was previously open water. The tidal marsh onsite appears to have established subsequent to the deposition of a large quantity of fill material placed for the creation of the present-day India Basin Shoreline Park. Referred to by the California Department of Fish and Wildlife (CDFW) (DFG 1986) as northern coastal salt marsh, this community comprises herbaceous hydrophytes. Typically found along sheltered inland margins of bays and estuaries, this marsh type is subject to regular tidal inundation by saltwater for at least part of the year.

Tidal marsh vegetation observed on the India Basin Shoreline Park property was dominated by alkali sea-heath (FACW), marsh jaumea (OBL), and pickleweed (OBL). Substrates in this community were composed of fine sandy sediments but also contained large quantities of mixed fill consisting of brick, concrete, and other debris. No special-status wildlife species were observed on this property; wildlife and plan species observed on this property are listed in the biological resources assessment (Appendix K).

900 Innes Property

The 900 Innes property contains open water and developed open water habitats, which are both considered sensitive biological communities. Open water habitat is described above under "India Basin Shoreline Park Property." Developed open water within this project site property consists of two dilapidated piers and approximately 32 creosote-treated piles located in the Bay, offshore from this property near the terminus of Hudson Avenue and the San Francisco Bay Trail. Vegetation is only present in disturbed infill areas and developed areas; however, no wildlife was observed on this property during the site visit.

India Basin Open Space Property

The India Basin Open Space property contains open water, developed open water, and tidal marsh habitats. These sensitive biological communities are described above under "India Basin Shoreline Park Property" and "900 Innes Property." The India Basin Open Space property has much more tidal marsh habitat than India Basin Shoreline Park (Table 3.14-1). In addition, the India Basin Open Space property contains one drainage outfall.

700 Innes Property

The 700 Innes property is located close to the Bay shoreline and is mostly separated by the India Basin Open Space, which is under the jurisdiction of RPD and fronts the property and connects to the Bay. However, a small portion of the 700 Innes property located in the northwest corner and adjacent to the 900 Innes property connects the 700 Innes property to the Bay, as shown in Figure 2-2 of Chapter 2.0, "Project Description." This part of the property contains one dilapidated, wood-framed storage structure sitting on the concrete wharf that fronts a wooden dock that once was part of the Allemand Brothers Boat Yard. From this location, a pier and approximately eight associated creosote-treated piles extend into the Bay from the property. The 700 Innes property contains seasonal wetland, wetland swale, and waters, as described below. Four seasonal wetlands and one seasonal wetland swale are present on this project site property.

Seasonal Wetland and Wetland Swale

Seasonal wetland plant communities occur in swales and depressions that are ponded during the rainy season for a long enough time to support vegetation adapted to wetland conditions. Seasonal wetlands in California are highly variable in plant composition, depending on the length of ponding or inundation. They also generally lack the plant community assemblage typical of defined marshes and vernal pools. Seasonal wetlands on the 700 Innes property consist of depressions that have resulted from past construction and earthmoving activities; these areas lack the species assemblage of vernal pools. Typical plant species observed in seasonal wetlands on the 700 Innes property include cut leaf plantain (FAC), water starwort (OBL), curly dock (FAC), and salt grass (FAC). A great blue heron (*Ardea herodias*) was observed in one of the ponded seasonal wetlands during the site visit.

Waters

One unvegetated water features (waters) is present within the 700 Innes property. This feature is a linear drainage ditch that runs perpendicular to Arelious Walker Drive and leads into a seasonal wetland near the cul-de-sac. This feature appears to be connected to the Bay either directly (via culvert) or indirectly (via surface and/or subsurface flows). No wildlife species were observed in ponded waters or the drainage ditch within the project site during the site visit.

Wetlands and Waters of the United States

Wetlands and waters of the United States and waters of the State are protected as hydrological resources, but also often provide habitat for common and special-status species. The following discussion describes the five types of water features present in the project site, as listed in Table 3.14-1: open water, developed open water, tidal marsh, seasonal wetland, wetlands swale, and waters.

San Francisco

Most of San Francisco's creeks are buried underground in culverts or filled, so most waters are linked to the City's combined sewer system, which flows to the Pacific Ocean or into the Bay. Wetlands and waters of the United States and waters of the State in San Francisco that are not connected to this system occur primarily on the edges of the Bay because of the hydrologic characteristics there.

Project Site

A jurisdictional delineation was conducted to determine whether any wetlands and waters potentially subject to jurisdiction by the U.S. Army Corps of Engineers (USACE), the San Francisco Bay Regional Water Quality Control Board (RWQCB), BCDC, or CDFW were present on the project site. The assessment was based on the presence of wetland plant indicators, observed indicators of wetland hydrology, and/or wetland soils. Any potential wetland areas were identified as areas dominated by plant species with a wetland indicator status of OBL, FACW, or FAC as presented on the USACE National Wetlands Plant List (San Francisco, 2015a and 2015b).

Wetlands and waters of the United States and waters of the State include all areas listed under "Sensitive Biological Communities" above, including developed open water, open waters, seasonal wetland, wetland swale,

tidal marsh (including areas of bare ground and beach), and waters. Table 3.14-1 shows the amount of wetlands and waters of the United States and waters of the State located within the four project site properties. Figure 3.14-2 shows the locations of wetlands on the project site.

Special-Status Species

Habitat, whether aquatic or terrestrial, supports ecological functions and processes to preserve biological communities (i.e., wildlife) that live within it for all or a portion of their life cycle. Special-status species, whether plants, wildlife, or fish, are considered sufficiently rare that they require special consideration and/or protection and have been or should be listed as rare, threatened, or endangered by the federal and/or State governments. The following discussion focuses on the occurrence or potential for occurrence of special-status species at the project site.

Special-Status Plants on the Project Site

India Basin Shoreline Park Property

Sixty-one special-status plant species have been documented in the vicinity of the India Basin Shoreline Park property. The biological resources assessment for the India Basin Shoreline Park and 900 Innes sites (Appendix K) summarizes the potential for each of these species to occur at this property.

Seven of the 61 special-status plant species have a low potential to occur within tidal marsh habitats (San Francisco, 2016a). The existing tidal marsh on the India Basin Shoreline Park property is relatively young and low quality, given its location on fill soils placed in the Bay over the past 50 years; as such, special-status plants typically found in salt marshes are unlikely to occur on the low-quality fill soils in this on-site community. A total of 35 special-status plant species documented in the vicinity have the potential to occur within coastal scrub and/or sand dune habitat; however, India Basin Shoreline Park does not contain this habitat type. The remaining 19 species were determined to have no potential to occur at India Basin Shoreline Park. No special-status plant species have a moderate or high potential to occur.

The India Basin Shoreline Park property is unlikely to support any of the special-status plant species documented in the vicinity, primarily because of a lack of suitable habitat. For instance, this property does not support serpentine soils, coniferous forest, or valley and foothill grassland, which are required habitats for several of the special-status species documented nearby. Habitats at the project site are based on fill soils and are highly disturbed; both of these features lower the potential for the India Basin Shoreline Park property to support sensitive plant species.

The site assessment at the India Basin Shoreline Park property occurred during the blooming period for 28 of the 61 special-status plant species with a potential to occur in these areas, but none of the potentially blooming species were observed. No special-status plant species were observed during the surveys.

In addition, on May 24, 2016, WRA Environmental Consultants (WRA) conducted a rare-plant survey targeting the California seablite (*Suaeda californica*), which is federally listed as endangered. This survey was conducted following input received from the U.S. Fish and Wildlife Service (USFWS) and USACE. WRA did not locate any California seablite plants.

900 Innes Property

The site assessment at the 900 Innes property occurred during the blooming period for 28 of the 61 special-status plant species with a potential to occur in the area, but none of the potentially blooming species were observed. No special-status plant species were observed during the surveys. Because of the lack of suitable habitat at the 900 Innes property, which consists of developed land, disturbed infill, sand/gravel, open water, and developed open water, no special-status plant species have the potential to occur on this property.

India Basin Open Space and 700 Innes Properties

In total, 51 special-status plant species have been documented in the vicinity of the India Basin Open Space property. The biological resources assessment for the India Basin Open Space and 700 Innes properties (Appendix K) summarizes the potential for each of these species to occur on this property.

Seven of the 51 special-status plant species have low potential to occur within tidal marsh habitats (San Francisco, 2016a). The existing tidal marsh on the India Basin Open Space property is relatively young and low quality, given its location on fill soils placed in the Bay over the past 50 years; therefore, special-status plants typically found in salt marshes are unlikely to occur on the low-quality fill soils in this on-site community. A total of 35 special-status plant species documented in the vicinity have the potential to occur within coastal scrub and/or sand dune habitat. The existing native coastal scrub habitat present at the India Basin Open Space property is relatively young and low quality, having only formed over approximately 20 years as a result of construction-related soil deposition on the project site. Therefore, these 35 special-status plant species are unlikely to occur on this project site property. The remaining nine species were determined to have no potential to occur on the India Basin Open Space property. No special-status plant species have a moderate or high potential to occur. As stated previously, the India Basin Open Space property is unlikely to support any of the special-status plant species documented in the vicinity, primarily because of a lack of suitable habitat.

The site assessment at the India Basin Open Space property occurred during the blooming period for 42 of the 51 special-status plant species with a potential to occur in the area, but none of the potentially blooming species were observed. No special-status plant species were observed during the surveys. In addition, on May 24, 2016, WRA conducted a rare-plant survey targeting the California seablite, which is federally listed as endangered and has been previously documented on the IBOS property. This survey was conducted following input received from USFWS and USACE. WRA did not locate any California seablite plants.

Special-Status Wildlife at the Project Site

Special-Status Terrestrial Species

Twenty-three terrestrial special-status species of wildlife have been recorded in the vicinity of the project site. The respective biological resources assessments for the India Basin Shoreline Park and 900 Innes properties and the India Basin Open Space and 700 Innes properties (Appendix K) summarize the potential for each of these species to occur at the project site. No special-status wildlife species were observed on the project site during the site assessment. None of the special-status wildlife species have high potential to occur at the site; however, two species, Ridgway's rail (*Rallus obsoletus*) and Alameda (South Bay) song sparrow (*Melospiza melodia pusillula*), have a moderate potential to occur at the project site.

Of the 23 special-status species, 21 species are precluded from occurring within the project site because the site lacks suitable tidal marsh, eelgrass, or vegetated water habitats and experiences high levels of human disturbance. The two special-status wildlife species that has a moderate potential to occur at the project site is discussed below.

Ridgway's Rail

Ridgway's Rail is a federally endangered, state endangered, and CDFW Fully Protected species that nests in low portions of coastal wetlands and tidal sloughs dominated by cordgrass (*Spartina* spp.) and gumweed. Factors important for breeding include well-developed sloughs and secondary tidal channels, extensive cordgrass stands, intertidal mudflats, and dense salt marsh vegetation for cover, nest sites, and brooding areas. Tidal mudflats for foraging are largely nonexistent within the Study Area, and pickleweed and gumplant is not of sufficient height or extent to provide cover for nesting. The nearest potential nesting habitat is at Heron's Head Park approximately 500 feet north of the planned Marineway associated with India Basin Shoreline Park. Typical disturbance buffers surrounding Ridgway's rail nesting habitat are approximately 700 feet.

India Basin Shoreline Park Property

Tidal marsh along the eastern shore of the India Basin Shoreline Park property does not provide suitable nesting or foraging habitat for Ridgway's rail; however, the Marineway associated with the India Basin Shoreline Park Property will be located within 700 feet (typical disturbance buffer for Ridgway's rail) of Heron's Head Park, which provides nesting and foraging habitat for Ridgway's rail.

India Basin Open Space, 900 Innes, and 700 Innes Properties

No nesting or foraging habitat is present at the India Basin Open Space, 900 Innes, and 700 Innes properties, and these properties are located more than 700 feet from Heron's Head Park.

Alameda Song Sparrow

The Alameda song sparrow is a CDFW Species of Special Concern and USFWS Bird of Conservation Concern that nests in tidal marsh vegetation and adjacent weedy vegetation on levees. This bird occurs primarily in salt marshes of the southern Bay and requires low, dense vegetation such as gumweed (*Grindelia* spp.) for cover and nesting. Alameda song sparrow is known to nest at Heron's Head Park, which is located approximately 0.25 mile north of the project site and contains suitable tidal marsh habitat.

India Basin Shoreline Park Property

Tidal marsh along the eastern shore of the India Basin Shoreline Park property may provide suitable nesting and foraging habitat for Alameda song sparrow.

900 Innes and 700 Innes Properties

No nesting or foraging habitat is present at the 900 Innes or 700 Innes property; however, this species may forage or nest in surrounding tidal marsh vegetation.

India Basin Open Space Property

Tidal marsh along the shore of the India Basin Open Space property may provide suitable foraging habitat for Alameda song sparrow; however, tidal marsh in this area does not contain vegetation of suitable height or density to provide nesting habitat.

Special-Status Fish Species

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Nine special-status species of fish have been recorded in the vicinity of the proposed project. The biological resources assessments for the proposed project (Appendix K) summarize the potential for each of these species to occur on the proposed project.

No special-status fish species were observed in the tidal portions of the proposed project during the site assessment. None of the special-status fish species have a high potential to occur on project site, but three have a moderate potential to occur: green sturgeon, Central California Coast steelhead Evolutionarily Significant Unit (ESU) (*Oncorhynchus mykiss irideus*), and longfin smelt. Pacific herring (*Clupea pallasii*) also has a moderate potential to occur in open water at the project site, but does not have a special-status designation. However, Pacific herring is a fishery/ecosystem component managed under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) and is managed under a CDFW Fishery Management Plan. Therefore, Pacific herring is referred to in this biological resources section as a special-status fish species.

Open water habitat within the project site is Essential Fish Habitat (EFH) and designated critical habitat for green sturgeon (74 *Federal Register* [FR] 52300–52351, October 9, 2009) and salmonids (70 FR 52488–52586, September 2, 2005) including Central California Coast steelhead and Chinook salmon (*Oncorhynchus tshawytscha*). Although no other special-status fish species have the potential to spawn at the project site, this area may be used for foraging, cover, migration, and rearing. In addition, designated critical habitat and EFH are present. The National Marine Fisheries Service (NMFS) regulates both EFH and federally listed anadromous species, including green sturgeon and salmonids.

Six of the nine special-status fish species recorded in the vicinity are precluded from occurring the project sitebecause the area lacks suitable tidal marsh, eelgrass, or vegetated water habitats and experiences high levels of human disturbance. The three special-status fish species (and Pacific herring, considered special-status for purposes of this EIR) that have a moderate potential to occur within the project site and EFH are discussed below.

Green Sturgeon

The green sturgeon is federally listed as threatened. The southernmost spawning population of green sturgeon is in the Sacramento River, with the principal spawning area located in the lower Feather River (Moyle, 2002). Spawning populations of green sturgeon in the San Joaquin River are presumed to have been lost in the past 25–30 years. Green sturgeon are primarily marine species, entering freshwater rivers mainly to spawn, although early life stages may be spent in freshwater for up to 2 years (Moyle, 2002). Adults typically migrate into freshwater from late February through late July. Spawning occurs from March to July, reaching peak levels from mid-April to mid-June (Emmett et al., 1991). Green sturgeon prefer deep pools in large, turbulent, freshwater river

mainstreams to spawn (Moyle et al., 1992). Juvenile green sturgeon emigrate to the sea primarily during the summer and fall before the end of their second year (Emmett et al., 1991).

The project site does not contain green sturgeon spawning habitat and is out of the species' spawning range; however, sturgeon may be present in Bay waters throughout the year and may use open water habitat on the project site for cover, foraging, or pass-through during migration. The project site is also designated critical habitat for this species (71 FR 17757, April 7, 2006).

Central California Coast Steelhead Evolutionarily Significant Unit

The Central California Coast steelhead ESU is federally listed as threatened. It includes all naturally spawned populations of steelhead (and their progeny) in California streams from the Russian River to Aptos Creek, and the drainages of San Francisco and San Pablo bays eastward to the Napa River (inclusive), excluding the Sacramento–San Joaquin River Basin. Steelhead typically migrate to marine waters after spending 2 years in freshwater, although they may stay up to 7 years. They then reside in marine waters for 2–3 years before returning to their natal streams to spawn as 4- or 5-year-olds. Steelhead adults typically spawn between December and June. In California, females typically spawn twice before they die. Preferred spawning habitat for steelhead is in perennial streams with cool to cold water temperatures, high levels of dissolved oxygen, and fast-flowing water. Abundant riffle areas (shallow areas with gravel or cobble substrate) for spawning and deeper pools with sufficient riparian cover for rearing are necessary for successful breeding.

The project site does not contain spawning habitat; however, steelhead may be present in Bay waters throughout the year and may use open water habitat within the project site for cover, foraging, or pass-through during migration to spawn in creeks and rivers of the South Bay. Eelgrass has been observed on the project site during previous years; however, no eelgrass has been observed during recent surveys. The project site is also designated critical habitat for the Central California Coast steelhead ESU (70 FR 52630, September 2, 2005).

Longfin Smelt

Longfin smelt is a federal candidate for listing, State listed as threatened, and a CDFW Species of Special Concern. This pelagic, estuarine fish ranges from Monterey Bay northward to Hinchinbrook Island, Prince William Sound, Alaska. As this species matures in the fall, adults found throughout the Bay migrate to brackish water or freshwater in Suisun Bay, Montezuma Slough, and the lower reaches of the Sacramento and San Joaquin rivers. Spawning is believed to take place in freshwater. In April and May, juveniles are believed to migrate downstream to San Pablo Bay. Juveniles tend to inhabit the middle and lower portions of the water column. This species tends to be abundant near freshwater outflow, where higher quality nursery habitat occurs and potential feeding opportunities are greater.

The project site does not contain spawning habitat and is out of the spawning range of longfin smelt. However, smelt may be present in Bay waters throughout the year and may use open water habitat within the project site for cover and foraging or pass-through during migration.

Pacific Herring

Pacific herring, a Magnuson-Stevens Act–managed species, as well as a CDFW-managed species, is a coastal marine fish that uses large estuaries for spawning and early rearing habitat. Although this species is not listed as a

sensitive species, it is of note because it is an important commercial fishery species in the Bay. Based on spawning biomass (an estimate of the number of spawning fish), the Bay estuary is the most important spawning area for eastern Pacific populations of the species and is the largest herring fishery in California (CDFW, 2015). Pacific herring supports a commercial fishery, primarily for roe (herring eggs) but also for fresh fish, bait, and pet food. In the Bay, the Pacific herring fishery is the last remaining commercial finfish fishery (BIES, 2003). The peak spawning period in San Francisco and Tomales bays is from January to March (Miller and Schmidtke, 1956), and CDFW regulates in-water work that may negatively affect spawning.

The concrete debris and piles present in developed open water at the project site may provide suitable spawning habitat for Pacific herring. Based on past data (CDFW, 2015; San Francisco, 2015a), spawning appears to be unlikely in most years; however, spawning may occur within the project site when conditions are suitable.

Marine Mammals

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

No haul-outs for marine mammals are located at the India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes properties. However, there is a low potential for marine mammals, such as Pacific harbor seal (*Phoca vitulina richardii*) and California sea lion (*Zalophus californianus*), to use open water habitats at the project site for foraging.

Pacific harbor seal is a permanent Bay resident, routinely seen in the Bay and at haul-out sites on islands and on the mainland throughout the Bay. Pacific harbor seals are protected under the Marine Mammal Protection Act (MMPA). Pacific harbor seal has established colonies at Castro Rocks in San Pablo Bay, Yerba Buena Island in the Central Bay, and Mowry Slough in the South Bay (NMFS, 2007). There is a year-round seal haul-out on Yerba Buena Island's southeastern corner. Pupping season for Pacific harbor seals in the Bay spans from approximately March 15 through May 31, with pup numbers generally peaking in late April or May. The current Pacific harbor seal population in the San Francisco Bay/Sacramento–San Joaquin Delta (Bay-Delta) is estimated at between 500 and 700 individuals (NMFS, 2007). Pacific harbor seal feeds in the deepest waters of the Bay, with the region from the Golden Gate Bridge to Treasure Island and south to the San Mateo Bridge being the principal feeding site (Kopec and Harvey, 1995).

Like the harbor seal, the California sea lion is a permanent resident in the Bay-Delta and is protected by the MMPA. A common, abundant marine mammal, it is found all along the western coastline, generally within 10 miles of shore. California sea lion occurs in the Bay-Delta in its highest numbers while migrating to and from its primary breeding areas on the Farallon and California Channel islands, and when Pacific herring and salmon inhabit Bay-Delta waters to spawn or migrate to upriver spawning areas. California sea lions haul out on offshore rocks and sandy beaches, and onto floating docks, wharves, vessels, and other human-made structures in the Bay and coastal waters of the State. In the Bay, California sea lion is known to occur at Angel Island and is common on the San Francisco waterfront, occupying the docks of Pier 39 (USACE, 2011). No pupping has been observed in the Bay and there are no known rookeries in the Bay (USACE, 2011).

Wildlife Movement Corridors

San Francisco Bay Area

Terrestrial habitat throughout the Bay Area ranges from high to low quality and varies in accessibility and continuity for wildlife movement. Aquatic habitat in the form of tidal marshes and wetland habitats along the Bay shoreline and waters offshore provides wildlife movement corridors for numerous fish and bird species. In addition, the Pacific Flyway encompasses the entire West Coast, and migrating bird species utilize the tidal marshland in the Bay Area for foraging and resting.

San Francisco

Terrestrial habitat in San Francisco is limited and generally of low quality, accessibility, and continuity for wildlife movement. However, aquatic habitat in the form of tidal marshes and wetland habitats along San Francisco's eastern and northern shorelines and waters offshore provides wildlife movement corridors for fish and bird species.

Project Site

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

The quality of tidal marsh and open water habitat at the project site is poor compared to other tidal marsh and open water habitat in the region, such as Heron's Head Park approximately 0.25 mile to the north. However, these properties likely still function as wildlife corridors for fish and bird species. In addition, landscaped areas and ornamental trees in these areas may provide foraging and resting habitat for migrating birds. No eelgrass beds have been observed during recent surveys within the open water habitat at the project site.

Regulated Trees

Project Site

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

San Francisco regulates certain trees through a permit process. Regulated trees are those in or near the public right-of-way under the jurisdiction of San Francisco Public Works (SFPW) and trees that it has designated as landmarked (Article 16 of the Public Works Code). The only trees subject to regulation in the project area are located on the 700 Innes property; trees on RPD and Port of San Francisco (SF Port) property are not regulated. Of the 52 trees on the 700 Innes property, 10 trees are considered "significant trees" (e.g., trees of particular size within 10 feet of the public right-of-way) and 26 are considered "street trees," trees located within the public right-of-way.

3.14.2 Regulatory Framework

Federal

Federal Endangered Species Act

The federal Endangered Species Act (FESA) protects the fish and wildlife species and habitats that have been identified by USFWS or NMFS as threatened or endangered. The term "endangered" refers to species, subspecies, or distinct population segments that are in danger of extinction through all or a significant portion of their ranges. The term "threatened" refers to species, subspecies, or distinct population segments that are likely to become endangered in the near future.

The FESA is administered by USFWS and NMFS. In general, NMFS is responsible for protecting FESA-listed marine species and anadromous fishes, whereas listed, proposed, and candidate wildlife, plant species, and freshwater fish species are under USFWS jurisdiction. "Take" of listed species is prohibited to protect endangered and threatened species, but can be authorized through either the Section 7 consultation process (for actions by federal agencies) or the Section 10 permit process (for actions by nonfederal agencies). The FESA defines "take" as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

Federal agency actions include activities that are located on federal land or are conducted by, funded by, or authorized by a federal agency (including issuance of federal permits and licenses). Under Section 7 of the FESA, the federal agency conducting, funding, or permitting an action (the federal lead agency) must consult USFWS and/or NMFS, as appropriate, to ensure that the proposed action would not jeopardize endangered or threatened species or destroy or adversely modify designated critical habitat. If a proposed project "may affect" a listed species or designated critical habitat, the lead agency is required to prepare a biological assessment evaluating the nature and severity of the expected effect. In response, USFWS or NMFS issues a biological opinion determining whether the proposed action:

(1) may either jeopardize the continued existence of one or more listed species (jeopardy finding) or result in the destruction or adverse modification of critical habitat (adverse modification finding), or

(2) would not jeopardize the continued existence of any listed species (no jeopardy finding) or result in adverse modification of critical habitat (no adverse modification finding).

Green sturgeon (federally listed as threatened), Central California Coast steelhead ESU (federally listed as threatened), and longfin smelt (federal candidate species) all have the potential to occur at the project site.

Critical Habitat

Under the FESA, the Secretary of the Interior (or the Secretary of Commerce, as appropriate) formally designates critical habitat for certain federally listed species and publishes these designations in the *Federal Register*. Critical habitat is not automatically designated for all federally listed species; thus, many listed species have no formally designated critical habitat. Critical habitat is defined as the specific areas that are essential to the conservation of a federally listed species, and that may require special management consideration or protection.

Critical habitat is determined using the best available scientific information about the physical and biological needs of the species. These needs, or primary constituent elements, include:

- space for individual and population growth and for normal behavior;
- food, water, light, air, minerals, or other nutritional or physiological needs;
- cover or shelter;
- sites for breeding, reproduction, and rearing of offspring; and
- habitat that is protected from disturbance or is representative of the historical geographic and ecological distribution of a species.

Critical habitat occurs on the project site in the form of open water and developed open water habitat for green sturgeon and steelhead.

Essential Fish Habitat

EFH is regulated through NMFS, a division of the National Oceanic and Atmospheric Administration. Protection of EFH is mandated through changes to the Magnuson-Stevens Act that were implemented in 1996 to protect the loss of habitat necessary to maintain sustainable fisheries in the United States. The Magnuson-Stevens Act defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (Title 16, Section 1802[10] of the U.S. Code [16 USC 1802(10)]). NMFS further defines EFH as areas that "contain habitat essential to the long-term survival and health of our nation's fisheries" (NMFS, 2007). EFH can include the water column, certain bottom types such as sandy or rocky bottoms, vegetation such as eelgrass or kelp, or structurally complex coral or oyster reefs. Under regulatory guidelines issued by NMFS, any federal agency that authorizes, funds, or undertakes action that may affect EFH is required to consult with NMFS (Title 50, Section 600.920 of the Code of Federal Regulations [50 CFR 600.920]). EFH occurs on the project site in the form of open water and developed open water habitat.

Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (16 USC 703, Supplement I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Migratory birds have the potential to nest and forage at the project site.

Marine Mammal Protection Act

The MMPA was enacted on October 21, 1972. This law prohibits, with certain exceptions, the "take" of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the United States. Marine mammals have the potential to occur at the project site.

Code of Federal Regulations (Wetlands and Waters Definition)

The term "waters of the United States," as defined in the Code of Federal Regulations (33 CFR 328.3[a]; 40 CFR 230.3[s]), includes:

(1) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide. All interstate waters including interstate wetlands. (Wetlands are defined by the federal government [33 CFR 328.3(b)] as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.)

(2) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mud flats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters which are or could be used by interstate or foreign travelers for recreational or other purposes; or from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or which are used or could be used for industrial purposes by industries in interstate commerce.

(3) All impoundments of waters otherwise defined as waters of the United States under the definition.

(4) Tributaries of waters identified in paragraphs (1) through (4).

(5) Territorial seas.

(6) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6).

Wetlands are a subset of waters of the United States and receive protection under Section 404 of the Clean Water Act (CWA). The federal definition of wetlands is the following:

> Wetlands are areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Open water, developed open water, seasonal wetland, wetland swale, and other waters exist within the project site.

The regulations and policies of various federal agencies—such as USACE, the U.S. Environmental Protection Agency, USFWS, and NMFS—mandate that filling wetlands be avoided unless it can be demonstrated that no practicable alternatives exist. USACE has primary federal responsibility for administering regulations that concern waters and wetlands. In this regard, USACE acts under two statutory authorities: Sections 9 and 10 of the Rivers and Harbors Act, and CWA Section 404.

Rivers and Harbors Act Sections 9 and 10

The Rivers and Harbors Act (Sections 9 and 10) governs specified activities in "navigable waters." Sections 9 and 10 have been used to preserve wetlands and limit unrestricted waterfront development. Section 9 requires a permit from USACE for the construction of any bridge, dam, dike, or causeway in or over any navigable water of the United States. Section 10 bars any unauthorized obstruction to the navigable capacity of "any of the waters of the

United States," and makes it unlawful to excavate or fill "or in any manner to alter or modify" any navigable water without USACE approval.

Clean Water Act Section 404

Section 404 of the CWA governs the fill of waters of the United States, including wetlands. USACE requires that a permit be obtained if a project proposes to place fill in navigable waters and/or to alter waters of the United States below the ordinary high-water mark in nontidal waters.

Clean Water Act Section 401

Section 401 of the CWA requires compliance with State water quality standards for actions within State waters. Compliance with the water quality standards required under Section 401 is a condition for issuance of a Section 404 permit. Under Section 401 of the CWA, every applicant for a federal permit or license for any activity that may result in a discharge to a water body must obtain a State water quality certification that the proposed activity would comply with State water quality standards.

Executive Order 11990: Protection of Wetlands

The federal government also supports a policy of minimizing the destruction, loss, or degradation of wetlands. Executive Order 11990 (May 24, 1977) requires that each federal agency take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. As primary screening, the U.S. Department of Housing and Urban Development or grantees must verify whether the project is located within wetlands identified on the National Wetlands Inventory or else consult directly with USFWS staff.

State

California Endangered Species Act

Under the California Endangered Species Act (CESA), CDFW has the responsibility for maintaining a list of threatened and endangered species (California Fish and Game Code, Section 2070). CDFW also maintains a list of "candidate species," which are species formally noticed as being under review for addition to either the list of endangered species or the list of threatened species. In addition, CDFW maintains lists of "species of special concern," which serve as watch lists.

The CESA prohibits the take of plant and animal species designated by the California Fish and Game Commission as either threatened or endangered in California. "Take" in the context of the CESA means to hunt, pursue, kill, or capture a listed species, as well as any other action that may result in adverse impacts when attempting to take individuals of a listed species. The take prohibitions also apply to candidates for listing under the CESA. However, Section 2081 of the CESA allows CDFW to authorize exceptions to the State's take prohibition for educational, scientific, or management purposes.

Under the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any State-listed endangered or threatened species could be present on the project site and whether the project could

have a significant impact on the species. In addition, CDFW encourages informal consultation on any proposed project that could affect a candidate species. Finally, CDFW asserts jurisdiction over wetlands when they are subject to streambed alteration agreements (California Fish and Game Code Sections 1600–1616) or they support State-listed endangered species. Longfin smelt (State-listed as threatened) has the potential to occur at the project site.

California Native Plant Protection Act

State listing of plant species began in 1977 with the passage of the California Native Plant Protection Act (NPPA), which directed CDFW to carry out the Legislature's intent to "preserve, protect, and enhance endangered plants in this state." The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare and to require permits for collecting, transporting, or selling such plants. The CESA expanded on the original NPPA and enhanced legal protection for plants. The CESA established categories for threatened and endangered species, and grandfathered all rare animals—but not rare plants—into the act as threatened species. Thus, the State of California employs three listing categories for plants: rare, threatened, and endangered. Several special-status plant species have a low potential to occur at the project site.

Special-Status Natural Communities

Special-status natural communities, as identified by CDFW's Natural Heritage Division, are those that are naturally rare and those whose extent has been greatly diminished through land use changes. The California Natural Diversity Database tracks 135 such natural communities in the same way that it tracks occurrences of special-status species: by maintaining information about each site's location, extent, habitat quality, level of disturbance, and current protection measures. CDFW is mandated to seek the long-term perpetuation of the areas in which these communities occur. Although no statewide laws require protection of all special-status natural communities, CEQA requires consideration of the potential impacts of a project on biological resources of statewide or regional significance.

California Fish and Game Code

Under Section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the code or any regulation made pursuant thereto. Raptors, also referred to as "birds of prey," are a valuable resource to the State of California, and therefore are protected under California Fish and Game Code Sections 3503, 3503.5, 3505, and 3513, and California Code of Regulations Title 14, Sections 251.1, 652, and 783 through 786.6. California Fish and Game Code Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) allow the designation of a species as "Fully Protected."

The classification of Fully Protected was the State's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish (California Fish and Game Code Section 5515), amphibians and reptiles (Section 5050), birds (Section 3511), and mammals (Section 4700). Most fully protected species have also been listed as threatened or endangered species under the more recent endangered species laws and regulations.

Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take, except to collect these species for necessary scientific research or to relocate the bird species for the protection of livestock. Thus, a greater level of protection is afforded to Fully Protected species than is afforded by the CESA. Nesting birds have the potential to occur at the project site.

California Code of Regulations (Wetlands and Waters Definition)

The State Water Resources Control Board indicates that no single accepted definition of wetlands exists at the State level, and that RWQCBs may have different requirements and levels of analysis with regard to the issuance of water quality certifications. Generally, an area is a wetland if, under normal circumstances:

(1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both;

(2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and

(3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act is the principal law governing water quality in California. The State Water Resources Control Board and RWQCBs have permitting and enforcement authority to prevent and control waste discharges that could affect waters of the State by issuing National Pollutant Discharge Elimination System (NPDES) permits and waste discharge requirements. The project site is located in the San Francisco Bay Basin and subject to regulatory requirements of the San Francisco Bay RWQCB.

Coastal Zone Management Act

The Coastal Zone Management Act applies to any proposed activity affecting areas covered by an approved coastal zone management plan. It requires that projects be consistent with coastal zone programs. The San Francisco Bay Conservation and Development Commission, as the issuing authority for the Coastal Zone Management Act, also requires the acquisition of a permit before filling, dredging, or sediment disposal in the Bay or whenever a development project occurs within the Coastal Zone.

California Department of Fish and Wildlife Lake or Streambed Alteration Agreement

CDFW comments on USACE permit actions under the Fish and Wildlife Coordination Act. Moreover, under Sections 1600–1616 of the California Fish and Game Code, CDFW regulates activities that would substantially divert, obstruct the natural flow of, or change rivers, streams, and lakes. Section 1602 defines the jurisdictional limits of CDFW as the bed, channel, or bank of any river, stream, or lake.

Local

San Francisco Planning Code (Standards for Bird-Safe Buildings)

The San Francisco Board of Supervisors unanimously approved, and the Mayor subsequently signed, legislation amending the San Francisco Planning Code (Planning Code) to incorporate bird-safe building standards into the code. The Planning Commission has also approved the Standards for Bird-Safe Buildings. The amendments, reviewed and recommended by the Planning Commission, introduced Planning Code Section 139, "Standards for Bird-Safe Buildings." (San Francisco, 2011.)

The Standards for Bird-Safe Buildings guide the use and types of glass and façade treatments, wind generators and grates, and lighting treatments. The standards impose requirements for bird-safe glazing and lighting in structures or at sites that represent a hazard to birds and provide information on educational and voluntary programs related to bird hazards.

The standards define two types of bird hazards. "Location-related hazards" are buildings located inside of, or within a clear flight path of less than 300 feet from, an Urban Bird Refuge. Such buildings require treatment when new buildings are constructed, additions are made to existing buildings, or existing buildings replace 50 percent or more of the glazing within the "bird collision zone." The standards require the following treatments for façades facing, or located within, an Urban Bird Refuge:

- No more than 10 percent untreated glazing is allowed on building façades within the bird collision zone.
- Lighting must be shielded, and no uplighting is permitted. No event searchlights are permitted.
- Sites are not permitted to use horizontal-access windmills or vertical-access wind generators that do not appear solid.

"Feature-related hazards" include building-related or structural features that are considered potential "bird traps" regardless of location (e.g., glass courtyards, transparent building corners, or clear glass walls on rooftops or balconies). Structures that include these elements must treat 100 percent of these elements in the building with bird-safe glazing.

San Francisco Recreation and Parks Department Management Plan (Significant Natural Resources Areas)

RPD has approved the Natural Resource Management Plan (NRAMP), formerly known as the Significant Natural Areas Management Plan, for designated significant natural areas in the City and County of San Francisco. The purpose of this management plan is to establish a maintenance and preservation program to protect and enhance natural resource values. The Final EIR for the project was certified by the Planning Commission on December 15, 2016, and this certification was upheld by the Board of Supervisors on February 28, 2017. The plan includes a variety of recommendations for improvements within India Basin Shoreline Park, such as restoration, enhancement, and maintenance work.

San Francisco Public Works Code (Urban Forestry Ordinance)

San Francisco's Urban Forestry Ordinance (Article 16 of the Public Works Code) regulates San Francisco's street trees, significant trees, and landmark trees regardless of species. The ordinance subjects the following three categories of trees to a permit process before removal and requires protection of the trees during nearby construction:

- A "street tree" is "any tree growing within the public right-of-way, including unimproved public streets and sidewalks, and any tree growing on land under the jurisdiction of the Department [of Public Works]" as defined in Section 802 of the ordinance. Section 806(b) requires entities (other than SFPW) to obtain a permit from the department before removing any street trees.

- A "significant tree" is defined in Section 810A of the ordinance as any tree:
  (1) located on property under the jurisdiction of the Department of Public Works or on privately owned property with any portion of its trunk within 10 feet of the public right-of-way, and

  (2) that satisfies at least one of the following criteria:

    a) a diameter at breast height in excess of 12 inches,
    b) a height in excess of 20 feet, or
    c) a canopy in excess of 15 feet.

  Any entity other than SFPW must obtain a permit to remove significant trees according to the process described in Section 806(b).

- A "landmark tree" is any tree that:
  (1) has been nominated as such by a member of the public, a landowner, the San Francisco Planning Commission, the Board of Supervisors, or the Historic Preservation Commission;

  (2) the Urban Forestry Council (within the San Francisco Department of the Environment) has subsequently recommended as a landmark tree; and

  (3) is designated a landmark tree by ordinance approved by the Board of Supervisors.

According to Section 810 of the ordinance, nominated trees undergoing review are protected according to the same standards as designated landmark trees until the review process is completed. Permits are required for planting or removing street trees and significant trees, and protection measures are required for these trees if construction work would occur within the trees' dripline.

3.14.3 Impacts and Mitigation Measures

Significance Thresholds

The thresholds for determining the significance of impacts in this analysis are consistent with the environmental checklist in Appendix G of the State CEQA Guidelines, which has been modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether

implementing the proposed project or the variant would result in a significant impact related to Biological Resources. Implementation of the proposed project or the variant would have a significant effect on Biological Resources if the proposed project or variant would:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
- have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.

Approach to Analysis

Impacts on biological resources were evaluated based on the likelihood that special-status species, sensitive habitats, wildlife corridors, and protected trees are present on the project site, and the likely effects of project construction or operation on these resources. For the purposes of this EIR, the word "substantial" as used in the significance thresholds above is defined by the following three principal components:

- magnitude and duration of the impact (e.g., substantial/not substantial),
- uniqueness of the affected resource (rarity), and
- susceptibility of the affected resource to disturbance.

In this biological resources analysis, the project site is defined as all areas directly affected by project development, including the India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes properties.

Project Features

Both the proposed project and the variant would involve demolishing some of the existing buildings on the project site and constructing a mixed-use development that would include residential, commercial, institutional/educational, research and development, parking, and open space uses. The project site includes wildlife habitat in the form of tidal marshland, open water, wetlands, and vegetated areas, and construction and operation of the proposed project or variant would affect these areas.

Impact Evaluation

Impact BI-1: The proposed project or variant would have an adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS. *(Less than Significant with Mitigation*)

The following impact discussion describes the impacts of project construction and operation on candidate, sensitive, and special-status species as identified in regional plans, policies, or regulations, or by CDFW or USFWS. Separate impact analyses are provided for impacts associated with special-status fish, Ridgway's rail, Alameda song sparrow, nesting birds, and marine mammals. Individual impact conclusions and, where appropriate, mitigation measures are listed for the respective construction-related or operational impacts at each project site property. The respective impacts described below would occur under either the proposed project or the variant. An "overall" impact conclusion, which represents the most severe CEQA impact conclusion of those listed below, is provided at the end of the impact discussion.

This impact discussion analyzes potential project-related impacts on special-status fish and wildlife species that have a moderate or greater potential to occur in the project area. No impacts on special-status species with low or no potential to occur in the project area are anticipated; therefore, such special-status species are not discussed. In addition, no special-status plant species are anticipated to occur on the project site; therefore, special-status plant species are not discussed.

Special-Status Fish Species

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Project construction at the India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes properties under either the proposed project or variant has the potential to affect four special-status fish species: green sturgeon, Central California Coast steelhead ESU, longfin smelt, and Pacific herring. Potential impacts on special-status fish species resulting from construction activities would be similar at all four properties; however, impacts at the 900 Innes, India Basin Open Space, and 700 Innes properties would be less than those discussed for the India Basin Shoreline Park property, given the park's direct proximity to the Bay and the amount of potential habitat that fronts the shoreline. The primary differences between impacts at these properties are outlined in the "Habitat Removal" discussion below.

Project construction may result in habitat removal, increased turbidity, accidental spills, shading of habitat, and underwater noise. Construction impacts would be similar for each species of fish, except that the life history of each of these species differs; therefore, certain species have the potential to be present on the India Basin Shoreline Park property only during certain portions of the year. These impacts and their timing are discussed below.

Habitat Removal. In-water work at the India Basin Shoreline Park property (adding a new 480-foot-long by 12-foot-wide pier, removing and replacing 12 piles, removing current shoreline/riprap, and replacing it with tidal marsh habitat) would result in permanent removal of approximately 0.07 acre of tidal marsh habitat for special-

status fish species. Permanent removal indicates that the habitat or developed area would not be restored to near preconstruction conditions, and temporary removal indicates that the habitat or developed area would be restored to near preconstruction conditions after construction. Table 3.14-2 details, by property, the proposed project's and variant's temporary and permanent removal of all affected habitat types and developed land in the project area. Permanent removal of approximately 1.20 acres of open water habitat would also occur.

Remediation actions and removal of two dilapidated piers and approximately 32 creosote-treated piles located in the Bay at the 900 Innes property would result in habitat removal, increased noise and human presence, increased turbidity, and the potential for accidental spills. Two new piers would be constructed in the generally the same location and an attempt would be made to replace the piles in place, if possible. For the 900 Innes property, these construction activities would result in the temporary removal of approximately 0.26 acre and permanent removal of approximately 0.09 acre of open water habitat.

For the India Basin Open Space property, construction activities would result in the temporary removal of approximately 0.53 acre and permanent removal of approximately 0.27 acre of tidal marsh, as well as the temporary removal of approximately 0.28 acre and permanent removal of approximately 0.03 acre of open water habitat. A portion of these impacts would result from the removal of an existing drainage outfall and the installation of a new kayak launch supported by fill. In addition, other intertidal communities located below the high tide line, such as beach, bare, and developed open water areas will be impacted. All of these areas are considered critical habitat for green sturgeon and steelhead, as well as EFH. Table 3.14-2 details the project's temporary and permanent impacts.

For the 700 Innes property, removal of an existing pier and piles would result in the permanent removal of 0.03 acre of developed open water which would result in the creation of 0.03 acre of open water habitat. These areas are considered critical habitat for green sturgeon and steelhead, as well as EFH.

Turbidity. In-water construction activities would likely cause temporary increases in turbidity in the surrounding areas, which could reduce the quality of habitat for special-status fish species at the project site. Elevated turbidity levels could negatively affect vegetation in the area, and therefore, foraging ability. Stormwater runoff from the project site may also increase turbidity in the Bay.

Accidental Spills. Accidental spills of materials used during construction (e.g., oils, transmission and hydraulic fluids, fuel) could result from either runoff or in-water work. These materials could enter open water or tidal marsh areas. As with turbidity, adverse effects of pollutants in the Bay could reduce the quality of habitat for special-status fish species. The introduction of pollutants may also result in the death or injury of special-status fish.

Table 3.14-2: Temporary and Permanent Removal of Habitat and Developed Areas at the Project Site[2]

Habitat Type	Permanent Removal, by Project Site Property (acres)				Temporary Removal, by Project Site Property (acres)			
	India Basin Shoreline Park	900 Innes	India Basin Open Space	700 Innes	India Basin Shoreline Park	900 Innes	India Basin Open Space	700 Innes
Bare (below HTL)	0	0	0.03	0	0	0	0.1	0
Beach	0	0	0.01	0	0	0	0.03	0
Concrete debris (above HTL)	0	0	0	0	0	0	0.05	0
Concrete debris (below HTL)	0	0	0	0	0	0	0.13	0
Developed	2.11	1.93	0.47	5.39	0	0	0	0
Developed open water	0	0.09	0.01	0.03	0	0.13	0	0
Disturbed infill	0.45	0.21	0.23	14.72	0	0	0	0
Maintained landscaping	0	0	2.33	0.74	0	0	0	0
Mixed landscaping	3.75	0	0	0.58	0	0	0	0
Native coastal scrub	0.23	0	0.21	0.33	0	0	0	0
Open waters	1.20	0.09	0.03	0	0	0.26	0.28	0
Riprap (upland)	0.17	0	0	0	0	0	0	0
Sand (above HTL)	0	0	0	0	0	0	0	0
Sand (below HTL)	0	0	0	0	0	0	0.01	0
Sand/gravel	0	0	0	0	0	0.05	0	0
Seasonal wetland	0	0	0	0.26	0	0	0	0
Tidal marsh	0.07	0	0.27	0	0	0	0.53	0
Waters	0	0	0	0.01	0	0	0	0
Wetland swale	0	0	0	0.04	0	0	0	0
Total	**7.78**	**2.32**	**3.59**	**22.1**	**0**	**0.44**	**1.13**	**0**

Note: HTL = high-tide line
Sources: San Francisco, 2017a and 2017b

[2] Impact acreage estimates are approximate, and subject to change based on project design refinements.

Shading. Barges would be used to construct the overwater pier at India Basin Shoreline Park. The barges would result in shading of open water habitat temporarily during construction. The shading could reduce the amount of energy available for photosynthesis by phytoplankton for a limited time frame. However, tidal fluctuations and currents would move the water mass through the area. Planktonic organisms associated with the water mass would also move through the area and are not expected to reside beneath the barges for a great amount of time. The small potential for reduction of photosynthesis during a limited construction period is not expected to measurably reduce phytoplankton densities in this area or to result in food-chain effects on zooplankton species upon which juvenile special-status fish species may feed.

Shading from barges can also create "behavioral barriers" that can deflect or delay fish movement, reduce the production and availability of prey resources, and increase the predation rates of certain fishes. The temporary area of shade that would be created by project elements is small relative to the size of the surrounding open water habitat; therefore, species' behavior is not anticipated to be affected because the fish could move to another location in the Bay that is not under shade.

Underwater Noise. Underwater sound and acoustic pressure generated during in-water construction activities and installation of piles for overwater piers could affect special-status fish species by causing behavioral avoidance of the construction area, injury, or both. Underwater sound may be generated by in-water work such as replacement of the existing shoreline and riprap with tidal marsh. However, the most potentially harmful sound-generating activity would likely be pile driving for pier installation.

On July 8, 2008, the Fisheries Hydroacoustic Working Group[3] issued an agreement establishing interim threshold criteria to determine the effects of high-intensity sound on fish (FHWG, 2008). These criteria are not formal regulatory standards, but they are generally accepted as viable criteria. The criteria were established after extensive review of the most recent analysis of the effects of underwater noise on fish. The agreed-on threshold criteria for impulse-type noise to harm fish have been set at 206 decibels (dB) peak, 187 dB accumulated sound exposure level (SEL) for fish weighing more than 2 grams, and 183 dB for fish weighing less than 2 grams (Table 3.14-3).

Table 3.14-3: National Marine Fisheries Service Underwater Noise Thresholds for Fish

	Peak Noise (dB)	Accumulated Noise (SEL) (dB)
Impulse and Continuous Sound		
Fish less than 2 grams in weight	>206	>183
Fish more than 2 grams in weight	>206	>187

Notes:
> = greater than; dB = decibels; SEL = sound exposure level
Source: FHWG, 2008

The Fisheries Hydroacoustic Working Group has determined that the potential onset of injury to fish may occur from exposure to noise at or above the 206-dB peak, 187 SEL (for fish > 2 grams) or 183 SEL (for fish less than

[3] Among the members of the Fisheries Hydroacoustic Working Group are NMFS' Southwest and Northwest Divisions; USFWS; the California, Washington, and Oregon Departments of Transportation; CDFW; and the Federal Highway Administration.

2grams) level. Behavioral effects are not covered by these criteria but could occur at these levels or lower. Behavioral effects may include fleeing and the temporary cessation of feeding or spawning behaviors.

Seasonality. As discussed previously, certain species have the potential to be present within marine habitat associated with all project site properties only during certain portions of the year:

- *Green sturgeon* are known to occur in the Bay in low densities year-round during their early life stages. NMFS indicates a work window for green sturgeon of June 1 to November 30. Therefore, impacts related to behavior, injury, and mortality of green sturgeon may occur year-round, but can be minimized by working during the recommended work window.
- *Steelhead* do not spawn in the project vicinity, but may migrate through the site between December 1 and May 31. NMFS indicates a preferred work window for steelhead during the same time as for green sturgeon, June 1 to November 30. Therefore, impacts related to behavior, injury, and mortality of steelhead may occur between December 1 and May 31. Outside of this window, impacts would be limited to habitat loss and habitat degradation.
- *Longfin smelt* occur in the Bay year-round, but are not known to spawn south of the Bay Bridge. Impacts related to longfin smelt behavior, injury, or direct mortality, and temporary habitat loss and degradation may occur year-round.
- *Pacific herring* have the potential to be present in the project site's open water habitats year-round; however, impacts on Pacific herring, a Magnuson-Stevens Act–managed species, are generally limited to impacts on spawning. Therefore, although the project may affect Pacific herring year-round, impacts deemed significant would be limited to December 1 to February 29.

In summary, construction activities planned at all four project site properties under the proposed project or variant could result in injury or mortality of special-status fish species, loss of habitat, increased turbidity, accidental spills, shading of habitat, and underwater noise. Therefore, under either the proposed project or the variant, the impact of construction at all four properties on special-status fish species could be significant.

The following mitigation measures would be implemented to reduce this significant construction impact of the proposed project or variant:

- Mitigation Measure M-BI-1a, "Prepare and Implement a Hydroacoustic Monitoring Program for Special-Status Fish and Marine Mammals"
- Mitigation Measure M-BI-1b, "Implement Avoidance and Minimization Measures for Special-Status Species"
- Mitigation Measure M-BI-1c, "Prepare and Implement a Vegetation Restoration Plan and Compensatory Mitigation"
- Mitigation Measure M-HY-1a, "Monitor Turbidity during Construction"
- Mitigation Measure M-HY-1b, "Implement Pile Removal Best Management Practices"

Mitigation Measures M-BI-1a, M-BI-1b, and M-BI-1c are presented below; Mitigation Measures M-HY-1a and M-HY-1b are presented in Section 3.15, "Hydrology and Water Quality."

Mitigation Measure M-BI-1a would involve avoiding and minimizing acoustical impacts of underwater work (e.g., pile driving) on special-status species. Mitigation Measure M-BI-1b would include but not be limited to providing an environmental education program to all project personnel, limiting construction to approved work areas, and cleaning up all trash from the project site. Mitigation Measure M-BI-1c requires that sensitive natural communities be created or restored at a ratio of no less than 1:1. In addition, the project would create 0.64 acre of tidal marsh habitat along the India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties (Table 3.14-4). This would exceed the mitigation requirement to offset temporary and permanent impacts on tidal marshland. This additional tidal marshland would add foraging and cover habitat for special-status fish species by creating new tidal marshland and enhancing existing tidal marshland.

Table 3.14-4: Net Changes in Tidal Marshland and Seasonal Wetland Acreages with the Project

Biological Community by Property	Biological Community Acreages		
	Existing Acreage	Postproject Acreage	Net Change
India Basin Shoreline Park			
Tidal marsh	0.14	0.44	+0.30
900 Innes			
Tidal marsh	0.00	0.11	+0.11
India Basin Open Space			
Tidal marsh	1.91	2.06	+0.15
Seasonal wetland	0.00	0.48	+0.48
700 Innes			
Tidal Marsh	0.02	0.10	+0.08
Seasonal wetland	0.26	0.0	-0.26

Sources: San Francisco, 2017a and 2017b

Erosion control measures and best management practices (BMPs) (as detailed in Section 3.15, "Hydrology and Water Quality") would also be implemented to reduce the potential for increased water turbidity from project runoff or accidental spills. These measures would include but not be limited to:

- The projects construction contractor preparing a storm water pollution prevention plan (SWPPP), as required by the NPDES construction general permit, to identify potential pollutant sources, appropriate BMPs and ensure the placement of effective erosion control materials (e.g., fiber rolls, silt fences) during construction for acceptance by the RWQCB;
- inspecting vehicles daily for leaks; and
- establishing a designated fueling area.

To protect against spills that could occur during in-water work, the SWPPP would require that spill containment booms be kept on-site at all times.

As stated previously, in-water work has the potential to increase turbidity in open water environments in the project area temporarily. In-water work would be restricted to the minimum amount necessary to complete the project; however, turbidity increases associated with this work cannot be avoided. Turbidity from in-water work is

expected to result in temporary degradation of and/or removal of habitat for special-status fish species for a limited period. However, a full water mass exchange in the project area is expected every 12 hours or less, which would return turbidity to preexisting levels. In addition, Mitigation Measure M-HY-1a in Section 3.15, "Hydrology and Water Quality," requires the development and implementation of a turbidity monitoring plan, which would establish baseline conditions for turbidity and light levels, daily turbidity monitoring during construction, and require that work cease when water quality criteria are exceeded. Further, Mitigation Measure M-HY-1b in Section 3.15 describes procedures that would be utilized to remove piles based on information related to local sediment condition.

Lastly, if the project would be likely to have an adverse effect on listed fish species, the project sponsor would coordinate with the federal action agency, the USACE, to initiate consultation with NMFS pursuant to Section 7 of the FESA. Through consultation, the project would obtain any necessary incidental take authorization and ensure that the proposed actions would not jeopardize the continued existence of any listed species or result in adverse modification of critical habitat.

Mitigation Measure M-BI-1a: Prepare and Implement a Hydroacoustic Monitoring Program for Special-Status Fish and Marine Mammals

Before the start of construction, the project sponsors shall prepare a hydroacoustic monitoring plan and obtain approval from NMFS. The plan shall be provided to NMFS for review and approval before construction.

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, as feasible, and below NMFS thresholds for marine mammals.

The plan shall include but not be limited to the following measures for special-status fish:

- *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 to complete installation of the steel pilings, in accordance with seismic safety or other engineering criteria.*
- *The smallest pile driver and minimum force necessary shall be used to complete the work.*
- *The hammer shall be cushioned using a 12-inch-thick wood block during all impact hammer pile-driving operations to the extent feasible.*
- *A bubble-curtain, air barrier, or similar technology shall be employed during all impact pile-driving activities.*
- *A "soft start"[4] 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.*

[4] 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 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.

- *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 rising to the surface, 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 or exceeds the threshold, then pile-driving activities will cease until the next day.*
- *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 shutdown requirements. A monitoring report shall be prepared for submission to NMFS (submitted monthly and at the completion of all pile-driving/pile removal activities).*
- *The hydroacoustic monitoring program shall incorporate NMFS-recommended work windows to avoid impacts on special-status fish species that have the potential to occur at the project site during only certain portions of the year. This includes limiting work between December 1 and May 31 to avoid impacts on steelhead and green sturgeon, and monitoring for herring spawning events in the vicinity of the project site between December 1 and February 29. In the event that monitoring identifies a herring spawning event that could be affected by project-related construction activities, all in-water work shall be temporarily halted. In-water work shall not resume until a qualified biologist determines that no additional impact on spawning herring would occur.*

The project sponsors shall coordinate with the NMFS Office of Protected Resources pursuant to the Marine Mammal Protection Act to develop an appropriate plan and monitoring program for potential effects to species during noise generating work. The plan shall include but not be limited to the following measures for marine mammals:

- *Zones of influence shall be based on the estimated NMFS injury threshold contours for the different marine mammals. These zones of influence may be modified, based on subsequent analysis of the actually proposed piles, equipment, and activity before construction, but only with the approval of NMFS.*
- *Hydroacoustic monitoring according to the hydroacoustic monitoring plan 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 before construction may be modified, based on field measurements of different pile-driving activity, if the field measurements indicate different threshold contours than estimated before construction, but only with the approval of NMFS.*
- *During pile-driving and pile-removal activity, a NMFS-approved marine mammal observer would monitor the work area for marine mammal presence. If a marine mammal is observed in or swimming into an unauthorized zone of influence, work would stop until the animal was observed, or determined to be, outside of the area of potential injury.*

- *A "soft start"[5] technique shall be employed each day upon commencement of pile-driving activity, any time after pile-driving activity ceases for more than 1 hour, and any time after pile-driving activity shuts down because a marine mammal has entered a safety zone.*
- *All pile-driving and pile-removal activity shall be monitored by an NMFS-approved biological monitor before and during all pile driving 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 activities; any field sound measurements; marine mammal sightings; and implementation of soft-start, shutdown, and safety-zone requirements. A monitoring report shall be prepared for submission to NMFS (submitted monthly and at the completion of all pile-driving/pile-removal activities).*

Mitigation Measure M-BI-1b: Implement Avoidance and Minimization Measures for Special-Status Species

The project sponsors and the project construction contractor(s) they procure shall implement the following avoidance and minimization measures for special-status species:

- ***Implement a Worker Environmental Awareness Program (WEAP):** An education program shall be developed and implemented by a qualified biologist and attended by all construction personnel performing demolition or ground-disturbing work before such work commences on-site. Upon completion of the program, employees shall sign a form stating that they attended the training session and understand all conservation and protection measures. All future construction personnel shall be required to attend the presentation (either an in-person presentation or a recording of the prior presentation) and sign the form before beginning work on the project site. The signed forms shall be kept on file for the duration of construction and provided to the City and County of San Francisco upon request. The WEAP shall include but not be limited to education on:*
  - *(a) applicable State and federal laws, environmental regulations, project permit conditions, and penalties for noncompliance;*
  - *(b) special-status plant and animal species with the potential to be encountered on or in the vicinity of the project site during construction;*
  - *(c) avoidance measures and a protocol for encountering special-status species, including a communication chain;*
  - *(d) preconstruction surveys and biological monitoring requirements associated with each phase of work and at specific locations within the project site (e.g., shoreline work), as biological resources and protection measures will vary depending on the location of work on the site, the time of year, and the type of construction activity;*
  - *(e) known sensitive resource areas in the project vicinity that are to be avoided and/or protected, as well as approved project work areas, access roads, and staging areas; and*
  - *(f) BMPs (e.g., straw wattles or spill kits) and their locations around the project site for erosion and species exclusion, in addition to general housekeeping requirements.*

[5] 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.

- ***Avoid Attracting Predators:*** *To eliminate attractions for predators, all food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in solid, closed containers (trash cans) and removed from the entire construction site at the end of each working day.*
- ***Avoid Entanglement:*** *Tightly woven fiber netting or similar material shall be used at the project site for erosion control or other purposes to ensure that individuals are not trapped. This limitation shall be communicated to the contractor through use of special provisions included in the bid solicitation package. Plastic monofilament netting (erosion control matting) or similar material shall not be used at the project site because special-status species may become entangled or trapped in it.*

Mitigation Measure M-BI-1c: Prepare and Implement a Vegetation Restoration Plan and Compensatory Mitigation

- *To restore temporarily affected habitat, the project sponsors shall prepare and implement a vegetation restoration plan with detailed specifications for minimizing the introduction of invasive weeds and restoring all temporarily disturbed areas, and shall ensure that the contractor successfully implements the plan. The plan shall indicate the best time of year for seeding to occur.*

  To facilitate preparation of the plan, the project sponsors shall ensure that, before construction, a botanist (experienced in identifying sensitive plant species in the project area) performs additional preconstruction surveys of the areas to collect more detailed vegetation composition data, including species occurrence, vegetation characterization (e.g., tree diameter size), and percent cover of plant species. Photo documentation shall be used to show preproject conditions.

  The minimum weed control and restoration measures and the success criteria to be included in the vegetation restoration plan are described below.

  Invasive Weed Control Measures

  Invasive weeds readily colonize soils that have been disturbed by grading or other mechanical disturbance. The project sponsors shall incorporate the following measures into the construction plans and specifications to prevent the spread of invasive weeds into nearby areas:

  (a) Construction equipment shall arrive at the project area free of soil, seed, and plant parts to reduce the likelihood of introducing new weed species.

  (b) Any imported fill material, soil amendments, gravel, etc., required for construction and/or restoration activities that would be placed within the upper 12 inches of the ground surface shall be free of vegetation and plant material.

  (c) Certified, weed-free, imported erosion-control materials (or rice straw in upland areas) shall be used exclusively, as applicable (this measure concerns biological material and does not preclude the use of silt fences and other measures).

  (d) The environmental awareness training program for construction personnel shall include an orientation regarding the importance of preventing the spread of invasive weeds.

(e) To reduce the seed bank in weed-dominated ruderal areas, the contractor shall mow, disk, apply spot-applications of herbicide to weeds, and/or remove weeds, as appropriate (i.e., before seed set and dispersal) and before surface clearing and site preparation.

(f) Before tracked and heavy construction equipment leaves the project area, any accumulation of plant debris, soil, and mud shall be washed off the equipment or otherwise removed on-site, and air filters shall be blown out.

(g) No invasive species shall be used in any restoration seeding.

(h) Implementation of these measures during construction and site restoration activities shall be verified and documented by a biological or environmental monitor.

Minimum Restoration Measures

Restoration areas are portions of the project area that would be disturbed during project-related construction activities but would subsequently be restored to their preconstruction conditions, or better. No soil containing plant materials may be used for revegetation to avoid inadvertent introduction of nonnative plant pathogens like phytophthora (Phytophthora sp.). To restore temporarily disturbed areas, the project sponsors shall ensure the following:

(a) Native coastal scrub and tidal marshland areas shall be reseeded with a native seed mix or replanted with native stock.

(b) For any tree to be removed, RPD and BUILD shall ensure that replacement trees are planted within or in the vicinity of the project area as follows:

- *Trees shall be replaced within the first year after the completion of construction or as soon as possible in an area where construction is completed, during a favorable time of year as determined by an arborist or biologist with experience in restoration.*
- *Selection of replacement sites and installation of replacement plantings shall be supervised by an arborist or biologist with experience in restoration. Irrigation of tree plantings during the initial establishment period shall be provided as deemed necessary by an arborist or biologist with experience in restoration.*
- *An arborist or biologist with experience in restoration shall monitor new plantings at least once a year for 5 years or as otherwise determined by the applicable resource agencies.*
- *Any replacement plantings installed as remediation for failed plantings shall be planted as stipulated here for original plantings, and shall be monitored for 5 years after installation, or as otherwise determined by the applicable resource agencies.*

Minimum Success Criteria

Unless the applicable resource agencies determine that different but equivalent or more stringent criteria should be applied, the success criteria for restoring temporarily disturbed areas shall be as follows:

(a) All temporarily disturbed areas shall be restored to approximately their baseline condition. Vegetation cover shall be at least 70 percent of the baseline; that is, absolute cover of the revegetation site shall be no less than 70 percent of the baseline absolute cover of native and

naturalized species (i.e., excluding target invasives). Cover in the revegetation site shall contain no more than 10 percent absolute cover of target invasives or no more cover of invasives than the baseline, whichever is greater.

(b) Vegetation in restoration areas shall be functional, fully established, and self-sustaining as evidenced by successive years of healthy vegetative growth; observed increase in vegetative cover, canopy cover, and/or plant height; and successful flowering, seed set, and/or vegetative reproduction over the 5-year monitoring period.

(c) Revegetation work shall start within 1 year of construction completion.

(d) Revegetation shall be monitored at least once a year for 5 years or as otherwise determined by the applicable resource agencies.

(e) Individual native trees shall have 65 percent survivorship by the fifth monitoring year.

(f) Restoration areas shall be monitored for target invasive plants quarterly in the first 5 years after replanting. If invasive plants are found during the 5-year monitoring period, they shall be removed as necessary to support meeting the cover and vegetation composition success criteria.

(g) Monitoring and maintenance shall continue until the minimum success criteria specified in parts (a) through (e) are met, or as otherwise determined by the applicable resource agencies.

Compensatory Mitigation

The project sponsors shall fully compensate for permanent losses of developed open water, open water, seasonal wetland, wetland swale, tidal marsh including areas of bare ground and beach, and nonwetland waters (2.11 acres total) as defined in Table 3.1-5. In addition, the project sponsors shall fully compensate the permanent loss of native coastal scrub (0.77 acre). Compensatory mitigation may occur through the creation of habitat on-site at any of the four project site properties, or through purchase of credits at an off-site mitigation bank. Permanently affected areas shall be mitigated at a ratio of no less than 1:1, unless otherwise approved by USFWS and/or CDFW.

Under either the proposed project or the variant, implementation of Mitigation Measures M-BI-1a, M-BI-1b, and M-BI-1c listed above, along with Mitigation Measures M-HY-1a and M-HY-1b and development of a SWPPP and other erosion control measures as detailed in Section 3.15, "Hydrology and Water Quality," would reduce impacts of construction at all project site properties on special-status fish species to *less than significant with mitigation*.

Operation

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Operational impacts of the proposed project or variant on special-status fish species would be limited to in-water shading from new features added in open water habitat and the generation of stormwater from long-term operational discharges of urban contaminants into the stormwater drainage system and ultimate receiving waters.

Adding a new 480-foot-long by 12-foot-wide pier at India Basin Shoreline Park would result in the permanent shading of open water habitat. The shading could reduce the amount of energy available for photosynthesis by phytoplankton. However, the tidal fluctuations and currents would move the water mass through the area.

Planktonic organisms associated with the water mass would also move through the area and are not expected to reside beneath the platform for a lengthy amount of time. The small potential for a reduction in photosynthesis is not expected to measurably reduce phytoplankton densities in this area, or to result in food-chain effects on zooplankton species upon which juvenile special-status fish species may feed.

Shading from the pier, an overwater structure, can also create "behavioral barriers" that can deflect or delay fish movement, reduce the production and availability of prey resources, and increase the predation rates of certain fishes. The area of shade that would be created by project elements is small relative to the size of the surrounding available open water habitat in the Bay to which species could move; therefore, species behavior is not anticipated to be affected.

Stormwater generated on the project site has the potential to introduce pollutants and increase turbidity in tidal marsh and open water habitat in the Bay. Long-term operational discharges of urban contaminants into the stormwater drainage system and ultimate receiving waters would increase with the proposed project or variant, as compared to existing conditions. As discussed in Section 3.15, "Hydrology and Water Quality," compliance with several existing regulations applicable to the proposed project and variant would reduce or avoid impacts related to long-term erosion, sedimentation, and water quality degradation. Stormwater discharges from the project site to a separate stormwater system would be subject to the regulatory requirements of the NPDES Phase II MS4 Permit, the City's Stormwater Management Ordinance, and the City's SMR. The NPDES MS4 Phase II General Permit for stormwater discharge (Order No. 2003-0005-DWQ as amended by 2013-0001-DWQ) requires the use of Low Impact Development (LID) and green infrastructure BMPs to comply with stormwater management requirements. The NPDES Phase II MS4 Permit requires the City and SF Port to develop, administer, implement, and enforce stormwater management plans to protect and improve stormwater quality. Implementing the City's stormwater management plan requires postconstruction stormwater management for new development and redevelopment to protect stormwater quality and the quantity of water delivered to water bodies.

For these reasons, at all four project site properties, operational impacts of the proposed project or variant on special-status fish species would be *less than significant.* No mitigation measures are necessary.

Ridgway's Rail

Construction

India Basin Shoreline Park Property

No foraging or nesting habitat for Ridgway's rail occurs within the India Basin Shoreline Park Property. Potential impacts to Ridgway's rail would be limited to human presence and noise disturbance associated with the construction of the Marineway attached to India Basin Shoreline Park, which could impact nesting rails at Heron's Head Park. The northern terminus of the Marineway is approximately 500 feet from Heron's Head Park, and construction activities to build the Marineway may occur even closer to Heron's Head Park. Heron's Head park provides marginal and low quality nesting habitat for Ridgway's rail; however, observation of Ridgway's rail were made at Heron's Head Park between 2010 and 2015, and one breeding pair was successful at Heron's Head Park in 2011. No Ridgway's rails have been observed at Heron's Head Park in 2016 or 2017; however, the potential exists for Ridgway's rail to nest at Heron's Head Park during construction of the Marineway (Jen McBroom, personal conversation, August 21, 2017).

Noise and Human Presence. Typical disturbance buffers surrounding Ridgway's rail nesting habitat are approximately 700 feet, upon which construction of the Marineway could encroach. Noise disturbance and human presence during construction has the potential to negatively affect Ridgway's rail breeding behavior and success.

Accidental Spills. Materials used during construction (e.g., oils, transmission and hydraulic fluids, fuel) could be spilled accidentally and could enter the Bay and be transported to Heron's Head Park. Pollutants entering the Bay could reduce the quality of habitat for Ridgway's rail, thereby reducing foraging or nesting potential. The introduction of pollutants also may harm Ridgway's rail temporarily if birds consume the contaminated items.

In summary, under either the proposed project or the variant, the impact of construction at India Basin Shoreline Park on the Ridgway's rail could be significant.

The following mitigation measure would be implemented to reduce this significant construction impact on the Ridgway's rail:

- Mitigation Measure M-BI-1b, "Implement Avoidance and Minimization Measures for Special-Status Species"

As described in Mitigation Measure M-BI-1d, Ridgway's rail habitat would be avoided during the nesting season. If construction must occur during the Ridgway's rail nesting season, a USFWS-approved protocol-level Ridgway's rail survey (following the June 2015 USFWS Survey Protocol) will be conducted in Ridgway's rail habitat (Heron's Head Park) within 700 feet of planned construction activities. If Ridgway's rail activity centers are detected, the findings will be reported to USFWS and project activities occurring within 700 feet of Ridgway's rail activity centers will be limited to the period from September 1 through January 31, outside of the Ridgway's rail nesting season.

Additional measures include preparing and providing an environmental training program for project personnel (Mitigation Measure M-BI-1b); restricting construction activities to approved work areas; and installing erosion control materials and BMPs as described in Section 3.15, "Hydrology and Water Quality." Mitigation Measure M-HY-1a, "Monitor Turbidity during Construction," presented in Section 3.15, "Hydrology and Water Quality," would be implemented to reduce this significant impact during construction.

Under either the proposed project or the variant, implementation of Mitigation Measure M-BI-1d would reduce construction impacts at India Basin Shoreline Park on the Ridgway's rail.

900 Innes, India Basin Open Space, and 700 Innes Properties

The 900 Innes, India Basin Open Space, and 700 Innes properties are not located within 700 feet of Ridgway's rail habitat and no construction-related impacts are anticipated.

Overall Construction Impact conclusion for Ridgway's Rail

As stated above, the potential exists for Ridgway's rail to nest at Heron's Head Park during construction of the India Basin Shoreline Park Marineway (Jen McBroom, personal conversation, August 21, 2017). Under either the proposed project or the variant, implementation of Mitigation Measure M-BI-1d would reduce construction impacts at all properties on the Ridgway's Rail.

Mitigation Measure M-BI-1d: Avoid Ridgway's Rail Habitat During the Nesting Season

To the extent feasible, the start of construction activities within 700 feet of Heron's Head Park shall be scheduled to avoid the Ridgway's rail nesting season. The nesting season for Ridgway's rail extends from February 1 through August 31. If construction must occur during the Ridgway's rail nesting season, the following measures shall be implemented:

(a) A USFWS-approved protocol-level survey for Ridgway's rail (following the June 2015 USFWS Survey Protocol) shall be conducted in Ridgway's rail habitat (Heron's Head Park) within 700 feet of planned construction activities.

(b) If Ridgway's rail activity centers are detected, the findings shall be reported to USFWS and project activities occurring within 700 feet of Ridgway's rail activity centers shall be limited to the period from September 1 through January 31, outside of the Ridgway's rail nesting season.

With implementation of Mitigation Measure M-BI-1d, impacts to the Ridgway's Rail would be *less than significant with mitigation.*

Operation

India Basin Shoreline Park and India Basin Open Space Properties

There are two proposed kayak launches, one in the Marineway associated with India Basin Shoreline Park and the other on the India Basin Open Space property. If recreational users kayak to Heron's Head Park from these kayak launches, their presence could affect foraging and nesting Ridgway's rails. Human presence in the form of kayakers is not anticipated to result in immediate nest failure; but an increased human presence in the open water habitat surrounding Heron's Head Park could deter Ridgway's rails from inhabiting the site or affect Ridgway's rail behavior, thereby reducing breeding success.

However, the existing conditions of nesting habitat at Heron's Head Park are of marginal and low quality. The project proposes to replace approximately 0.64 acre of existing shoreline at the project site with tidal marshland (Table 3.14-4). This additional tidal marshland acreage would add foraging and nesting habitat for Ridgway's rail. Creating this habitat would be the primary method by which the project would offset impacts from recreational kayak use in India Basin. Adding 0.64 acre of tidal marsh habitat along this section of shoreline would improve habitat connectivity between Heron's Head Park to the north, and would strengthen the southeastern shoreline of San Francisco as a movement corridor for Ridgway's rail.

900 Innes and 700 Innes Properties

The 900 Innes and 700 Innes Properties are not located within 700 feet or Ridgway's rail habitat, and no operations impacts are anticipated.

Overall Operation Impact Conclusion for Ridgway's Rail

Under either the proposed project or the variant, with creation and enhancement of habitat for Ridgway's rail, operational impacts on Ridgway's rail at the India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes properties would be *less than significant*.

Alameda (South Bay) Song Sparrow

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

The tidal marsh on the India Basin Shoreline Park property contains vegetation of suitable height and density to provide nesting habitat for the Alameda song sparrow. Alameda song sparrows are also known to nest at Heron's Head Park, approximately 0.25 mile to the north, which contains suitable tidal marsh habitat. Therefore, construction at the India Basin Shoreline Park property under either the proposed project or variant could result in impacts on nesting or foraging Alameda song sparrows.

The tidal marsh on the India Basin Shoreline Park property does not contain vegetation of suitable height and density to provide nesting habitat for Alameda song sparrows, but it could provide foraging habitat for this species.

No nesting or foraging habitat is present on the 900 Innes and 700 Innes properties; therefore, impacts of project construction on the Alameda song sparrow at either of these properties would be limited to increased noise and human presence near foraging habitat and increased turbidity and pollutants from stormwater runoff from the project site.

Habitat Removal. Because of the proximity of the project site to suitable habitat for this species, Alameda song sparrows may use the tidal marsh in the northern part of the India Basin Shoreline Park property for foraging or nesting. In-water project work on this property (removing the current shoreline/riprap and replacing it with tidal marsh habitat) would result in permanent removal of approximately 0.07 acre of potential nesting and foraging habitat, which could adversely affect Alameda song sparrows.

Construction at the India Basin Open Space property would result in temporary removal of approximately 0.53 acre and permanent removal of approximately 0.27 acre of tidal marsh, potential foraging habitat for Alameda song sparrows.

Noise and Human Presence. Construction activities at all project site properties would generate noise and increase human presence, potentially resulting in temporary harassment of foraging Alameda song sparrows. However, the tidal marsh habitat in India Basin is of low quality, and higher quality habitat is present at Heron's Head Park. Alameda song sparrows are thus expected to spend more time foraging at Heron's Head Park, which is approximately 0.25 mile north of the project site. Therefore, project-related noise and human presence are not anticipated to have a significant impact on foraging Alameda song sparrows.

Turbidity. Temporary, short-term increases in turbidity would likely result from in-water work at all four project site properties to remove the current shoreline/riprap and replacing it with tidal marsh habitat. These effects would

likely also result from conducting remediation actions, replacing two piers, and removing 20 piles at the 900 Innes property; enhancing tidal marsh, constructing an elevated boardwalk, removing an existing drainage outfall, and installing a new kayak launch at the India Basin Open Space property; and removing a pier and eight associated piles at the 700 Innes property.

Such turbidity increases have the potential to reduce the quality of foraging habitat for Alameda song sparrows on the project site. Elevated levels of turbidity could negatively affect the area's vegetation, and therefore foraging ability, which could adversely affect Alameda song sparrows temporarily.

Accidental Spills. Materials used during construction (e.g., oils, transmission and hydraulic fluids, fuel) could be spilled accidentally and could enter the Bay or tidal marsh areas. As with turbidity, pollutants entering the Bay could reduce the quality of habitat for Alameda song sparrows, thereby reducing foraging potential. The introduction of pollutants also may harm Alameda song sparrows temporarily if birds consume the contaminated items.

In summary, under either the proposed project or the variant, the impact of construction at all four project site properties on the Alameda song sparrow could be significant.

The following mitigation measures would be implemented to reduce this significant construction impact on the Alameda song sparrow:

- Mitigation Measure M-BI-1b, "Implement Avoidance and Minimization Measures for Special-Status Species"
- Mitigation Measure M-BI-1c, "Prepare and Implement a Vegetation Restoration Plan and Compensatory Mitigation"
- Mitigation Measure M-BI-1e, "Avoid Nests during Bird Nesting Season"

Mitigation Measures M-BI-1b and M-BI-1c are presented above; Mitigation Measure M-BI-1e is presented below.

As described in Mitigation Measure M-BI-1e, preconstruction nesting bird surveys would be conducted during nesting bird season and an appropriate avoidance buffer would be implemented if an active nest is identified. Additional measures include preparing and providing an environmental training program for project personnel (Mitigation Measure M-BI-1b); restricting construction activities to approved work areas; and installing erosion control materials and BMPs as described in Section 3.15, "Hydrology and Water Quality." Mitigation Measure M-HY-1a, "Monitor Turbidity during Construction," presented in Section 3.15, "Hydrology and Water Quality," would be implemented to reduce this significant impact of construction. Mitigation Measure M-BI-1c requires that sensitive natural communities be created or restored at a ratio of no less than 1:1.

In addition, the project proposes to replace approximately 0.64 acre of existing shoreline at the project site with tidal marshland (Table 3.14-4). This additional tidal marshland acreage would add foraging and nesting habitat for Alameda song sparrow. Creating this habitat would be the primary method by which the project would offset the reduction in habitat for this species as a result of construction. Adding 0.64 acre of tidal marsh habitat along this section of shoreline would improve habitat connectivity between Heron's Head Park to the north and tidal marshland to the south, and would strengthen the Bay's shoreline as a movement corridor for this species.

Mitigation Measure M-BI-1e: Avoid Nests during Bird Nesting Season

To the extent feasible, the start of construction activities shall be scheduled to avoid the nesting season. The nesting season for most birds, including most raptors, extends from February 1 through August 31. If construction must occur during the nesting season, the following measures shall be implemented:

(b) Preconstruction surveys for nesting birds shall be conducted by a qualified biologist no more than 14 days before the initiation of construction and demolition activities. During these surveys, the qualified biologist shall inspect all potential nesting habitats (e.g., trees, shrubs, grasslands, and buildings) within 300 feet of impact areas for raptor nests and within 100 feet of impact areas for nests of nonraptors. If an active nest (i.e., a nest with eggs or young, or any completed raptor nest attended by adults) is found sufficiently close to work areas to be disturbed by these activities, the qualified biologist shall determine the extent of a disturbance-free buffer zone to be established around the nest until the young are fledged or the nest is otherwise abandoned as determined by a qualified biologist (typically 250 feet for raptors and 50–100 feet for other species), to ensure that no nests of species protected by the Migratory Bird Treaty Act and California Fish and Game Code would be disturbed during project implementation.

(c) If construction activities are not initiated until after the start of the nesting season, potential nesting substrate (e.g., bushes, trees, grasses, and other vegetation) that is scheduled to be removed by the project may be removed before the start of the nesting season (e.g., before February 1) to reduce the potential for initiation of nests.

Under either the proposed project or the variant, implementation of Mitigation Measures M-BI-1b, M-BI-1c, and M-BI-1e would reduce construction impacts at all four project site properties on the Alameda song sparrow to *less than significant with mitigation*.

Operation

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Operational impacts of the proposed project or variant on the Alameda song sparrow would be primarily limited to the generation of stormwater on the project site, and the resulting potential to introduce pollutants and increase turbidity in tidal marsh and open water habitat in the Bay. Long-term operational discharges of urban contaminants into the stormwater drainage system and ultimate receiving waters would increase relative to existing conditions. As discussed in Section 3.15, "Hydrology and Water Quality," the project would comply with regulatory requirements, including the implementation of permanent stormwater BMPs, to avoid contributing to an increase in stormwater pollutants discharged to the Bay.

In addition, human presence in the project vicinity may increase with the development of new commercial and institutional buildings and dwellings. The increase in human presence would be primarily offset by the creation and restoration of tidal marsh habitat along the shoreline of the India Basin Shoreline Park and India Basin Open Space properties. Therefore, at all four project site properties, operational impacts of the proposed project or variant on the Alameda song sparrow would be *less than significant.* No mitigation measures are necessary.

Nesting Birds

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Although no special-status bird species have the potential to nest on or near the four project site properties, common nesting birds protected by the Migratory Bird Treaty Act and California Fish and Game Code may find suitable nesting habitat on and adjacent to the project site. Common birds may find nesting habitat in trees, shrubs, grasses, emergent wetland vegetation, and human-made structures. Ground-nesting birds may also find nesting habitat on dry, open, unvegetated ground. Construction noise and activity could disturb avian species during nesting, creating the potential for reduced fecundity or nest abandonment.

Increased human presence, noise, and removal of nesting habitat could affect active nests on the project site, resulting in nest failure. Therefore, at all four project site properties, construction-related impacts of the proposed project or variant on nesting birds could be significant.

Mitigation Measure M-BI-1b, "Implement Avoidance and Minimization Measures for Special-Status Species," and Mitigation Measure M-BI-1e, "Avoid Nests during Bird Nesting Season," described above, would be implemented to reduce this significant impact of construction at any of the four project site properties on nesting birds.

These measures include conducting preconstruction nesting bird surveys during nesting bird season (February 1–August 31), as described in Mitigation Measure M-BI-1e. Should an active nest be identified, a disturbance-free buffer zone would be established around any active nest until the young have fledged or the nest is otherwise abandoned as determined by a qualified biologist. Additional measures include preparing and providing an environmental training program for project personnel (Mitigation Measure M-BI-1b) and restricting project activities to approved work areas. In addition, habitat for bird species would be created and enhanced as part of the proposed project or variant. These enhancements could include sand dunes, bird islands, brackish lagoons, scrub upland planting, tree stands for wind buffering, and new wetlands and ponds.

Under either the proposed project or the variant, implementation of Mitigation Measures M-BI-1b and M-BI-1e and creation and enhancement of habitat for nesting birds would reduce construction impacts on nesting birds at any of the four project site properties to *less than significant with mitigation*.

Operation

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

The generation of stormwater on the project site under the proposed project or variant may result in operational impacts on nesting birds, and has the potential to introduce pollutants and increase turbidity in tidal marsh and open water habitat for migratory bird species in the Bay. Long-term operational discharges of urban contaminants into the stormwater drainage system and ultimate receiving waters would increase relative to existing conditions. As discussed in Section 3.15, "Hydrology and Water Quality," the project would comply with regulatory requirements, including the implementation of permanent stormwater BMPs, to avoid contributing to an increase

in stormwater pollutants discharged to the Bay. This would minimize any increases in turbidity in tidal marsh and open water habitat for migratory bird species in the Bay.

In addition, the two proposed kayak launches, one in the Marineway and the other on the India Basin Open Space property, would attract recreational users whose presence could affect foraging, roosting, and nesting shorebirds. Human presence in the form of kayakers is not anticipated to result in immediate nest failure; but such an increased human presence in tidal marsh and open water habitat at India Basin could affect shorebird behavior, thereby reducing breeding success.

The existing conditions of foraging and nesting habitat at India Basin are poor quality, however, and the project proposes to restore existing tidal marshland and create an additional 0.64 acre of tidal marshland. This increased quality and quantity of potential foraging and nesting habitat at India Basin is anticipated to offset any potential impacts on nesting birds from recreational users.

Under either the proposed project or the variant, with creation and enhancement of habitat for nesting birds, operational impacts on nesting birds at any of the four project site properties would be *less than significant*. No mitigation measures are necessary.

Marine Mammals

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

No known haul-outs[6] for marine mammals are located in the project vicinity and marine mammals are not likely to traverse the India Basin Shoreline Park, 900 Innes, India Basin Open Space, or 700 Innes properties. However, in the unlikely event that a marine mammal enters any of these locations during in-water work such as pile driving, it could be affected by project construction activities. The project-related impacts and mitigation measures for marine mammals discussed in this section would be primarily limited to the India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties and a small portion of the 700 Innes property that connects to the Bay.

The MMPA defines two levels of harassment of marine mammals (70 FR 1871–1875, January 11, 2005). Level A harassment results in potential physical injury to a marine mammal or marine mammal stock in the wild, and Level B harassment results in potential behavioral disruption. The following thresholds have been established by the MMPA and the National Oceanic and Atmospheric Administration 2005 Guidelines:

- For "Level A" harassment:
  - 190 dB root mean square (RMS) for physical injury of pinnipeds, such as Pacific harbor seal and California sea lion.

[6] A marine mammal haul-out is a location where marine mammals (generally pinnipeds such as seals and sea lions) rest on shore for varying lengths of time.

- For "Level B" harassment:
  - 120 dB RMS for behavioral harassment of marine mammals from "continuous" or nonimpulsive source vibrations, and
  - 160 dB RMS for behavioral harassment of marine mammals from "impulse" or impact-source vibrations.

Noise effects from hydraulic impact hammers are considered "impulse" or impact-source vibrations. Impulsive sources are transient, brief (less than 1 second), and broadband, and they typically consist of high peak pressure with rapid rise time and rapid decay. "Continuous" or nonimpulsive-source vibrations include such methods as using vibratory hammers for pile driving. Under either the proposed project or the variant, the construction impact on marine mammals from using either of these methods at any of the project site properties could be significant.

Mitigation Measure M-BI-1a, "Prepare and Implement a Hydroacoustic Monitoring Program for Special-Status Fish and Marine Mammals," would be implemented to reduce the impact of construction at any of the project site properties on marine mammals. Under this mitigation measure, a marine mammal monitoring plan would be implemented as described above. Implementation of Mitigation Measure M-BI-1a and coordination with NMFS would reduce impacts on marine mammals at the four project site properties to *less than significant with mitigation*.

Operation

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

No known haul-outs for marine mammals are present at any of the project site properties. Therefore, operational impacts on marine mammals could occur only if habitat restoration on these properties were to attract marine mammals, and those marine mammals were negatively affected by noise or human presence from visitors to the project site. The creation of foraging habitat or, potentially, of haul-out sites for marine mammals in the Bay adjacent to these properties would be considered beneficial; however, marine mammals have not been historically present in this area of the Bay. Although portions of the project site are adjacent to the Bay, the site's users are not anticipated to have direct interaction with marine mammals or to be involved in activities that would affect marine mammals. *No impact* on marine mammals is anticipated at any of the project site properties during project operation under either the proposed project or the variant.

Overall Impact Conclusion

The overall impact of the proposed project or variant related to having an adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS would be *less than significant with mitigation*.

Impact BI-2: The proposed project or variant would have an adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS. *(Less than Significant with Mitigation)*

Construction

Six sensitive biological communities have the potential to be affected by the project: developed open water, open waters, seasonal wetland, wetland swale, tidal marsh (including areas of bare ground and beach), and nonwetland waters. Expected permanent and temporary removal of all vegetation communities and developed areas are detailed by property in Table 3.14-2. Table 3.14-5 summarizes removal of the six sensitive natural communities.

India Basin Shoreline Park Property

In-water work at the India Basin Shoreline Park property (adding a new 480-foot-long by 12-foot-wide pier, removing current shoreline/riprap, and replacing it with tidal marsh habitat) would result in permanent removal of approximately 0.07 acre of tidal marsh. Approximately 1.20 acres of open water would also be permanently removed. Other temporary and permanent impacts below high tide line (e.g. beach, developed open water, bare, etc.) are detailed in Table 3.14-2, and summarized in Table 3.14-5.

In addition, sensitive biological communities may be affected by project-related runoff that would increase water turbidity and introduce pollutants. These impacts would be similar to those described in Impact BI-1. Because temporary and permanent loss of sensitive natural communities is anticipated, the impact of construction at the India Basin Shoreline Park property under the proposed project or variant on biologically sensitive habitats could be significant.

Table 3.14-5: Temporary and Permanent Removal of Sensitive Natural Communities, including Clean Water Act Section 404 Jurisdictional Waters

Property	Permanent Impacts (acres)	Temporary Impacts (acres)	Total (acres)
India Basin Shoreline Park	1.27		1.27
900 Innes	0.18	0.39	0.57
India Basin Open Space	0.32	1.08	1.4
700 Innes	0.34	0	0.34
Total	**2.11**	**1.47**	**3.58**

Note: This table summarizes removal of specific communities included in Table 3.14-2: developed open water, open waters, seasonal wetland, wetland swale, tidal marsh including areas of bare ground and beach, and nonwetland waters.
Sources: San Francisco, 2017a and 2017b

Mitigation Measure M-BI-1c, "Prepare and Implement a Vegetation Restoration Plan and Compensatory Mitigation," presented above would be implemented to reduce this significant impact of construction at the India Basin Shoreline Park property under the proposed project or variant on biologically sensitive habitats. This measure would be implemented to preserve or create on-site wetland features at the project site through the permitting process with USACE, the San Francisco Bay RWQCB, and BCDC.

900 Innes Property

Remediation actions and the removal and construction of two replacement piers at the 900 Innes property would result in the temporary removal of approximately 0.26 acre and the permanent removal of approximately 0.09 acre of open water. Other temporary and permanent impacts below high tide line (e.g. beach, developed open water, bare, etc.) are detailed in Table 3.14-2, and summarized in Table 3.14-5. In addition, sensitive biological communities may be affected by project-related runoff that would increase water turbidity and introduce pollutants. These impacts would be similar to those described in Impact BI-1. Because temporary and permanent loss of sensitive natural communities is anticipated, the impact of construction at the 900 Innes property under the proposed project or variant on biologically sensitive habitats could be significant.

Mitigation Measure M-BI-1c, "Prepare and Implement a Vegetation Restoration Plan and Compensatory Mitigation," presented above would be implemented to reduce this significant impact of construction at the 900 Innes property under either the proposed project or variant on biologically sensitive habitats. This measure would be implemented to preserve or create on-site wetland features at the project site through the permitting process with USACE, the San Francisco Bay RWQCB, and BCDC.

India Basin Open Space Property

Construction at the India Basin Open Space property (restoring and creating tidal marshland, constructing boardwalks, constructing a pier, and relocating a historic house along the shoreline) would result in the temporary removal of approximately 0.53 acre and permanent removal of approximately 0.27 acre of tidal marsh. Construction activities under the proposed project or variant would also result in the permanent removal of approximately 0.28 acre and permanent removal of 0.03 acre of open water. Other temporary and permanent impacts below high tide line (e.g. beach, developed open water, bare, etc.) are detailed in Table 3.14-2, and summarized in Table 3.14-5. In addition, sensitive biological communities may be affected by project-related runoff that would increase water turbidity and introduce pollutants. These impacts would be similar to those described in Impact BI-1. Because a temporary and permanent loss of sensitive natural communities is anticipated, the impact of construction at the India Basin Open Space property under the proposed project or variant on biologically sensitive habitats could be significant.

Mitigation Measure M-BI-1c, "Prepare and Implement a Vegetation Restoration Plan and Compensatory Mitigation," presented above would be implemented to reduce this significant impact of construction at the India Basin Open Space property under the proposed project or variant on biologically sensitive habitats. This measure would be implemented to preserve or create on-site wetland features at the project site through the permitting process with USACE, the San Francisco Bay RWQCB, and BCDC.

700 Innes Property

At the 700 Innes property, the proposed project and the variant would have similar construction impacts on sensitive natural communities. The variant would involve constructing up to 1 million gross square feet (gsf) of commercial/institutional uses and 500 dwelling units, fewer dwelling units but a larger amount of commercial uses than under the proposed project. Construction at the 700 Innes property under the proposed project or variant would result in the permanent removal of 0.26 acre of seasonal wetland, 0.04 acre of wetland swale, and 0.01 acre of waters (ponded area located on disturbed infill and a linear drainage ditch). A small portion of work would

occur in the Bay for the removal of the pier and piles, which would replace 0.03 acre of developed open waters with open water habitat. No removal of tidal marsh would occur at this property.

Construction activities at the 700 Innes property may also result in runoff-related impacts on adjacent sensitive natural communities in the Bay. Runoff-related impacts would be similar to those detailed for the other three project site properties, including increased turbidity and introduction of pollutants.

Impacts of construction at the 700 Innes property under the proposed project or variant on sensitive natural communities could be significant.

Mitigation Measure M-BI-1c, "Prepare and Implement a Vegetation Restoration Plan and Compensatory Mitigation," presented above would be implemented to reduce this significant impact of construction at the 700 Innes property under the proposed project or variant on biologically sensitive habitats. Because these sensitive natural communities are also Section 404/401 jurisdictional waters, permits would be obtained from USACE and the San Francisco Bay RWQCB, and a mitigation strategy would be refined and approved through this permitting process.

Overall Construction Impact Conclusion

Mitigation Measure M-BI-1c requires the creation or restoration of sensitive natural communities at a ratio of no less than 1:1. In addition, the project proposes to replace approximately 0.64 acre of existing shoreline of the project site with tidal marshland (Table 3.14-4). Implementation of Mitigation Measure M-BI-1c and development and implementation of a project SWPPP as detailed in Section 3.15, "Hydrology and Water Quality," would reduce the impact of construction at all four project site properties under the proposed project or variant on sensitive natural communities to *less than significant with mitigation*.

Operation

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Under either the proposed project or the variant, operational impacts on sensitive natural communities at all four project site properties would be limited to the generation of stormwater on the project site, and the resulting potential to introduce pollutants and increase turbidity in tidal marsh and open water habitat in the Bay. Long-term operational discharges of urban contaminants into the stormwater drainage system and ultimate receiving waters would increase relative to existing conditions. The variant would involve constructing up to 1 million gsf of commercial/institutional uses and 500 dwelling units, fewer dwelling units but a larger amount of commercial uses than under the proposed project.

As discussed in Section 3.15, "Hydrology and Water Quality," the project would comply with regulatory requirements, including the implementation of permanent stormwater BMPs, to avoid contributing to an increase in stormwater pollutants discharged to the Bay. This would minimize any increases in turbidity in tidal marsh and open water habitat in the Bay. Therefore, at all four project site properties, operational impacts of the proposed project or variant on sensitive natural communities would be *less than significant.* No mitigation measures are necessary.

Impact BI-3: The proposed project or variant would have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. ***(Less than Significant with Mitigation)***

Construction

India Basin Shoreline Park Property

In-water work at the India Basin Shoreline Park property (adding a new 480-foot-long by 12-foot-wide pier, removing current shoreline/riprap, and replacing it with tidal marsh habitat) would result in the permanent removal of approximately 0.07 acre of tidal marsh. Approximately 1.20 acres of open water would also be permanently removed. Other temporary and permanent impacts below high tide line (e.g. beach, developed open water, bare, etc.) are detailed in Table 3.14-2, and summarized in Table 3.14-5. These features are considered potentially jurisdictional and subject to federal protection under Section 404 of the CWA. Impacts on Section 404 jurisdictional waters are detailed in Table 3.14-2 and summarized in Table 3.14-5.

RPD would obtain permits from USACE, BCDC, and the San Francisco Bay RWQCB for the discharge of fill material to waters of the United States and waters of the State. Both in-water and shoreline construction work at the India Basin Shoreline Park property could increase turbidity and pollutants in these water features, similar to the impacts discussed for species habitat in Impact BI-1. In-water work and stormwater runoff from the project site may temporarily increase the Bay's turbidity, which has the potential to degrade the water quality of the Bay and potentially jurisdictional features (e.g., existing tidal marshland) on the project site. Materials used during construction (e.g., oils, transmission and hydraulic fluids, fuel) could be spilled accidentally and enter the Bay or tidal marsh areas, degrading the quality of these features.

Given the ecological significance of open water habitat and tidal marsh habitat in the Bay, this impact of construction at the India Basin Shoreline Park property under the proposed project or variant on federally protected wetlands could be significant.

Mitigation Measure M-BI-1c, "Prepare and Implement a Vegetation Restoration Plan and Compensatory Mitigation," presented above and Mitigation Measure M-HY-1b, "Implement Pile Removal BMPs," presented in Section 3.15, "Hydrology and Water Quality," would be implemented to reduce this significant impact of construction at the India Basin Shoreline Park property under the proposed project or variant on federally protected wetlands.

Creating and enhancing tidal marsh habitat along the edges of India Basin Shoreline Park and India Basin Open Space is the primary method by which permanent and temporary impacts on Section 404 jurisdictional waters would be offset. Enhancing habitat on the project site and along the shoreline may also involve installing sand dunes, bird islands, brackish lagoons, scrub upland plantings, and new wetlands and ponds. Because the habitat present on the project site is of low quality, creating new tidal marsh, wetland, and pond features on the project site would likely serve as the mechanism for mitigating impacts on potentially jurisdictional waters. Mitigation Measure M-BI-1c requires the creation or restoration of sensitive natural communities at a ratio of no less than 1:1. In addition, the project proposes to replace approximately 0.64 acre of existing shoreline of the project site with tidal marshland (Table 3.14-4). As stated previously, permits would be obtained from USACE, BCDC, and

the San Francisco Bay RWQCB. In addition, mitigation measures would be implemented to minimize impacts on tidal wetlands and the Bay: Mitigation Measure M-BI-1c, "Prepare and Implement a Vegetation Restoration Plan and Compensatory Mitigation," and Mitigation Measure M-HY-1b, which requires implementing water quality BMPs.

900 Innes Property

Remediation actions and the replacement of two piers at the 900 Innes property would result in the temporary removal of approximately 0.26 acre and permanent removal of approximately 0.09 acre of open water. Construction activities would also result in the temporary removal of approximately 0.13 acre and permanent removal of 0.09 acre of developed open water. Other temporary and permanent impacts below high tide line (e.g. beach, developed open water, bare, etc.) are detailed in Table 3.14-2, and summarized in Table 3.14-5. These features are considered potentially jurisdictional and subject to federal protection under Section 404 of the CWA.

As detailed previously for the India Basin Shoreline Park property, RPD would obtain permits from USACE, BCDC, and the San Francisco Bay RWQCB for the discharge of fill material to waters of the United States and waters of the State. Both in-water and shoreline construction work at the 900 Innes property could increase turbidity and pollutants in these water features, similar to those impacts discussed for species habitat in Impact BI-1. In-water work and stormwater runoff from the project site may temporarily increase the Bay's turbidity, which has the potential to degrade the water quality of the Bay and potentially jurisdictional features (e.g., existing tidal marshland) on the project site. Materials used during construction (e.g., oils, transmission and hydraulic fluids, fuel) could be spilled accidentally and enter the Bay or tidal marsh areas, degrading the quality of these features.

Given the ecological significance of open water habitat in the Bay, this impact of construction at the 900 Innes property under the proposed project or variant on federally protected wetlands could be significant.

Mitigation Measure M-BI-1c, "Prepare and Implement a Vegetation Restoration Plan and Compensatory Mitigation," presented above and Mitigation Measure M-HY-1b, "Implement Pile Removal BMPs," presented in Section 3.15, "Hydrology and Water Quality," would be implemented to reduce this significant impact of construction at the 900 Innes property under either the proposed project or variant on federally protected wetlands.

Creating and enhancing tidal marsh habitat along the edges of the India Basin Shoreline Park and India Basin Open Space properties is the primary method by which permanent and temporary impacts on Section 404 jurisdictional waters would be offset. Enhancing habitat on the project site and along the shoreline may also involve installing sand dunes, bird islands, brackish lagoons, scrub upland plantings, and new wetlands and ponds. Because the habitat present on the project site is of low quality, creating new tidal marsh, wetland, and pond features and enhancing existing features on the project site would likely serve as the mechanism for mitigating impacts on potentially jurisdictional waters. As stated previously, permits would be obtained from USACE, BCDC,and the San Francisco Bay RWQCB. Mitigation Measure M-BI-1c requires the creation or restoration of sensitive natural communities at a ratio of no less than 1:1. In addition, the project proposes to replace approximately 0.64 acre of existing shoreline of the project site with tidal marshland (Table 3.14-4). Mitigation measures would be implemented to minimize impacts on tidal wetlands and the Bay. Mitigation Measures M-BI-1c and M-HY-1b require implementing water quality BMPs.

India Basin Open Space Property

Construction at the India Basin Open Space property (restoring and creating tidal marshland, constructing boardwalks, removing an existing drainage outfall, installing a new kayak launch supported by fill, and relocating a historic house along the shoreline) would result in the temporary removal of approximately 0.53 acre and permanent removal of approximately 0.27 acre of tidal marsh. Construction activities would also result in the temporary removal of approximately 0.28 acre and permanent removal of 0.03 acre of open water, as well as 0.01 acre of permanent removal of developed open water. Other temporary and permanent impacts below high tide line (e.g. beach, bare, etc.) are detailed in Table 3.14-2, and summarized in Table 3.14-5. These features are considered potentially jurisdictional and subject to federal protection under Section 404 of the CWA.

As detailed previously for the India Basin Shoreline Park property, BUILD would obtain permits from USACE, BCDC, and the San Francisco Bay RWQCB for the discharge of fill material to waters of the United States and waters of the State. Both in-water and shoreline construction work at the India Basin Open Space property could increase turbidity and pollutants in these water features, similar to those impacts discussed for species habitat in Impact BI-1. In-water work and stormwater runoff from the project site may temporarily increase the Bay's turbidity, which has the potential to degrade the water quality of the Bay and potentially jurisdictional features (e.g., existing tidal marshland) on the project site. Material used during construction (e.g., oils, transmission and hydraulic fluids, fuel) could be spilled accidentally and enter the Bay or tidal marsh areas, degrading the quality of these features.

Given the ecological significance of open water habitat in the Bay, this impact of construction at the India Basin Open Space under the proposed project or variant on federally protected wetlands could be significant.

Mitigation Measure M-BI-1c, "Prepare and Implement a Vegetation Restoration Plan and Compensatory Mitigation," presented above and Mitigation Measure M-HY-1b, "Implement Pile Removal BMPs," presented in Section 3.15, "Hydrology and Water Quality," would be implemented to reduce this significant impact of construction at the India Basin Open Space property under the proposed project or variant on federally protected wetlands.

Creating and enhancing tidal marsh habitat along the edges of the India Basin Shoreline Park and India Basin Open Space properties is the primary method by which permanent and temporary impacts on Section 404 jurisdictional waters would be offset. Enhancing habitat on the project site and along the shoreline may also involve installing sand dunes, bird islands, brackish lagoons, scrub upland plantings, and new wetlands and ponds. Because the habitat present on the project site is of low quality, creating new tidal marsh, wetland, and pond features and enhancing existing features on the project site would likely serve as the mechanism for mitigating impacts on potentially jurisdictional waters. As stated previously, permits would be obtained from USACE, BCDC, and the San Francisco Bay RWQCB. Mitigation Measure M-BI-1c requires the creation or restoration of sensitive natural communities at a ratio of no less than 1:1. In addition, the project proposes to replace approximately 0.64 acre of existing shoreline of the project site with tidal marshland (Table 3.14-4). Mitigation Measure M-HY-1b requires implementing water quality BMPs.

700 Innes Property

At the 700 Innes property, the proposed project and the variant would have similar construction impacts on sensitive natural communities. The variant would involve constructing up to 1 million gsf of commercial/institutional uses and 500 dwelling units, fewer dwelling units but a larger amount of commercial uses than under the proposed project. Construction at the 700 Innes property under either the proposed project or the variant would result in the permanent removal of 0.26 acre of seasonal wetland, 0.04 acre of wetland swale, and 0.01 acre of waters (ponded area located on disturbed infill and a linear drainage ditch). These features are considered potentially jurisdictional and subject to federal protection under Section 404 of the CWA. Impacts on Section 404 jurisdictional waters are detailed in Table 3.14-2 and summarized in Table 3.14-5.

A small portion of the project work would occur in the Bay for the removal and replacement of the pier and piles, which would replace 0.03 acre of developed open water within open water habitat. No tidal marsh would be removed at the 700 Innes property. Construction activities at this property may also result in runoff-related impacts on adjacent Section 404 jurisdictional waters in the Bay.

Runoff-related impacts at the 700 Innes property would be similar to those detailed for the other three project site properties, including increased temporary turbidity and introduction of pollutants. The impact of construction at the 700 Innes property under the proposed project or variant on Section 404 jurisdictional waters could be significant.

Mitigation Measure M-BI-1c, "Prepare and Implement a Vegetation Restoration Plan and Compensatory Mitigation," presented above and Mitigation Measure M-HY-1a, "Monitor Turbidity during Construction," presented in Section 3.15, "Hydrology and Water Quality," would be implemented to reduce this significant impact of construction at the 700 Innes property under either the proposed project or variant on federally protected wetlands.

Overall Construction Impact Conclusion

Mitigation Measure M-BI-1c requires the creation or restoration of sensitive natural communities at a ratio of no less than 1:1. In addition, the project proposes to replace approximately 0.64 acre of existing shoreline of the project site with tidal marshland (Table 3.14-4). As stated previously, permits would be obtained from USACE, BCDC, and the San Francisco Bay RWQCB. Implementation of Mitigation Measures M-BI-1c and M-HY-1a and development and implementation of a project SWPPP as detailed in Section 3.15, "Hydrology and Water Quality," would reduce the impact of construction at all four project site properties under the proposed project or variant on Section 404 jurisdictional waters to *less than significant with mitigation*.

Operation

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Operational impacts of the proposed project at all four project site properties on Section 404 jurisdictional waters would be limited to stormwater generated within the project site, and its potential to introduce pollutants and increase turbidity in tidal marsh and open water habitat in the Bay. Long-term operational discharges of urban contaminants into the stormwater drainage system and ultimate receiving waters would increase relative to

existing conditions. As discussed in Section 3.15, "Hydrology and Water Quality," the project would comply with regulatory requirements, including the implementation of permanent stormwater BMPs, to avoid contributing to an increase in stormwater pollutants discharged to the Bay. This would minimize any increases in turbidity in tidal marsh and open water habitat in the Bay. Therefore, operational impacts of the proposed project at all four project site properties on Section 404 jurisdictional waters would be *less than significant.* No mitigation measures are necessary.

Impact BI-4: The proposed project or variant would interfere with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. *(Less than Significant with Mitigation)*

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Migratory Birds

Because the project site and surrounding areas are highly developed and disturbed, the San Francisco shoreline in the project area does not provide a movement corridor for terrestrial wildlife. Open water and tidal habitats along the shoreline provide stopovers for migratory birds along the along the Pacific Flyway, a major migration route in North America. Despite this important habitat for migratory birds, the current condition of the project area is primarily developed and disturbed, offering only low-quality habitat for birds to forage and nest. As discussed previously in Impact BI-1a, construction of the project may affect the ability of migratory birds to forage, nest, or stop over in the project vicinity, because habitat would be temporarily removed and both noise levels and human presence would increase. The construction impact of the proposed project or variant on migratory birds and their corridors could be significant.

Mitigation Measure M-BI-1e, "Avoid Nests during Bird Nesting Season," presented above would be implemented under either the proposed project or variant to reduce this significant impact of construction at any of the project site properties on migratory birds nesting in the project area. This measure would require nesting bird surveys and construction buffers for active nests. Temporary removal of habitat for migratory birds would be primarily offset by the creation or restoration of sensitive natural communities at a ratio of no less than 1:1 and the additional replacement of approximately 0.64 acre of existing shoreline of the project site with tidal marshland. Adding this tidal marsh habitat along this section of shoreline would improve habitat connectivity between patches of tidal marshland to the north and south, and would strengthen the Bay's shoreline as a corridor for migratory birds. Implementing Mitigation Measure M-BI-1e would reduce the construction-related impact of either the proposed project or the variant on migratory birds nesting in the project area to *less than significant with mitigation.*

Migrating Marine Mammals, Fish, and Their Corridors

As discussed previously, underwater noise from construction could result in temporary removal of open water and tidal marsh habitat for marine mammals and fish species. Harbor seals, California sea lions, and various fish species forage throughout the Bay. Therefore, underwater noise from construction could cause marine mammals to avoid the project area while migrating to or from haul-out sites or during foraging, and could cause fish to avoid the project area during foraging. The construction impact of the proposed project or variant on migrating marine mammals, fish, and their corridors could be significant.

Although in-water work has the potential to affect the behavior of migrating species, construction activities and structures in the water would not act as physical barriers to migration. With Mitigation Measure M-BI-1a, "Prepare and Implement a Hydroacoustic Monitoring Program for Special-Status Fish and Marine Mammals," a hydroacoustic monitoring program for special-status fish and marine mammals would minimize impacts of underwater noise on these species. In addition, because the existing habitat on these properties is degraded and a relatively large amount of surrounding open water habitat is available, the temporary removal of aquatic habitat for fish and marine mammals in the project vicinity is unlikely to impede fish or marine mammal movement up or down the shoreline. Furthermore, as discussed for migratory birds, temporary removal of habitat for marine mammals and fish would be primarily offset by the creation or restoration of sensitive natural communities at a ratio of no less than 1:1 and the additional replacement of approximately 0.64 acre of existing shoreline of the project site with tidal marshland.

Implementation of Mitigation Measures M-BI-1a and M-BI-1e, the restoration of temporarily affected habitats at a 1:1 ratio, and the additional creation of 0.64 acre of tidal marshland would reduce the construction-related impact of either the proposed project or the variant on wildlife corridors to *less than significant with mitigation*.

Operation

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Birds have the potential to collide with the newly constructed buildings on the project site. Adding open space areas adjacent to developed areas would create bird habitats near proposed buildings and other facilities, potentially increasing risks of bird collisions. Newly constructed buildings would be in compliance with the adopted Standards for Bird-Safe Buildings, as required by Section 139 of the Planning Code. The Standards for Bird-Safe Buildings include requirements for façades, glazing, and lighting to prevent bird collisions. Therefore, operation of the proposed project or variant would not adversely affect resident or migratory birds by increasing the risk of collisions with new buildings or structures. At all four project site properties, operational impacts of either the proposed project or the variant on wildlife corridors would be *less than significant*. No mitigation measures are necessary.

Impact BI-5: The proposed project or variant would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance or the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan. (*Less than Significant*)

Construction

Proposed construction of the new development at the project site would necessitate tree removal. Under the City's Urban Forestry Ordinance (Article 16 of the Public Works Code), street trees, significant trees, and landmark trees must go through a permit process before removal. These trees must also be protected during nearby construction activities if they are not being proposed for removal. This ordinance does not apply to trees located on RPD property or SF Port property. For areas where the ordinance applies, either the tree must be replaced or an in-lieu fee must be paid to SFPW to support its Urban Forestry Program.

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

In total, 42 trees were mapped on the India Basin Shoreline Park property; one tree, a blue gum, was mapped on the 900 Innes property; and six arroyo willows are located on the India Basin Open Space property (San Francisco, 2016b). All of the aforementioned trees are on RPD or SF Port property and are not regulated under the Urban Forestry Ordinance. All of these trees would be removed. Other trees would be planted on the 900 Innes property, which may include species such as coast live oak (*Quercus agrifolia*), California buckeye (*Aesculus californica*), Pacific madrone (*Arbutus menziesii*), and California walnut (*Juglans californica*).

In total, 52 trees were mapped on the 700 Innes property. Of these, 10 trees are considered significant trees, 26 are considered street trees, and 16 are not considered protected under SFPW categorizations (San Francisco, 2014). The proposed project or variant would remove all trees on each project site property as part of the regrading of the site and the realignment of the street rights-of-way.

On the 700 Innes property (including right-of-way and private property located outside of SF Port jurisdiction), removal of the on-site trees would require a permit from SFPW under the Urban Forestry Ordinance. The permit would include conditions that would govern the replacement planting of trees as part of the 700 Innes property development. Planning Code Section 138.1 requires one street tree for every 20 feet of street frontage. The replacement species would be coordinated with the Bureau of Urban Forestry, which has jurisdiction over the street trees on the 700 Innes property. The proposed project or variant would also be required to comply with SFPW regulations and the Urban Forestry Ordinance.

Permitting and coordination with the agencies described above would ensure that the replacement of trees would not conflict with local policies or ordinances. Therefore, the construction impact of either the proposed project or variant related to consistency with local biological protection plans and policies would be *less than significant.* No mitigation measures are necessary.

Operation

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Project operations under either the proposed project or the variant are not expected to result in the removal of trees regulated under the Urban Forestry Ordinance; therefore, project operations would not conflict with the Urban Forestry Ordinance. At all four project site properties, the operational impact of either the proposed project or the variant related to consistency with local biological protection plans and policies would be *less than significant.* No mitigation measures are necessary.

3.14.4 Cumulative Impacts

Impact-C-BI-1: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would not substantially contribute to cumulative impacts related to biological resources. ***(Less than Significant)***

Construction

The geographic scope for cumulative impacts on biological resources is primarily limited to San Francisco's eastern shoreline, where open water and tidal marsh vegetation provide habitat for the breeding, foraging, and migration of special-status species. Much of the India Basin area was created using fill. Projects from decades ago, including the filling of existing tidal marsh and open water habitat in the vicinity of Hunters Point, previously caused substantial adverse cumulative effects on biological resources.

Construction of the proposed project or variant in combination with the projects identified in Table 3-1, especially those that increase development and human presence along the shoreline by adding dwellings (e.g., Candlestick Point and Hunters Point Shipyard), could potentially result in significant cumulative impacts on special-status species and their habitats. Because the shoreline acts as a corridor for bird and fish movement, additional development along the shoreline results in cumulative impacts on the movement of common and special-status species.

The majority of the project site consists of developed land, disturbed infill, mixed and maintained landscaping, bare soil, sand, gravel, concrete debris, and riprap (Table 3.14-1). The small portions of habitat (tidal marsh and coastal scrub) that still exist at the project site were identified as being of poor quality and do not provide habitat for some of the Bay's most threatened and endangered species—Ridgway's rail, California black rail, and salt marsh harvest mouse. Projects located along the shoreline that increase development have the potential to further reduce habitat for these species. Increased human presence often causes special-status species to avoid habitat that normally would be suitable.

The creation and enhancement of tidal marsh habitat planned for the India Basin Shoreline Park and India Basin Open Space properties would increase the quality of habitat at the project site, and would result in more suitable habitat for special-status species. When considered relative to the cumulative impact on biological resources caused by past development, the proposed project or variant would restore portions of the project site that are most beneficial to species—tidal marshland. In addition, cumulative development projects would be required to follow regulations similar to those described for the proposed project and variant, including measures to protect special-status species and mitigate impacts on species habitat as well as wetlands and waters.

Overall, the proposed project, in combination with other past, present, and reasonably foreseeable future projects, would not result in significant adverse impacts on biological resources. Therefore, the cumulative construction-related impact on biological resources would be *less than significant.* No additional mitigation measures are necessary to address cumulative impacts.

Operation

Operation of the cumulative projects listed in Table 3-1 would intensify human presence relative to existing conditions, but that intensification would occur primarily on previously developed and disturbed land and would not substantially adversely affect biological resources. In addition, the proposed project or variant would result in the enhancement and creation of tidal marshland, which is beneficial to some of the most threatened species in the Bay. The cumulative operational impact on biological resources would be *less than significant.* No mitigation measures are necessary.

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3.15 HYDROLOGY AND WATER QUALITY

This section describes the existing environmental and regulatory setting related to hydrology and water quality and addresses the potential impacts of the proposed project and variant related to hydrology and water quality. Information supporting the analysis of hydrology and water quality is presented in Appendix L of this EIR. Comments related to hydrology and water quality, including stormwater pollution and runoff/retention, sea-level rise, areas of open water, and the role of water boards, were received during the public scoping period in response to the Notice of Preparation. These comments are addressed in this section.

3.15.1 Environmental Setting

Climate

San Francisco is considered semiarid with a moderate Mediterranean climate characterized by moderately wet winters, dry summers, and few days of extreme temperatures. The approximate annualized average high temperature, as taken at the Richmond weather monitoring station in San Francisco between 1948 and 2016, is 62 degrees Fahrenheit (ºF); the average low temperature is 49ºF (WRCC, 2016a). The project site is located in the southeastern quadrant of San Francisco. For the period from 1948 to 2016, average annual rainfall for the southern part of the city was about 20 inches per year (WRCC, 2016a and 2016b). Approximately 84 percent of the total annual rainfall occurs from November to March, with 40 percent occurring during December and January (SFPUC, 2010). During the 1948–2012 period, annual rainfall varied from 10.7 inches (1990) to 35.8 inches (1998), with a 1-day high of 3.9 inches of precipitation (WRCC, 2012).

Surface Hydrology

Regional

San Francisco Bay (Bay) is the largest estuary on the West Coast of the United States, where freshwater from California's Central Valley mixes with the saline waters of the Pacific Ocean. The Bay's surface area is 480 square miles and approximately 70 percent of the Bay is less than 18 feet deep. There are typically two tidal cycles per day and up to 30 percent of the Bay's water volume is exchanged with the Pacific Ocean during each tidal cycle.

San Francisco

Watershed

The topography of San Francisco naturally divides the City into two main drainage basins, the Oceanside (flowing to the Pacific Ocean) and the Bayside (flowing to the Bay). San Francisco's eight urban watersheds reflect the City's native ecology and human history. Five of these watersheds compose the Bayside Drainage Basin. The basin covers 18,411 acres, more than 60 percent of the City, and is home to a population of approximately 455,000 people (more than 65 percent of San Francisco's total population) in 21 of San Francisco's 36 neighborhoods and portions of seven others. Most of the land in the basin (71 percent) is impervious, and throughout the basin, the terrain transitions sharply from the interior hills to the flat lowlands adjacent to the shoreline (SFPUC, 2013).

One of the Bayside Drainage Basin watersheds is the Islais Creek watershed, which has a drainage area of approximately 6,692 acres (10.5 square miles) and represents 36 percent of the land area in San Francisco (SFPUC, 2013). The Islais Creek watershed is bounded by Twin Peaks to the west, Potrero Hill to the north, the Bay to the east, and San Bruno Mountain to the south (SFPUC, 2009). The primary natural waterway in the Islais Creek watershed is Islais Creek, once known as DuVrees Creek, which originally had two branches. The first branch ran from south of Twin Peaks through Glen Canyon and the second flowed eastward from present-day Cayuga Avenue and Regent Street. Historically, the mouth of Islais Creek was 2 miles wide and joined the Bay in today's Bayview and Hunters Point districts (SFPUC, 2009). Islais Creek was once the largest body of water in San Francisco, running for a total of 3.5 miles, and was located approximately 1.3 miles northwest of the project site (SFPUC, 2016a). The project site is situated in the Bayside watershed, and more specifically, in the southeastern portion of the Islais Creek urban watershed.

Stormwater Runoff and Sewage

The San Francisco Public Utilities Commission (SFPUC) is the public agency charged with management and treatment of San Francisco's stormwater runoff and sewage. Combined sewers, which carry stormwater and wastewater together through San Francisco's underground pipes to one of two main wastewater treatment plants, serve most but not all of San Francisco. SFPUC's approach to managing stormwater runoff in combined sewer areas is to capture, store, and treat all wet-weather flows, thereby providing a high level of water quality protection to the Bay and the Pacific Ocean. Historically, numerous streams and creeks flowed through drainage channels from San Francisco's hills and valleys to the Bay and the Pacific Ocean. Today, most of San Francisco's creeks are buried underground in culverts or are filled, so watersheds are intimately linked to the City's stormwater runoff and sewer system.

Ninety-two percent of the runoff generated in the Islais Creek watershed flows into the combined sewer system that drains to SFPUC's Southeast Treatment Plant, located in the watershed near the historic outflow of Islais Creek (SFPUC, 2013). Transport/storage structures, sewers, and pump stations transport wastewater and stormwater to the Southeast Treatment Plant, which treats an average of 60 million gallons per day (mgd) and up to 250 mgd during rainstorms, representing 80 percent of the City's flows (SFPUC, 2014). Treated flows discharge from the Southeast Treatment Plant into the Bay through a 110-mgd deep-water outfall (Discharge Point No. 001) at Pier 80 (San Francisco Bay RWQCB, 2013). During wet weather, flows exceeding the outfall's capacity are discharged via the Quint Street shallow-water outfall into the concrete-lined Islais Creek channel (Discharge Point No. 002). During wet weather when the combined sewage-stormwater flows exceed system capacity and available storage, the combined flows on the east side of San Francisco are discharged to the Bay through 29 combined sewer overflow (CSO) structures.

The Islais Creek watershed has a total of 10 CSO structures in addition to the two outfalls from the Southeast Treatment Plant. Outfalls 037 (Evans Street) and 038 (Hudson Avenue) discharge from the 900 Innes property into the Bay within the project site; however, the model-predicted frequency of combined sewer discharges (CSDs) from these two outfalls is one discharge and zero discharges, respectively, for a typical rainfall year (SFPUC, 2013).

CSDs are subject to "flow-through treatment" consisting of the removal of settleable (i.e., settling to the bottom) and floating solids. Discharge occurs in accordance with the terms of the National Pollutant Discharge Elimination System (NPDES) permits described in Section 3.15.2, "Regulatory Framework." Discharges during

heavy rain events typically consist of 94 percent treated stormwater and 6 percent treated sanitary flow (SFPUC, 2016b). The San Francisco Bay Regional Water Quality Control Board (RWQCB) permits up to 10 CSD events per year from the CSO outfalls at and north of Islais Creek in the central basin area of San Francisco; one CSD event per year is permitted from the area of Yosemite Slough south to the San Francisco boundary; and four events per year are permitted along the City's north shore area (San Francisco Bay RWQCB, 2013).

Approximately 10 percent of the City is served by separate storm sewer systems or lacks storm sewer infrastructure. In isolated areas in the Islais Creek watershed, including the Bayview Hunters Point neighborhood, stormwater is collected separately from wastewater by a municipal separate storm sewer system (MS4) or drains directly to the Bay. Existing separate storm sewer systems do not generally provide treatment before discharge to the Bay.

Project Site

The project site is located adjacent to the Bay. Large parts of the India Basin Shoreline Park, 900 Innes, and 700 Innes properties and the entire India Basin Open Space property were created between 1915 and 1929 using fill (SFPUC, 2016a) (Figure 3.15-1). Because of its location almost entirely on fill, the project site is mapped as historical tidal marsh adjacent to the Bay (SFPUC, 2013).

The project site is generally flat, with a slight slope toward the Bay. The site's highest elevation is along Innes Avenue at approximately 50 feet above mean sea level (msl), and the lowest elevation is along the shoreline at approximately 5 feet above msl. No watercourses are located within the project site, which consists of a mix of pervious open space and habitat areas and impervious buildings along the southwestern edge. Paved walkways and roads are also present across the project site.

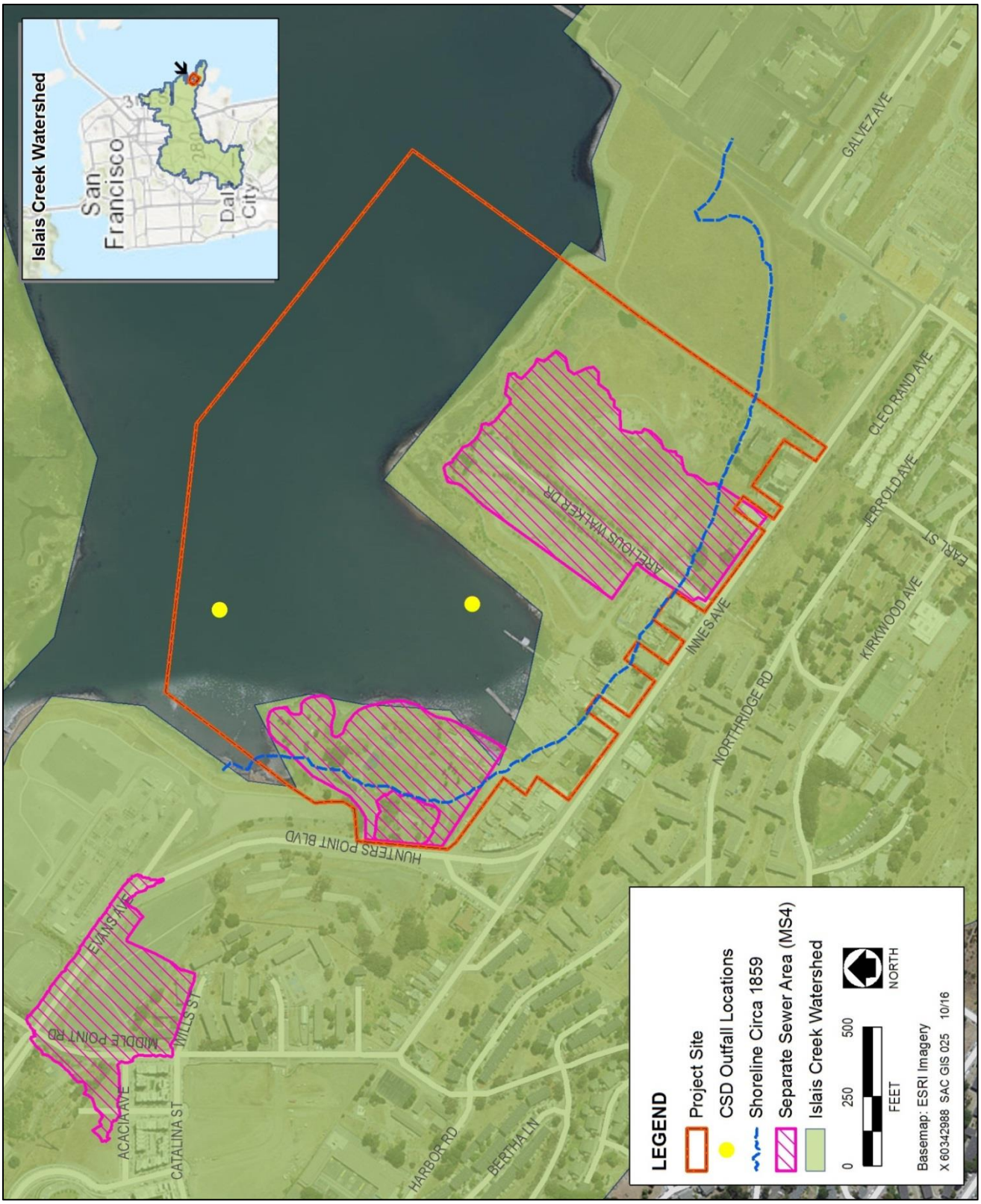
The project site is situated in the Bayside watershed, and more specifically, in the southeastern portion of the Islais Creek urban watershed. Portions of the project site are located in the MS4 area of the City, including the India Basin Shoreline Park property, the northern tip of the 900 Innes property, and the portion of the 700 Innes property centered around Arelious Walker Drive (Figure 3.15-1).

India Basin Shoreline Park Property

The India Basin Shoreline Park property generally slopes gently from Hunters Point Boulevard, at approximately 45 feet above msl, down to the Bay. The shoreline of India Basin Shoreline Park is composed of vegetated berm, with intertidal marshes and engineered revetments.[1] The top of the vegetated berm ranges from approximately +9 to +15 feet North American Vertical Datum of 1988 (NAVD88); the top elevation of the engineered rock revetment is at +9 to +10 feet NAVD88 (M&N, 2015). This property is located in a separate storm sewer area.

The India Basin Shoreline Park property is partially undeveloped, consisting primarily of pervious areas in the form of wetlands and upland plantings. The property also includes two play structures, a basketball court, landscaping, a portion of the Blue Greenway/San Francisco Bay Trail (Bay Trail), and restrooms. Vehicular access to the park is provided via the paved Hawes Street, which has designated parking areas and ends at a cul-de-sac and drop-off area. Graveled Hudson Avenue also provides parking on the southern edge of the property.

[1] Revetments are sloping structures placed on banks or cliffs to absorb the energy of incoming water and prevent erosion.



Sources: San Francisco Bay RWQCB, 2013; SFPUC, 2016c; U.S. Coast Survey 1859 Map

Figure 3.15-1: Project Site Hydrologic Features

There is one existing storm drain inlet within the turnaround street on the property. Stormwater that enters this drain inlet is conveyed to an outfall that discharges to the Bay. Some portions of the property enable overland water flow to this inlet, while the remainder of the property allows for overland flow of water directly to the shoreline (MKA, 2016a). A combined sewer overflow pipe runs under Hudson Avenue and beneath the India Basin Shoreline Park property; however, this property is not connected to the pipe.

900 Innes Property

The 900 Innes property is relatively flat and consists of seven parcels totaling 2.4 acres, 0.6 acre of which is submerged. The property contains five buildings and structures totaling approximately 7,760 square feet (sq. ft.). Much of the property is developed with buildings or pavement, and the remaining area is open water. There is no existing vegetation on the property.

Drainage from the 900 Innes property allows overland flow of water to the shoreline and discharges into the Bay. This property is not currently mapped in the City's geographic information system as part of the Separate Sewer Area; SFPUC has indicated that this is because it has no inlet/outlet infrastructure (MKA, 2016a). As described for the India Basin Shoreline Park property, a combined sewer overflow pipe in Hudson Avenue crosses the 900 Innes property and then outfalls within the property. The 900 Innes property, however, is not connected to the pipe.

The shoreline along this property is composed of concrete structures along the northeast-facing shoreline and a vegetated bluff along the western (southeast-facing) shoreline that leads to a mudflat. The top of bank elevations range from +7 to +9 feet NAVD88 at the concrete structures to approximately +17 feet NAVD88 along the vegetated bluff (M&N, 2015).

India Basin Open Space Property

The 6.2-acre India Basin Open Space property contains benches, a trail, upland habitat, tidal salt marsh, mudflats, sand dunes, native vegetation, offshore eelgrass beds, and a drainage outfall.[2] The tidal salt marsh is the result of a 2002 wetlands mitigation project for San Francisco International Airport, and occupies 2.5 acres of the India Basin Open Space. The wetlands were engineered to be influenced by tidal flows, providing 80 percent salty marsh cover that provides important habitat for flora and fauna. The park also includes a paved portion of the Blue Greenway/Bay Trail along its shoreline. Approximately 0.3 acre (5 percent) of the property is currently impervious and approximately 5.9 acres (95 percent) are pervious and do not contain any drainage infrastructure.

In general, the Bay shoreline in this area is composed of vegetated bluffs fronted by an intertidal marsh. Offshore of the intertidal marsh (below mean tide level), a sloped foreshore extends to mudflats. A layer of rock has been placed at the toe of the vegetated bluff along the northeast shoreline to provide scour protection. Bayward of the tidal marsh, a concrete debris berm serves as a wave break. The top of bank elevations generally range from +15.5 to +19.5 feet NAVD88, with the lower elevations at the southern and northern edges of the property where it connects to the adjacent properties (M&N, 2015). The property falls within the MS4 area and is not serviced by the City's combined sewer.

[2] According to a recent site visit, no eelgrass was observed on the project site; however, there is potential for eelgrass. See Chapter 3.14 Biological Resources.

700 Innes Property

The 700 Innes property is generally undeveloped, except for six buildings and structures that run along or near Innes Avenue. Approximately 1.7 acres (10 percent) of the property are impervious, including asphalt pavement on Arelious Walker Drive and Hudson Avenue and other impervious surfaces such as building roofs. The property slopes away from Innes Avenue along the western edge to the east at 5–10 percent slope to a mostly flat site of 1–2 percent slope that ultimately drains to the Bay.

Portions of the property fall within the MS4 area (Figure 3.15-1). The portions of the property that do not fall into the MS4 area are serviced by a combined sewer located within Innes Avenue. Because of the site's topography, which slopes away from Innes Avenue and toward the Bay, most of the property has difficulty draining via gravity to the existing infrastructure within Innes Avenue because it is located in the opposite direction of the slope.

Arelious Walker Drive is a paved street that runs north to south, roughly bisecting the 700 Innes property and ending in a cul-de-sac turnaround. Existing storm drain infrastructure on the 700 Innes property includes a 24- to 30-inch storm drain of unknown material within Arelious Walker Drive. Pipe flows are from southwest to northeast, and the pipe ends at the abandoned combined sewer pump station north of the existing cul-de-sac. The combined sewer system was installed for a prior development plan on the property that was never built. The City never accepted this infrastructure, which remains private. There are multiple manholes in Arelious Walker Drive with catch basins located at regular intervals in the gutters on both sides of the crowned street. In addition to the storm drain infrastructure within Arelious Walker Drive, two small culvert outfalls drain to the Bay from the undeveloped portions of the property.

Flooding and Inundation

San Francisco

Water levels along the Bay shoreline of the project site are dominated by a mixed semi-diurnal tide, which has two unequal highs and lows each day. The City's datum elevation is 11.1 feet NAVD88, with a 6.37 feet NAVD88 mean higher high water (MHHW[3]), which include astronomical tide, storm surge, and tsunamis over the period of observation (M&N, 2015).

Flood hazard areas—those areas susceptible to flooding—are mapped by the Federal Emergency Management Agency (FEMA). FEMA maps do not take into account future conditions or reflect sea-level rise. To protect such areas from flood hazards, FEMA administers the National Flood Insurance Program (NFIP). The NFIP is a federal program created to avert future flood losses through building and zoning ordinances and to provide federally backed flood insurance protection for property owners. The City is a participant in the NFIP.

100-Year Flood

To support the NFIP, FEMA publishes flood insurance rate maps (FIRMs) for participating communities, which are used for flood insurance and floodplain management purposes. The FIRMs delineate different special flood

[3] MHHW is the higher of each day's two high tides averaged over time.

hazard area zones. Special flood hazard areas associated with the 1 percent probability of annual exceedance are zones that begin with the letter "A" (e.g., Zone A, Zone AE, and Zone AO). FEMA released a preliminary FIRM for the City on November 12, 2015.

Seiche

A seiche is an oscillation of a body of water. Seiches occur most frequently in enclosed or semi-enclosed basins, such as lakes, bays, or harbors, and may be triggered by strong winds, changes in atmospheric pressure, earthquakes, tsunamis, or tides. Triggering forces that set off a seiche are most effective if they operate at specific frequencies relative to the size of an enclosed basin. Coastal measurements of sea level often show seiches with amplitudes of a few centimeters and periods of a few minutes, caused by oscillations of the local harbor, estuary, or bay, superimposed on the normal tidal changes. Tidal records for the Bay have been maintained for more than 100 years; a damaging seiche has not occurred during this period. A seiche of approximately 4 inches occurred during the 1906 earthquake, an event of magnitude 8.3 on the Richter scale.

Tsunami

Tsunamis (large waves in the ocean typically generated by land disturbances such as earthquakes, landslides, and volcanoes) are not common on the California coast (San Francisco, 2012). Most California tsunamis are associated with distant earthquakes originating in places like Alaska and Japan, as opposed to local earthquakes. The National Oceanic and Atmospheric Administration operates the Tsunami Warning System with centers located in Hawaii and Alaska. The California State Warning Center provides warnings to the West Coast (including California) and Alaska. These warning centers are linked to the Advanced National Seismic System that monitors earthquakes in the United States, to international seismic monitoring systems, and to a system of tide gauges and buoys. The California Integrated Seismic Network also provides information regarding the magnitude and location of California earthquakes and a quick link to the West Coast/Alaska Tsunami Warning Center.

On average, the tsunami warning system will take 7–10 minutes to identify a tsunami threat and communicate it to the media and State warning centers (San Francisco, 2011:26). Members of the public may be notified and warned of a potential tsunami threat and advised of recommended actions via the Outdoor Public Warning System, which may include the use of sirens, public address systems, and broadcast of public safety messages through the media. Once the impact/risk area has been deemed safe for reentry, the Director of the San Francisco Department of Emergency Management, in coordination with the Mayor, will authorize an issuance for an "all clear" public safety message. An Outdoor Public Warning System siren is located at Innes Avenue and Hunters Point Boulevard (SFDT, 2015).

Mudflow

Mudflows typically occur on steep slopes where vegetation is not sufficient to prevent rapid erosion.

Sea-Level Rise

Sea-level rise is caused by thermal expansion—the expansion of water from increased ocean temperatures—and melting of glaciers, ice caps, and ice sheets. Sea-level rise can result in the destruction of coastlines, saltwater

intrusion into freshwater sources, flooding of wetlands, and habitat loss. Sea level at the San Francisco tide gauge has risen 8 inches (or 20 centimeters) over the past century (CCC, 2015).

Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future, published by the National Research Council (NRC) of the National Academies of Sciences, Engineering, and Medicine (NRC, 2012), provides sea-level rise projections for the California, Oregon, and Washington coasts. This report provides the most recent predictions of regional sea-level rise for 2030, 2050, and 2100 relative to the year 2000 sea level. The report projects that sea levels in the San Francisco Bay Area (Bay Area) will rise 11 inches (range of 5–24 inches) by 2050 and 36 inches (range of 17–66 inches) by 2100 (NRC, 2012) (Table 3.15-1). The likelihood that sea-level rise will occur by certain time frames is described as follows (NRC, 2012):

- 12 inches of sea-level rise is "most likely" by 2050.
- 24 inches of sea-level rise by 2050 represents the upper uncertainty boundary.
- 36 inches of sea-level rise is "most likely" by 2100.
- 48 inches of sea-level rise by 2100 is within the upper 85 percent confidence interval.
- 66 inches of sea-level rise by 2100 represents the upper uncertainty boundary.

Table 3.15-1: Estimates of Sea-Level Rise for San Francisco Bay, Relative to Baseline Year 2000

Year	Sea-Level Rise Projection (inches)	Range	
		Low (inches)	High (inches)
2030	6 ± 2	2	12
2050	11 ± 3.6	5	24
2100	36 ± 10	17	66

Source: NRC, 2012

Sea-level rise projections presented in the 2012 NRC Report represent the permanent increase in mean sea level and the associated average daily high-tide conditions (represented by MHHW) that could result from sea-level rise. These projections do not take into account storm surge, extreme tides, or waves, all of which can result in water levels that are temporarily higher than MHHW.

The California Coastal Commission also supports using the NRC 2012 report as the best available science on sea-level rise in California (CCC, 2015). In March 2013, the Sea-Level Rise Task Force of the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT) released its *State of California Sea-Level Rise Guidance Document* based on the 2012 NRC report. CO-CAT recommends using these projections in the planning of waterfront projects and selecting sea-level rise values for planning based on risk tolerance and adaptive capacity. This guidance has been largely adopted by State agencies including the San Francisco Bay Conservation and Development Commission (BCDC) in formulating their policies for adaptation to sea-level rise.

The City and County of San Francisco Sea Level Rise Committee for the San Francisco Capital Planning Committee recommends using the projections without the standard deviation and the upper (high) end of the ranges, stating that the low end of the ranges is likely overly optimistic given current global trends (see

Table 3.15-2) (SFSLRC, 2015). In addition to sea-level rise, consideration must be given to El Niño events, storm surge, storm waves, and wave runup along the shoreline. Table 3.15-2 summarizes factors in addition to sea-level rise that affect water levels in the Bay.

Table 3.15-2: Factors that Influence Local Water-Level Conditions in Addition to Sea-Level Rise

Factors Affecting Water Level	Typical Range, San Francisco Bay Shoreline	Period of Influence	Frequency
Tides	5–7 feet	Hours	Twice daily
Storm Surge	0.5 foot to 3 feet	Days	Several times a year
Storm Waves	1–4 feet	Hours	Several times a year
El Niño (within the El Niño–Southern Oscillation cycle)	0.5 foot to 3 feet	Months to years	Every 2–7 years

Source: SFSLRC, 2015

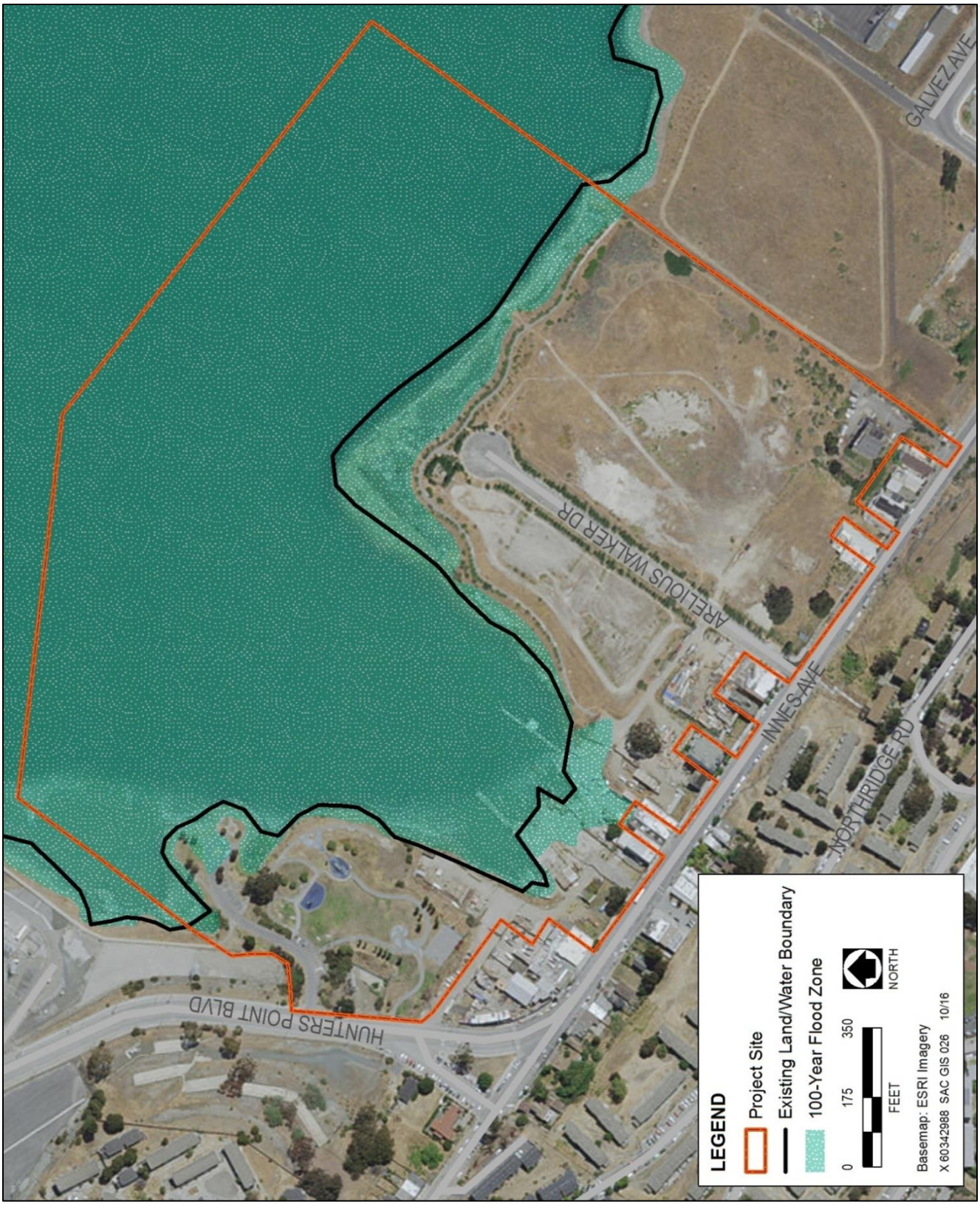
In March 2016, the City released the *San Francisco Sea Level Rise Action Plan* (Action Plan). The Action Plan is based on the latest climate science presented in the *Guidance for Incorporating Sea Level Rise into Capital Planning in San Francisco* (SFSLRC, 2015), which provides a foundation for a citywide sea-level rise adaptation plan. The Action Plan notes that, by the year 2100, sea level for San Francisco could rise by 66 inches (the unlikely but possible upper-range scenario). Coastal hazards that increase with sea-level rise include temporary coastal flooding, urban flooding, shoreline erosion, regular King Tide flooding, daily tidal inundation, and the frequency and intensity of coastal storms (San Francisco, 2016). The Action Plan maps show the coastal edges of the project site as lying within the sea-level rise vulnerability zone through 2100, which accounts for 66 inches of permanent sea-level rise with temporary flooding from the 100-year extreme tide, consistent with FEMA's 2015 preliminary FIRM (San Francisco, 2016).

Project Site

100-Year Flood

The preliminary FIRM designates the coastal areas of the project site as within Zone AE (FEMA, 2015) (Figure 3.15-2). Zone AE indicates areas that have a 1-percent probability of flooding every year (also known as the "100-year floodplain"), and where predicted floodwater elevations above msl have been established. Under the NFIP, properties in Zone AE are considered to be at high risk of flooding. Table 3.15-3 presents the base flood elevations[4] along the project site coastline. The base flood elevations are 10 feet for the India Basin Shoreline Park and 900 Innes properties and 10–12 feet for the India Basin Open Space property, depending on the shoreline direction. The 700 Innes property is separated from the Bay and does not have a FEMA base flood elevation.

[4] The base flood elevation is the computed elevation to which floodwater is anticipated to rise during the base flood. Base flood elevations are shown on Flood Insurance Rate Maps and on the flood profiles (FEMA, 2017).



Source: FEMA, 2015

Figure 3.15-2: 100-Year Flood Zone Overlapped with the Project Site

Table 3.15-3: Preliminary FEMA Base Flood Elevation, by Project Site Property and Shoreline Reach

Project Site Property	Shoreline Reach	Preliminary FEMA Base Flood Elevation (feet NAVD88)
India Basin Shoreline Park	All	10
900 Innes	All	10
India Basin Open Space	Northeast-facing shoreline	12
	Northwest-facing shoreline	10
700 Innes	None[1]	N/A

Notes:
FEMA = Federal Emergency Management Agency; N/A = not applicable; NAVD88 = North American Vertical Datum of 1988
[1] The 700 Innes property is landlocked, separated from San Francisco Bay by the India Basin Open Space property.
Sources: M&N, 2015; FEMA, 2015

Seiche

No historical seiche information is available for the project site.

Tsunami

The northern tip and northeast shoreline of the India Basin Shoreline Park property, almost the entire 900 Innes property, the shoreline edge of the India Basin Open Space property, and the southwestern edge of the 700 Innes property are mapped within the tsunami hazard zone (Figure 3.15-3). This is similar to the area mapped by FEMA in the preliminary FIRM as within the 100-year flood hazard zone (FEMA, 2015), except that more of the 900 Innes property is included in the tsunami inundation zone. The potential "worst-case" tsunami runup for the project area has been estimated at 3.77 feet (San Francisco, 2011).

Mudflow

The project site is relatively flat but is located downslope from more hilly areas to the west and south. The site is not located in an identified earthquake-induced landslide zone; however, isolated areas to the west and south are mapped within earthquake-induced landslide zones, as determined by the California Geological Survey (SFDEM, 2014).

Sea-Level Rise

The elevation of the project site is highest along Innes Avenue, at approximately 50 feet above msl, and lowest along the shoreline, at approximately 5 feet above msl. Therefore, sea level rise would inundate shoreline areas first and then inundate areas heading uphill west/southwest toward Innes Avenue.

Soils

San Francisco

Liquefaction hazard zones have been mapped in San Francisco and include much of the low-lying and historical marsh areas along the Bay. These zones are typically areas adjacent to the Bay on the eastern and northern sides of San Francisco where debris remaining after the 1906 San Francisco earthquake was added as fill.

Source: CalEMA, 2009

Figure 3.15-3: Tsunami Inundation Zone Overlapped with the Project Site

Project Site

The project site is located primarily on fill, and thus is in an identified liquefaction zone, except for the southeastern corner of the 700 Innes property (SFPUC, 2013; SFDEM, 2014). The northeastern edge of the 900 Innes property, the India Basin Open Space property, and the northwest portion of the 700 Innes property are classified as having Type A soils. The remainder of the project site, including all of the India Basin Shoreline Park property, is mapped as having Type D soils, with limited infiltration potential (SFPUC, 2013).

Soil and groundwater throughout the project site have been affected by historic and current activities, resulting in the presence of contamination. See Section 3.16, "Hazards and Hazardous Materials," for a full description of existing on-site hazardous materials and contamination.

Surface Water Quality

San Francisco Bay

The Bay is on the U.S. Environmental Protection Agency (EPA) 303(d) list of impaired waters for a variety of reasons including the presence of metals, chemicals, exotic species, nutrients, and pathogens. The decline in water quality has led to the decline of many Bay species and resulted in fish and duck consumption advisories (SFPUC, 2010).

Project Site

Past and current land uses affect the quality of surface water at the project site. Surface water pollution is expected to contain typical constituents of urban areas such as oil, grease, petroleum, metals (nickel, lead, and copper), dirt, bacteria, coliforms, solvents, trash, and other chemicals. In addition, the project site's industrial history, the placement of fill materials at the site, and recent construction storage activities have resulted in soil contamination, which could be mobilized by wind and rain and negatively affect stormwater quality.

The project site discharges to the central Bay, which is listed as an impaired water for the following pollutants: chlordane, dichlorodiphenyltrichloroethane (better known as DDT), dieldrin, dioxin compounds, furans compounds, invasive species, mercury, mercury (sediment), polycyclic aromatic hydrocarbons, polychlorinated biphenyls (PCBs), and selenium (EPA, 2011).

Existing beneficial uses for India Basin listed in the *Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin* (Basin Plan) include commercial and sport fishing (COMM), estuarine habitat (EST), wildlife habitat (WILD), water contact recreation (REC1), noncontact water recreation (REC2), and navigation (NAV).

3.15.2 Regulatory Framework

Federal

Clean Water Act

The Clean Water Act (CWA) (Title 33, Section 1251 et seq. of the U.S. Code [33 USC 1251 et seq.]) is the major federal legislation governing the water quality aspects of construction and operation of the proposed project or variant. The CWA established the basic structure for regulating discharges of pollutants into waters of the United States (not including groundwater) and waters of the State of California. The objective of the act is "to restore and maintain the chemical, physical, and biological integrity of the nation's waters." The CWA establishes the basic structure for regulating the discharge of pollutants into waters of the United States.

The CWA authorizes EPA to implement pollution control programs. Under the CWA, it is unlawful for any person to discharge any pollutant from a point source into navigable waters, unless an NPDES permit is obtained. In addition, the CWA requires each state to adopt water quality standards for receiving water bodies and to have those standards approved by EPA. Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing), along with water quality objectives necessary to support those uses.

Responsibility for protecting water quality in California resides with the State Water Resources Control Board (SWRCB) and nine RWQCBs. The SWRCB establishes statewide policies and regulations for the implementation of water quality control programs mandated by federal and State water quality statutes and regulations. The RWQCBs develop and implement water quality control plans (basin plans) that consider regional beneficial uses, water quality characteristics, and water quality problems. Water quality standards applicable to the project are listed in the San Francisco Bay RWQCB's Basin Plan.

Section 303—Water Quality Standards and Total Maximum Daily Loads

Section 303(c)(2)(b) of the CWA requires states to adopt water quality standards for all surface waters of the United States based on the water body's designated beneficial use. Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric, although narrative criteria based on biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numerical standards.

CWA Section 303(d) requires states and authorized Native American tribes to develop a list of water quality–impaired segments of waterways. The list includes waters that do not meet water quality standards necessary to support a waterway's beneficial uses even after the minimum required levels of pollution control technology have been installed. Listed water bodies are to be priority ranked for development of a total maximum daily load (TMDL). A TMDL is a calculation of the total maximum daily load (amount) of a pollutant that a water body can receive on a daily basis and still safely meet water quality standards. The TMDLs include waste load allocations for urban stormwater runoff as well as municipal and industrial wastewater discharges, with allocations apportioned for individual MS4s and wastewater treatment plants, including those in San Francisco. For stormwater, load reductions would be required to meet the TMDL waste load allocations within the 20 years required by the TMDLs.

The SWRCB, RWQCBs, and EPA are responsible for establishing TMDL waste load allocations and incorporating approved TMDLs into water quality control plans, NPDES permits, and waste discharge requirements (WDRs) in accordance with a specified schedule for completion. The San Francisco Bay RWQCB develops TMDLs for the Bay Area.

Section 401—Water Quality Certification

Section 401 of the CWA requires compliance with state water quality standards for actions within state waters. Under CWA Section 401, an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the United States) must first obtain a certificate from the appropriate agency stating that the fill is consistent with the state's water quality standards and criteria. In California, the SWRCB delegates authority to either grant water quality certification or waive the requirements to the nine RWQCBs. The San Francisco Bay RWQCB is responsible for the project site.

Section 402—NPDES Permits

The RWQCBs administer the NPDES stormwater permitting program, under Section 402(d) of the federal CWA, on behalf of EPA. The objective of the NPDES program is to control and reduce levels of pollutants in water bodies from discharges of municipal and industrial wastewater and stormwater runoff. CWA Section 402(d) establishes a framework for regulating nonpoint-source stormwater discharges (33 USC 1251). Under the CWA, discharges of pollutants to receiving water are prohibited unless the discharge complies with an NPDES permit. The NPDES permit specifies discharge prohibitions, effluent limitations, and other provisions, such as monitoring deemed necessary to protect water quality based on criteria specified in the National Toxics Rule (NTR), the California Toxics Rule (CTR), and the basin plan.

Discharge prohibitions and limitations in an NPDES permit for wastewater treatment plants are designed to maintain public health and safety, protect receiving-water resources, and safeguard the water's designated beneficial uses. Discharge limitations typically define allowable effluent quantities for flow, biochemical oxygen demand, total suspended matter, residual chlorine, settleable matter, total coliform, oil and grease, pH, and toxic pollutants. Limitations also typically encompass narrative requirements regarding mineralization and toxicity to aquatic life. Under the NPDES permits issued to the City to operate the treatment plants, the City is required to implement a pretreatment program. This program must comply with the regulations incorporated in the CWA and the General Pretreatment Regulations (Code of Federal Regulations [CFR] Title 40, Part 403 [40 CFR 403]). Regulations governing nondomestic discharges are contained in Article 4.1 of the City's Sewer Use Ordinance.

Section 404—Discharge of Dredged or Fill Materials

Section 404 of the CWA regulates temporary and permanent fill and disturbance of wetlands and waters of the United States. Under Section 404, the discharge (temporary or permanent) of dredged or fill material into waters of the United States, including wetlands, typically must be authorized by the U.S. Army Corps of Engineers (USACE) through either the Nationwide Permit (general categories of discharges with minimal effects) or the Individual Permit.

Rivers and Harbors Act Section 10

Section 10 of the Rivers and Harbors Act of 1899 requires that regulated activities conducted below the ordinary high-water elevation of navigable waters of the United States be approved and permitted by USACE. Regulated activities include the placement or removal of structures, work involving dredging, disposal of dredged material, filling, excavation, or any other disturbance of soils/sediments or modification of a navigable waterway. Navigable waters of the United States are those waters of the United States that are subject to the ebb and flow of the tide shoreward to the mean high-water mark and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce. Section 10 also regulates tributaries and backwater areas that are associated with navigable waters of the United States and are located below the ordinary high-water elevation of the adjacent navigable waterway.

A project proponent can apply for a permit/letter of permission for work regulated under Section 404 (CWA) and Section 10 (Rivers and Harbors Act) by completing and submitting one application form. An application for a Department of the Army permit will serve as an application for both Section 404 and Section 10 permits.

Federal Antidegradation Policy

The federal antidegradation policy is designed to protect existing water uses, water quality, and national water resources. The federal policy directs states to adopt a statewide policy that includes the following primary provisions:

- Existing instream uses and the water quality necessary to protect those uses shall be maintained and protected.
- Where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development.
- Where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

National Toxics Rule and California Toxics Rule

In 1992, EPA promulgated the NTR under the CWA to establish numeric criteria for priority toxic pollutants for 14 states to bring all states into compliance with the requirements of CWA Section 303(c)(2)(B). The NTR established water quality standards for 42 pollutants not covered under California's statewide water quality regulations at that time. As a result of the court-ordered revocation of California's statewide basin plans in September 1994, EPA initiated efforts to promulgate additional federal water quality standards for California. In May 2000, EPA issued the CTR, which includes all the priority pollutants for which EPA has issued numeric criteria not included in the NTR.

Executive Order 11988

Executive Order 11988, "Floodplain Management," directs all federal agencies to avoid, to the extent possible, long- and short-term adverse impacts of occupancy and modification of floodplains, and to avoid supporting development in a floodplain either directly or indirectly wherever there is a practicable alternative. Compliance

requirements are outlined in 23 CFR 650, Subpart A, "Location and Hydraulic Design of Encroachment on Floodplains."

If a proposed project involves significant encroachment into the floodplain, the final environmental document must include:

- the reasons why the proposed action must be located in the floodplain,
- alternatives considered and the reasons they were not practicable, and
- a statement indicating whether the action conforms to applicable state or local floodplain protection standards.

National Flood Insurance Program and Flood Disaster Protection Act

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 were enacted to reduce the need for flood protection structures and limit disaster relief costs by restricting development in floodplains. FEMA, established in 1979, is responsible for predicting hazards from flooding events and forecasting the level of inundation under various conditions. As part of its duty to develop standards for delineating fluvial and coastal floodplains, FEMA provides information on FIRMs about the potential for flood hazards and inundation, and where appropriate, designates regions as special flood hazard areas. Special flood hazard areas are defined as areas that have a 1 percent chance of flooding in a given year.

FEMA also administers the NFIP, a federal program that enables property owners in participating communities to purchase insurance as protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages. The City participates in the NFIP, and FEMA published a preliminary FIRM for the City and County of San Francisco on November 12, 2015. Once FEMA resolves any appeals, FEMA will notify the City that the base flood elevations shown on the FIRM are final. After FEMA makes this determination, the City has 6 months to adopt the new FIRM as part of the City's Floodplain Management Ordinance. Once the FIRM is published in final form, it will be used to rate structures for flood insurance, and the City must use it to implement the Floodplain Management Ordinance (Ordinance No. 188-08).

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act) is California's statutory authority for the protection of water quality. Under the Porter-Cologne Act, the State must adopt water quality policies, plans, and objectives that protect the State's waters for the use and enjoyment of the people. Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The RWQCBs are required to formulate and adopt basin plans for all areas in the region and establish water quality objectives in the plans. The Porter-Cologne Act sets forth the obligations of the SWRCB and RWQCBs to adopt and periodically update basin plans. The San Francisco Bay RWQCB is responsible for the project site.

Basin plans are the regional water quality control plans required by both the CWA and the Porter-Cologne Act that establish beneficial uses, water quality objectives, and implementation programs for each of the nine regions in California. The act also requires waste dischargers to notify the RWQCBs of their activities by filing reports of waste discharge and authorizes the SWRCB and RWQCBs to issue and enforce WDRs, NPDES permits, CWA

Section 401 water quality certifications, or other approvals. The RWQCBs are also authorized to issue waivers to reports of waste discharge and WDRs for broad categories of "low threat" discharge activities that have minimal potential to cause adverse water quality effects when implemented according to prescribed terms and conditions.

National Pollutant Discharge Elimination System

The NPDES permits all involve similar processes, which include submitting notices of intent for discharging to water in areas under the San Francisco Bay RWQCB's jurisdiction and implementing BMPs to minimize those discharges. The San Francisco Bay RWQCB may also issue site-specific WDRs, or waivers to WDRs, for certain waste discharges to land or waters of the State.

Construction Activity

The SWRCB's statewide stormwater general permit for construction activity (Order 2009-009-DWQ, as amended by Order Nos. 2010-0014-DWQ and 2012-0006-DWQ) applies to all construction activities that would disturb 1 acre of land or more. Construction activities subject to the general construction activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce nonstormwater discharges to storm sewer systems and other waters.

Through the NPDES and WDR processes, the SWRCB seeks to ensure that the conditions at a project site during and after construction do not cause or contribute to direct or indirect impacts on water quality (i.e., pollution and/or hydromodification) upstream and downstream. To comply with the requirements of the construction general permit, the project applicant must file a notice of intent with the SWRCB to obtain coverage under the permit; prepare a storm water pollution prevention plan (SWPPP); and implement inspection, monitoring, and reporting requirements appropriate to the project's risk level as specified in the SWPPP. The SWPPP includes a site map, describes construction activities and potential pollutants, and identifies BMPs that will be employed to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources, such as petroleum products, solvents, paints, and cement. The permit also requires the discharger to consider using postconstruction permanent BMPs that will remain in service to protect water quality throughout the life of the project. All NPDES permits also have inspection, monitoring, and reporting requirements.

Project sites served by the combined sewer system are not required to obtain coverage under the NPDES construction general permit. A portion of the project site is located in the separate storm sewer area of the City and would therefore require coverage under the NPDES construction general permit. It has been requested that as part of the proposed project and variant that the entire project site be located in the separate storm sewer area, thus requiring coverage under the NPDES construction general permit for the entire site.

Industrial General Stormwater Permit

The statewide stormwater NPDES permit for general industrial activity (Order 2014-0057-DWQ, superseding Order 97-03-DWQ) regulates discharges associated with 10 broad categories of industrial activities, such as operation of wastewater treatment works, and with recycling facilities. The industrial general permit requires the implementation of Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology to achieve performance standards. The permit also requires development of a SWPPP that identifies

the site-specific sources of pollutants and describes the measures at the facility applied to reduce stormwater pollution. A monitoring plan is also required.

Stormwater

In November 1990, EPA published regulations establishing NPDES permit requirements for municipal and industrial stormwater discharges. Phase I of the permitting program applied to municipal discharges of stormwater in urban areas where the population exceeded 100,000 persons. Phase II of the NPDES stormwater permit regulations, which became effective in March 2003, required that NPDES permits be issued for construction activity for projects disturbing 1–5 acres. Phase II of the municipal permit system (known as the NPDES General Permit for Small MS4s, Order No. 2003-0005-DWQ as amended by 2013-0001-DWQ) required small municipalities of fewer than 100,000 persons to develop stormwater management programs. This permit authorizes discharges of stormwater and some categories of nonstormwater that are not "significant contributors of pollutants." The MS4 permit covers only those portions of the City where stormwater flows are conveyed by SFPUC infrastructure separately from wastewater, which have been deemed by SFPUC to be separate storm sewer areas. This represents a relatively small area of the City, including the project site.

California Toxics Rule and State Implementation Policy

The CTR, presented in 2000 in response to requirements of EPA's NTR, establishes numeric water quality criteria for approximately 130 priority pollutant trace metals and organic compounds. The CTR criteria are regulatory criteria adopted for inland surface waters, enclosed bays, and estuaries in California that are on the CWA Section 303(c) list for contaminants. The CTR includes criteria for the protection of aquatic life and human health. Human health criteria (water- and organism-based) apply to all waters with a Municipal and Domestic Water Supply beneficial use designation as indicated in the basin plans. The *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, also known as the State Implementation Policy, was adopted by the SWRCB in 2000. It establishes provisions for translating CTR criteria, NTR criteria, and basin plan water quality objectives for toxic pollutants into:

- NPDES permit effluent limits,
- effluent compliance determinations,
- monitoring for 2,3,7,8-TCDD (dioxin) and its toxic equivalents,
- chronic (long-term) toxicity control provisions,
- site-specific water quality objectives, and
- granting of effluent compliance exceptions.

The goal of the State Implementation Plan is to establish a standardized approach for permitting discharges of toxic effluent to inland surface waters, enclosed bays, and estuaries throughout the state.

Executive Order S-13-08

Signed on November 14, 2008, Executive Order S-13-08 directed California to develop methods for adapting to climate change through preparation of a statewide plan. The executive order directed the Governor's Office of Planning and Research, in cooperation with the California Natural Resources Agency (CNRA), to provide

land use planning guidance related to sea-level rise and other climate change impacts. The order also directed the CNRA to develop a State climate adaptation strategy and convene an independent panel to complete the first California sea-level rise assessment report. The CNRA released the third climate change assessment in 2012, and is preparing a fourth assessment that will provide critical additional information supporting decisions that will safeguard the people, economy, and resources of California.

Regional

Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin

Water quality control plans, commonly known as basin plans, provide the basis for protecting water quality in California. Basin plans are mandated by both the federal CWA and the State Porter-Cologne Act. The Basin Plan was first adopted by the San Francisco Bay RWQCB and approved by the SWRCB in 1975. The current Basin Plan includes amendments adopted through March 2015. The goal of the Basin Plan is to provide a definitive program of actions designed to preserve and enhance water quality and protect "beneficial uses" of water in the Bay. State law defines beneficial uses as "domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (California Water Code, Section 13050[f]). The beneficial uses of any specifically identified water body generally apply to all tributary streams to that water body.

The Basin Plan contains specific narrative and numeric water quality objectives for several physical properties (e.g., temperature, dissolved oxygen, turbidity, suspended solids), biological constituents (e.g., coliform bacteria), and chemical constituents of concern, including inorganic parameters and trace metals and organic compounds. The entire program relies on the implementation of BMPs. BMPs are methods used on construction sites to limit the contact of pollutants (e.g., sediment and construction site debris) with stormwater runoff at its source; keep pollutants out of water conveyance systems and treatment plants; and remove pollutants before they are discharged into receiving waters (in this case, the Bay).

The stormwater discharge, wastewater management, drainage plan, and water quality control systems for the proposed project and variant would comply with, and generally be consistent with, the Basin Plan's water quality regulations.

Local

San Francisco General Plan

The *San Francisco General Plan* consists of 10 elements. The Environmental Protection Element is the most relevant to an assessment of the potential hydrologic impacts of implementing the proposed project or variant. The policies presented in this element aim to achieve a more sensitive balance by repairing damage already done, restoring some natural amenities, and bringing about productive harmony between people and their environment. In addition, the goals in the Environmental Protection Element of the *San Francisco General Plan* aim to provide harmony between natural and human-made resources so as to restore and maintain the natural features of the environment that are of such importance to rural areas of California.

San Francisco Floodplain Management

Chapter 2A, Sections 2A.280 through 2A.285, of the San Francisco Administrative Code describe San Francisco's floodplain management requirements. This code includes the following requirements for flood-prone areas:

- *Standards of Construction:*
  - The building must be adequately anchored to prevent flotation, collapse, or lateral movement.
  - The building must be constructed with materials and utility equipment that is resistant to flood damage, using methods and practices that minimize flood damage.
  - Electrical, heating, ventilation, plumbing, and air conditioning equipment must be designed or located to prevent water from entering or accumulating within the components during flood conditions.
- *Standards for Utilities:* All water supply and sanitary sewage systems must be designed to minimize or eliminate infiltration of floodwaters into the system as well as discharges from the systems into floodwaters.

Stormwater Management Ordinance

On May 22, 2010, the Stormwater Management Ordinance (Section 147 of Article 4.2 of the San Francisco Public Works Code) was enacted to improve San Francisco's environment by reducing stormwater runoff and runoff pollution in areas of new development and redevelopment through compliance with the Stormwater Design Guidelines. The Stormwater Design Guidelines have since been superseded by the *San Francisco Stormwater Management Requirements and Design Guidelines* (SMR) (March 2016).

SFPUC and the Port of San Francisco (SF Port) administer stormwater management programs developed in accordance with the federal CWA and a State of California NPDES permit. SFPUC's SMR details the engineering, planning, and regulatory framework for designing new infrastructure in a manner that reduces or eliminates pollutants commonly found in urban runoff. The guidelines apply to both small and large projects in the MS4 area of the City and to large projects in the combined sewer area. Small projects in the MS4 area are defined as those that create and/or replace 2,500–5,000 sq. ft. of impervious surface; large projects are development and redevelopment projects that create and/or replace 5,000 sq. ft. or more of impervious surface. Small projects must implement one or more site design measures, while large projects must implement source controls to meet the following performance requirements (SFPUC, 2016b):

- Projects within SFPUC's jurisdiction must manage the 90th-percentile, 24-hour storm.
- Projects within SF Port's jurisdiction must manage the 85th-percentile, 24-hour storm.

The SFPUC requirements are based on the stormwater requirements from Sustainable Sites Credit 6.2, "Stormwater Design: Quality Control," in Leadership in Energy and Environmental Design (LEED) Version 2.2 for New Construction and Major Renovation. The SF Port requirement is based on the 2013 NPDES Phase II MS4 Permit.

The SMR requires using preferred BMPs (infiltration-based BMPs, rainwater harvesting, and vegetated roofs, followed by lined bioretention/flow-through planters) to the maximum extent practicable before considering the

remaining BMPs and completing SFPUC's Separate Sewer Area BMP Selection Form. In cases with extreme constraints, SFPUC and SF Port may grant permission to use high-rate filtration devices such as media filters.

In addition, the SMR requires large projects to develop and submit a stormwater control plan. This plan must include a project narrative, BMP selection form, calculation summary, stormwater management plan, BMP inspection and maintenance schedules, source-control checklist, maintenance agreement (SFPUC jurisdiction only) or operations and maintenance verification documents (SF Port jurisdiction only), and supporting documentation. The stormwater control plan allows SFPUC and SF Port to review projects that are subject to the SMR and evaluate compliance. A preliminary stormwater control plan must be submitted at the design development phase of the project and must be approved by SFPUC or SF Port before the site or building permit will be issued.

San Francisco Public Works Code, Article 4.2

Article 4.2 of the San Francisco Public Works Code establishes requirements to "protect and enhance the water quality in the City and County of San Francisco's sewer system, stormwater collection system and receiving waters pursuant to, and consistent with federal and state laws, lawful standards and orders applicable to stormwater and urban runoff control, and the City's authority to manage and operate its drainage systems." Article 4.2 requires development projects to submit stormwater control plans that meet guidelines adopted by SFPUC. Projects disturbing 5,000 sq. ft. or more of ground surface are subject to the guidelines.

In November 2013, the Board of Supervisors approved and the Mayor signed the Construction Site Runoff Control Ordinance (Ordinance 260-13), which amended Article 4.2 of the Public Works Code to add pollution prevention controls for construction site runoff discharges into the sewer system citywide. Under the ordinance, any construction project that disturbs 5,000 sq. ft. or more of land must apply to SFPUC for a construction site runoff control permit before the start of work and submit an erosion and sediment control plan that sets forth BMPs intended to control erosion and sediment. The erosion and sediment control plan must include:

> …a vicinity map showing the location of the site in relationship to the surrounding area's water courses, water bodies, and other significant geographic features; a site survey; suitable contours for the existing and proposed topography, area drainage, proposed construction and sequencing, proposed drainage channels; proposed erosion and sediment controls; dewatering controls where applicable; soil stabilization measures where applicable; maintenance controls; sampling, monitoring, and reporting schedules; and any other information deemed necessary by the [SFPUC] General Manager.

The ordinance requires that permittees perform daily inspections and maintain and repair all graded surfaces and erosion and sediment controls, drainage structures, or other protective devices, plantings, and ground cover installed while construction is active. The ordinance also provides for enforcement of violations. Any project requiring a SWPPP under the construction general permit may submit the SWPPP in lieu of an erosion and sediment control plan to comply with the Construction Site Runoff Control Program at SFPUC.

San Francisco Health Code Article 12C (Nonpotable Water Ordinance)

The Onsite Water Reuse for Commercial, Multi-family, and Mixed Use Development Ordinance, commonly known as the Nonpotable Water Ordinance (adopted September 2012), allows for the collection, treatment, and use of alternate water sources (e.g., rainwater, stormwater, gray water, foundation drainage, black water) for nonpotable applications and for district-scale water systems to share nonpotable water. This ordinance added Article 12C to the San Francisco Health Code.

Article 12C was amended in July 2015 to mandate that beginning November 1, 2015, all new development projects of 250,000 sq. ft. or more of gross floor area located within the boundaries of San Francisco's designated recycled-water use areas, as defined by the Recycled Water Ordinance, must install on-site water systems to treat and reuse available alternate water sources for toilet and urinal flushing and irrigation. This requirement was to expand to the entire City the following year, on November 1, 2016. The project site is located in the Recycled-Water Use area.

San Francisco Construction Site Runoff Control Program

The San Francisco Construction Site Runoff Control Program requires stormwater quality BMPs at all construction sites of any size, regardless of whether the site drains to the combined or separate sewer system. For projects in the separate sewer area, construction activities disturbing 1 or more acres of soil must obtain coverage under the construction general permit. This includes development of a SWPPP describing the BMPs that will be implemented to prevent erosion and discharge of sediment and other pollutants in stormwater runoff. A SWPPP may be submitted to SFPUC in lieu of an erosion and sediment control plan to comply with the Construction Site Runoff Control Program.

Temporary Construction Dewatering

Under Article 4.1 of the San Francisco Public Works Code, the batch wastewater discharge permit issued by SFPUC regulates discharges to the combined sewer system from temporary dewatering of construction sites. Therefore, this permit must be obtained from SFPUC before the start of groundwater dewatering to the combined sewer system. SFPUC imposes specific permit terms and conditions to maintain its compliance with its own wastewater discharge permit issued by the San Francisco Bay RWQCB. Under the batch wastewater discharge permit, the discharge must meet specific numeric effluent limitations for toxic and conventional pollutants, and monitoring must be conducted to ensure compliance.

Groundwater Resources

If wells are to be used for groundwater dewatering during construction, the project would be required to comply with San Francisco's Soil Boring and Well Regulation Ordinance, adopted as Article 12B of the San Francisco Health Code. The use of a groundwater well may affect the beneficial uses of San Francisco's aquifers, and shall be reviewed and approved by the San Francisco Department of Public Health and the SFPUC.

NPDES Order No. R2-2013-0029

The City has an NPDES permit (RWQCB Order No. R2-2013-0029, NPDES No. CA37664), which was adopted by the San Francisco Bay RWQCB on August 14, 2013. The permit covers treated effluent discharges from the Southeast Treatment Plant, North Point Wet Weather Facility, and Bayside Wet-Weather Facilities, including CSDs to the Bay. The permit specifies a permitted flow of 85.4 mgd and includes discharge prohibitions, dry-weather effluent limitations, wet-weather effluent performance criteria, receiving-water limitations, sludge management practices, and monitoring and reporting requirements. Areas that drain to or contribute wastewater to the City's combined sewer system are subject to this permit.

3.15.3 Impacts and Mitigation Measures

Significance Thresholds

The thresholds for determining the significance of impacts in this analysis are consistent with the environmental checklist in Appendix G of the State CEQA Guidelines, which has been modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the proposed project or the variant would result in a significant impact related to Hydrology and Water Quality. Implementation of the proposed project or the variant would have a significant effect on Hydrology and Water Quality if the proposed project or variant would:

- violate any water quality standards or waste discharge requirements;
- substantially alter the existing drainage pattern of the project site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- otherwise substantially degrade water quality;
- place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow.

The Initial Study for this project (see Appendix A) found that the proposed project and variant would not result in significant adverse impacts related to several topics: the depletion of groundwater supplies or interference with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level; placement of housing within the 100-year flood hazard area; and flooding as a result of dam or levee failure. Therefore, these topics—including checklist items from State CEQA Guidelines Appendix G and City Environmental Review Guidelines Appendix B related to groundwater depletion or housing within a 100-year flood hazard area—are not discussed further in this section.

Approach to Analysis

The aforementioned significance thresholds were applied to determine impact significance using a qualitative approach. The following evaluation discusses whether the proposed project or variant would result in direct and indirect impacts on hydrology and water quality. The evaluation of potential project impacts on hydrology and water quality is based on the comparison of existing conditions to the project's built condition, such as changes in impervious area and facilities located within flood zones. Specifically, the impact evaluation focuses on effects on surface water quality, stormwater drainage, groundwater quality, and flooding. Water quality conditions are compared to water quality standards and WDRs by identifying potential contaminants and pollution pathways, amount of impervious area, and runoff treatment requirements.

As part of the analysis, inundation and flooding on the project site from a potential seiche, tsunami, or mudflow or from projected sea-level rise were assessed by reviewing potential tsunami and sea-level-rise inundation zone elevations relative to the final grade elevations of facilities and features for the proposed project and variant.

As discussed in Section 3.15.1, "Environmental Setting," portions of the project site are located within an existing 100-year flood hazard area and within a tsunami inundation zone. Under the significance thresholds, the Planning Department considers whether projects located in areas that are prone to flooding, under existing conditions or future conditions with projected sea-level rise, would expose people or structures to significant risks due to flooding. However, in *California Building Industry Association v. Bay Area Air Quality Management District* (December 17, 2015, Case No. S213478), decided in 2015, the California Supreme Court held that CEQA does not *generally* require lead agencies to consider how existing hazards or conditions might affect a project's users or residents, except where the project would exacerbate an existing environmental hazard.[5]

Accordingly, hazards resulting from a project that places development in an existing or future flood hazard area are not considered impacts under CEQA unless the project would exacerbate the flood hazard. Thus, the analysis below evaluates whether the proposed project or variant would exacerbate existing or future flood hazards in the project area, resulting in a substantial risk of loss, injury or death. The impact would be considered significant if the proposed project or variant were to exacerbate future flood hazards by increasing the frequency or severity of flooding or cause flooding to occur in an area that would not be subject to flooding without the project.

Project Features

Both the proposed project and variant would involve demolishing some of the existing buildings on the project site and constructing a mixed-use development that would include residential, commercial, institutional/educational, research and development, parking, and open space uses. Implementation of the proposed project or variant would increase the amount of impervious area at the project site.

[5] *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369.

Impact Evaluation

Impact HY-1: The proposed project or variant would violate water quality standards or waste discharge requirements. ***(Less than Significant with Mitigation)***

The following impact discussion describes the impacts of project construction and operation related to the potential to violate water quality standards or WDRs. Separate impact analyses are provided for construction-related and operational impacts. General impacts that would affect all four project site properties are discussed first, followed by specific discussions of construction-related or operational impacts that would occur at each property. Except where noted, the respective impacts described below would occur under either the proposed project or the variant.

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Land-Based Construction

Many construction-related wastes have the potential to degrade water quality and beneficial uses by altering the water's dissolved oxygen content, temperature, pH, suspended-sediment and turbidity levels, or nutrient content, or by causing toxic effects in the aquatic environment. Construction under either the proposed project or the variant would include substantial earth-disturbing activities (cut and fill, vegetation removal, grading, trenching, movement of soil, and remediation activities) that could expose disturbed areas and stockpiled soils to winter rainfall, stormwater runoff, and wind. Some of these construction activities would occur in soils that have a low erosion hazard because of the project site's relatively flat topography and the high soil clay content of some soils. Nevertheless, areas of exposed or stockpiled soils, some of which may have existing contamination, could be subject to wind or water erosion, allowing temporary discharges of sediment directly into the Bay. Accidental spills of construction-related contaminants (e.g., fuels, oils, paints, solvents, cleaners, and concrete) or nonstormwater discharges could also occur, resulting in releases to nearby surface water and degrading water quality. If not managed properly, water used for dust suppression during construction could also enter the Bay.

Hazardous materials remediation actions for all four project site properties (see Mitigation Measure M-HZ-1 in Section 3.16, "Hazards and Hazardous Materials") would be carried out consistent with site remediation plans approved by the San Francisco Department of Public Health and the San Francisco Bay RWQCB in accordance with requirements of the San Francisco Public Health Code and the California Water Code. Environmental quality criteria would be established for soil, sediment, and groundwater that would remain at the properties and a set of remedial goals would be developed and approved by the San Francisco Bay RWQCB.[6] The site remediation plans would specify procedures governing stormwater runoff controls.

Because the proposed project or variant would disturb more than 1 acre of land and the project site is located in the separate storm sewer area of San Francisco, the project would require coverage by and compliance with the requirements of the NPDES construction general permit, including preparation and implementation of a SWPPP. Remediation actions would also be considered an activity subject to the construction general permit. These

[6] Remedial action goals have been developed for the 900 Innes property but have not been reviewed or approved by the San Francisco Bay RWQCB.

actions would be included in the SWPPP, or an as amendment to the SWPPP if the remediation plans are not finalized until after the SWPPP is completed.

Through the NPDES and WDR processes, the SWRCB seeks to ensure that the conditions at a project site during and after construction do not cause or contribute to direct or indirect impacts on water quality. The construction general permit specifies minimum BMPs to be implemented to ensure that stormwater discharges and authorized nonstormwater discharges do not contain pollutants that could cause or contribute to an exceedance of any applicable water quality objective or water quality standard in the receiving water (the Bay). The applicable standards are those contained in the NTR, the CTR, and the San Francisco Bay RWQCB's Basin Plan. A SWPPP must identify the BMPs that would be employed to prevent soil erosion and discharge of other construction-related pollutants, such as petroleum products, solvents, paints, and cement, that could contaminate nearby water resources. BMPs may include but are not limited to the following measures:

- Implementing temporary erosion and sediment control measures in disturbed areas to minimize discharge of sediment into nearby drainage conveyances, in compliance with State and local standards in effect at the time of construction. Among these measures are silt fences, staked straw bales or wattles, sediment/silt basins and traps, geofabric, sandbag dikes, and temporary vegetation.
- Establishing permanent vegetative cover to reduce erosion in areas disturbed by construction by slowing runoff velocities, trapping sediment, and enhancing filtration and transpiration.
- Using drainage swales, ditches, and earth dikes to control erosion and runoff by conveying surface runoff down sloping land and intercepting and diverting runoff to the Bay.

All NPDES permits also have inspection, monitoring, and reporting requirements to ensure that BMPs are implemented according to the SWPPP and are effective at controlling discharges of stormwater-related pollutants. Source controls, treatment controls, and site planning measures are typical types of BMPs. The SWPPP must be prepared by a Qualified SWPPP Developer and would be submitted to the San Francisco Bay RWQCB before the start of construction.

To comply with San Francisco's Construction Site Runoff Control Ordinance, any construction project that would disturb more than 5,000 sq. ft. of land must apply to SFPUC for a construction site runoff control permit before starting work. The project also must prepare and implement an erosion and sediment control plan, or SWPPP, describing associated BMPs to prevent erosion and discharge of sediment and other pollutants in stormwater runoff. Permittees must perform daily inspections and maintain and repair all graded surfaces and erosion and sediment controls, drainage structures, or other protective devices, plantings, and ground cover installed while construction is active. Equipment maintenance, spill containment, and establishment of designated fueling areas as part of the erosion and sediment control plan or SWPPP would protect water quality from potential spills.

Groundwater Dewatering

Groundwater generated during construction dewatering (currently expected only at the 700 Innes property) could contain contaminants related to past site activities, as well as sediment and suspended solids. Accidental spills or discharges could violate water quality standards or WDRs, or could otherwise substantially degrade water quality.

Any contaminated water generated during construction would be discharged to the combined sewer system after appropriate treatment if necessary. Discharges from dewatering activities that are released to the combined sewer

system must comply with the requirements of SFPUC's batch wastewater discharge permit, which regulates influent concentrations for various constituents. A batch wastewater discharge permit must be obtained from SFPUC before the beginning of groundwater dewatering and discharge to the combined sewer system. SFPUC imposes specific permit terms and conditions to maintain compliance with its own wastewater discharge permit issued by the San Francisco Bay RWQCB. Under the batch wastewater discharge permit, the discharge must meet specific numeric effluent limitations for toxic and conventional pollutants, and monitoring is required to ensure compliance. The groundwater could contain contaminants from past site activities, as well as sediment and suspended solids; however, the construction contractors would be required to treat the groundwater as necessary to meet permit requirements before discharging to the combined sewer system. The discharge rates would be controlled so that the capacity of the sewer system would not be exceeded. Permit conditions would depend on the quality of the water discharged and the anticipated discharge rates. In addition, if a well is used for groundwater dewatering, the project would be required to comply with San Francisco's Soil Boring and Well Regulation Ordinance, whereby the use of a groundwater well would be reviewed and approved by the San Francisco Department of Public Health and the SFPUC.

In-Water Construction

In-water activities to construct piers, docks, and coastal fortifications/restorations may adversely affect water quality by mobilizing sediment potentially containing chemicals from historic activities. Sediment disturbance during in-water work may also temporarily increase local turbidity or resuspend historic contaminants. If in-water work is necessary, a cofferdam structure would be installed to dewater the work area (Knecht, pers. comm., 2016). The removal of existing creosote piles from the Bay, if not handled and implemented properly, also could resuspend contaminated sediment. The act of pulling or cutting piles would be expected to suspend sediments in the water column for a few minutes to a few hours; however, despite these temporary water quality impacts, removing these piles would result in a long-term improvement in water quality.

In addition, using construction equipment for in-water work activities such as installation of piers or floating docks would involve using diesel-fueled equipment and could require the use of hazardous materials such as oils and lubricants. If released to the Bay, these materials would degrade water quality.

India Basin Shoreline Park Property

Recreational facilities and shore access would be constructed at the India Basin Shoreline Park property. Those efforts may involve vegetation removal, grading, trenching, and soil movement that could result in erosion and sedimentation of receiving waters. The use of construction equipment and construction-related contaminants (e.g., fuels, oils, paints, solvents, cleaners, and concrete), if not managed properly, could also cause contaminants to enter and degrade receiving waters.

In-water work would also be required at this property, to construct an approximately 12-foot-wide by 480 foot long pier on piles, and a 50-foot-wide by 100-foot-wide floating dock. Pile driving and demolition and construction over water would be required, which could result in accidental spills of fuels, chemicals, or hazardous materials; mobilize Bay sediment, thus resulting in an increase in turbidity; or otherwise degrade the Bay's water quality. A barge may also be required for construction of portions of the pier offshore in deeper waters.

Construction at the India Basin Shoreline Park property would also involve replacing riprap edging along the coast with tidal wetlands. These construction activities would have the potential to discharge sediment or construction debris, or to result in the accidental spill of construction-related oil, fuel, or lubricants into the Bay.

Implementing the construction general permit and related SWPPP would ensure that nonstormwater BMPs would be in place to prevent water quality degradation caused by accidental spills of fuels or hazardous materials, or by construction material or debris entering the Bay, as a result of in-water construction work. However, in-water construction activities could cause increased turbidity and resuspension of sediment. For this reason and the reasons described above, under either the proposed project or the variant, the construction impact at the India Basin Shoreline Park property related to a violation of water quality standards or WDRs could be significant.

900 Innes Property

Development at the 900 Innes property would occur over several years. Construction could begin as early as 2018 and is conservatively anticipated to take 1 year; however, the timing would be dependent on approval and funding considerations. The maximum possible cut and off-haul from the site over the entire construction period is anticipated to be up to approximately 9,000 cubic yards. Construction staging would also occur on the project site. Before the start of any demolition, grading, or construction activities, the construction area would be clearly defined by construction fencing and staking. However, vegetation removal, grading, trenching, and soil movement could result in erosion and sedimentation. The potential also exists for accidental spills of construction-related contaminants that, if not managed properly, could also enter and degrade receiving waters.

Hazardous building materials such as lead-based paint, asbestos, or PCB-containing materials could be encountered during restoration and relocation of the historic Shipwright's Cottage. If improperly handled during restoration, these materials could degrade water quality.

Construction at the 900 Innes property would also require in-water work to replace two piers and potentially enhance an eroded marine byway. The piers are anticipated to be constructed on piles, and thus, would require pile driving and construction over water. This could cause a temporary increase in localized turbidity or accidental spills (e.g., diesel fuel, oils, lubricants), or could otherwise degrade water quality in the Bay. In addition, hazardous building materials such as lead-based paint could be encountered during demolition of the two existing piers. The historic pilings themselves typically consist of wood that has been treated with creosote, which is toxic to marine organisms. Under the proposed project or variant, creosote-treated piles would be removed to the extent feasible. New piles would consist of nontoxic materials. Sediments could be resuspended during pile removal, and using construction equipment in the water for pile removal and pier/dock construction could result in an accidental spill of hazardous materials. Therefore, under either the proposed project or the variant, the construction impact at the 900 Innes property related to a violation of water quality standards or WDRs could be significant.

Land-based dredging is proposed for the 900 Innes site as part of site remediation. Dredging activities would disturb mud and sediment, causing turbidity and resuspension of sediment that could locally degrade the water quality of the Bay and could result in a significant impact. Oxygen levels resulting from in-water construction activities would not be expected to remain low for long periods. In addition, tidal flushing would introduce oxygenated water to the dredged area. Therefore, resuspension of sediments would be temporary and would not result in long-term effects (BCDC, 1998). Based on studies conducted by the San Francisco Estuary Institute,

there is no risk to the ecosystem from increased nutrient loading caused by dredging activities, and sediment disruption caused by dredging activities does not pose an environmental risk related to decreased concentrations of dissolved oxygen (SFEI, 2008).

RPD would be required to obtain CWA Section 401 and 404 permits for dredging activities. Disposal of dredged material would be subject to the requirements of the permits and must be conducted in accordance with WDRs issued to the designated disposal site. As part of the permitting process for the dredging activity, RPD would have to submit a Consolidated Dredging-Dredged Material Reuse/Disposal Application to the USACE Dredged Material Management Office. This application is accepted for a CWA Section 404 permit from USACE, an administrative dredging permit from BCDC, and a dredging project lease from the California State Lands Commission, and is functionally equivalent to San Francisco Bay RWQCB water quality certification or WDR authorization. As part of the application, RPD would have to develop a sampling and analysis plan and submit appropriate testing data to help the USACE Dredged Material Management Office determine the suitable disposal method for dredged material.

India Basin Open Space Property

Construction at the India Basin Open Space Property would primarily involve restoring habitat and improving public access. An existing drainage outfall extending into the Bay would also be removed. Restoration activities would involve vegetation removal, grading, and soil movement, which could result in erosion and sedimentation. Construction of recreation facilities and habitat improvements at the India Basin Open Space property would occur during Phase 1 of construction at the India Basin Open Space and 700 Innes properties. Construction could begin as early as 2018 and is anticipated to take between 2 and 4 years; however, the timing would be dependent on approval and funding considerations. Construction staging would occur at the 700 Innes property.

700 Innes Property

Proposed Project

Project construction would be the most intense at the 700 Innes property. At this property, the proposed project would involve constructing 1,240 dwelling units and 275,330 gross square feet (gsf) of retail, commercial, or flex space, as well as a 50,000-gsf school, parking, and publicly accessible open space. Constructing these developments over several phases would involve removing vegetation, grading, trenching, and moving soil over numerous acres, all of which could result in erosion and sedimentation.

The maximum possible cut and off-haul from both the India Basin Open Space property and the 700 Innes property over construction phases 1–7 is anticipated to be up to 340,000 cubic yards. Before the start of any demolition, grading, or construction activities, the construction area would be clearly defined by construction fencing and staking. Construction staging would occur on the 700 Innes property. The use of construction equipment and the presence of construction-related contaminants, if not managed properly, could result in accidental spills, which could degrade receiving waters. Accidental spills of nonstormwater discharges from activities such as construction dewatering could also occur during construction, resulting in releases to nearby surface water and degrading water quality.

Currently, the 700 Innes property is the only project site property where construction dewatering of groundwater is expected, because of the basements of the buildings proposed for the site. The groundwater level at the 700 Innes site is anticipated to be at an elevation of -5 feet (San Francisco City Datum). Most of the proposed basement excavations would not extend below this groundwater level. However, local dewatering may be required if perched groundwater is encountered during basement excavations.

The basement excavation for the structure proposed for the northwest corner of the 700 Innes site would extend below -5 feet in elevation. At this building, the groundwater level would need to be lowered (via dewatering) to a depth of at least 3 feet below the bottom of the planned excavation and maintained at that level until sufficient weight and/or tiedown capacity is available to resist the hydrostatic uplift forces on the bottom of the foundations and slabs. Where shallow bedrock is present beneath the proposed structure, a passive dewatering system of sumps and collection trenches may be required. Where fill is present, dewatering wells may also be required.

Groundwater generated during construction dewatering could contain contaminants related to past site activities, as well as sediment and suspended solids. Accidental spills or discharges could violate water quality standards or WDRs, or could otherwise substantially degrade water quality. Any contaminated water generated during construction dewatering would be discharged to the combined sewer system after appropriate treatment if necessary. Discharges from dewatering activities that are released to the combined sewer system must comply with the requirements of SFPUC's batch wastewater discharge permit, which regulates influent concentrations for various constituents.

Construction at the 700 Innes property under the proposed project would also involve demolishing five existing buildings and structures. Hazardous building materials such as lead-based paint, asbestos, or PCB-containing materials could be encountered during demolition. If improperly handled during removal, these materials could degrade water quality. In addition, at the northwest corner of the property, BUILD would remove an existing pier and eight associated creosote-treated piles, which could cause sediments to be resuspended, and the potential would exist for an accidental release of hazardous materials from in-water construction activities and equipment.

Construction at the 700 Innes property would also include removing an existing pier and associated piles. In-water construction for removal of an existing pier and piles could cause sediments to be resuspended, and the potential would exist for an accidental release of hazardous materials from in-water construction activities and equipment. Therefore, the construction impact of the proposed project at the 700 Innes property related to a violation of water quality standards or WDRs could be significant.

Variant

Implementing the variant at the 700 Innes property would involve constructing up to 1,000,000 gsf of commercial/institutional uses and 500 dwelling units, fewer dwelling units but a larger amount of commercial and institutional uses than under the proposed project. Although land uses would be distributed differently under the variant, the potential construction-related water quality impacts would be similar to those described for the proposed project.

Like the proposed project, the variant would involve substantial earth-disturbing construction activities (cut and fill, vegetation removal, grading, trenching, soil movement) that could result in erosion and sedimentation of receiving waters. Accidental spills of construction-related contaminants or nonstormwater discharges from

activities such as construction dewatering could also occur during construction, resulting in releases to nearby surface water and degrading water quality. Removing an existing pier and eight associated creosote-treated piles could cause sediments to be resuspended, and the potential would exist for an accidental release of hazardous materials from in-water construction activities and equipment. Therefore, the construction impact of the variant at the 700 Innes property related to a violation of water quality standards or WDRs could be significant.

Overall Construction Impact Conclusion

In-water construction activities, including pile removal and pier/dock construction, could cause increased turbidity and resuspension of sediment. In addition, using construction equipment in the water could result in an accidental spill of hazardous materials. Therefore, in-water construction activities could result in a significant impact. The following mitigation measures would be implemented to ensure that water quality would be protected during in-water construction. Additionally, the proposed project or variant would be required to implement BMPs in accordance with the CWA Section 401 and 404 permits required for the project.

Mitigation Measure M-HY-1a: Monitor Turbidity during Construction

The project sponsors shall require their construction contractor to monitor turbidity associated with construction of the pier and floating dock and removal of piles and old piers. The contractor shall prepare a turbidity monitoring plan, including product information on monitoring equipment, proposed monitoring locations, and procedures to follow if turbidity increases above background levels. The turbidity monitoring plan shall include the following provisions:

(1) Before beginning work, the contractor shall monitor turbidity and light levels at the level of the eelgrass, or other as deemed appropriate by the resource agencies if no eelgrass is present, to establish a baseline. The contractor shall also set buoys out to establish background water quality monitoring points upstream and downstream of the site (based on existing currents and tides at the site). The contractor shall monitor turbidity and light at low, middle, and high tides during typical work hours for several days before beginning work. The project sponsor's contract owner's representative will review and approve the background monitoring station locations before monitoring.

(2) During removal of the piles, the contractor shall monitor turbidity and light levels no less than daily or as required by the project's or variant's 401 water quality certification issued by the San Francisco Bay RWQCB or other applicable permits, at the same locations as required for baseline monitoring, as well as within the work area.

(3) The contractor shall notify the lead inspector or other on-site individual overseeing the contractor immediately when there is an exceedance of the required water quality criteria (turbidity and light levels) that have been established either in the 401 water quality certification or with the San Francisco Bay RWQCB. If the lead inspector or other identified individual determines, in coordination with the environmental compliance manager, that water quality criteria have been exceeded, demolition activities must cease until turbidity is reduced to meet the criteria. In the event an exceedance occurs, a silt curtain or floating debris booms may be deployed to contain suspended materials and prevent their broader dispersal. The deployment of these additional measures shall be

contingent on whether conditions (e.g., water depth, substrate materials, wave action) are appropriate, as determined by the lead inspector.

The San Francisco Bay RWQCB adapted guidance from creosote-removal projects in Puget Sound and elsewhere as part of the permitting for construction related to America's Cup events, which is now a part of San Francisco Bay RWQCB guidance and direction for creosote piling removal projects in the Bay. The designs and specifications for this project, enforced by contractual provisions, call on the construction contractor to attempt to remove the pilings using methods that would depend on the level of contamination of the surrounding sediments or muds and on the conditions of the piles. These methods and related pile removal BMPs are included in Mitigation Measure M-HY-1b below to reduce and/or prevent water quality impacts from pile removal activities.

Mitigation Measure M-HY-1b: Implement Pile Removal Best Management Practices

One of the following two separate procedures shall be utilized to remove piles based on information regarding local sediment conditions:

- *If there is reason to believe that the sediment is contaminated beyond the typical ambient levels of various in-Bay pollutants other than creosote, which is inferred to be present, the construction contractor shall cut the piling at the mudline.*
- *If there is no reason to believe the sediment is contaminated beyond typical ambient levels, the contractor shall attempt to remove each piling in its entirety by pulling the piling straight out.*

The decision regarding the method of removal also depends on the condition of the piling. Generally, the construction contractor shall be prohibited from using vibration or a back-and-forth, rocking movement intended to snap the piling because this generally increases turbidity. Moreover:

- *If, before the contractor attempts to remove an entire piling, visual inspection of the pilings indicates that the pilings lack the necessary integrity to be pulled without splintering, crumbling, or otherwise disintegrating, the contractor shall instead cut the remaining pile to a level 2–3 feet below the surrounding existing sediment or mudline.*
- *If, during attempts to use direct pulls on the piling to remove it, the piling breaks at a level higher than 2 feet below the mudline, the contractor shall cut the remaining pile to a level 2–3 feet below the surrounding existing sediment or mudline.*

Because the condition of the piles' structural integrity is not fully nor precisely known, RPD or, for the 700 Innes property, BUILD shall investigate pile integrity after submitting the various permitting documents to the regulatory agencies. A brief memorandum on that investigation (referred to below as the "removal memo") shall be delivered to the agencies to inform them of the pile conditions and the expectation of whether pilings can be removed by pulling without crumbling.

The following practices shall be followed during pile removal efforts:

- *Pilings and other debris may be removed from land or require removal from the water using barge-mounted equipment. For non-land-based removal of piles, the following measures shall be implemented to the extent feasible:*

  - *Removal of the pilings and other debris shall be carried out using an excavator mounted on a shallow-draft barge equipped with both grappling and shearing attachments. Shallow-draft barges generally require at least 5 feet of water above the sea floor or any submerged debris. Depending on specific site conditions and the construction barge chosen, it may be possible to float the barge into position at high tides, let it settle on the intertidal mudflats to continue working at low tides, and then be lifted by the next high tide.*

  - *Existing eelgrass or oyster beds shall be avoided.*

  - *The barge shall be designed to prohibit sediment or debris from falling back into the water. The work surface on the barge deck shall include a containment basin for piles, concrete, and any mud or sediment removed during pulling. Upon removal from substrate, the piles shall be moved expeditiously from the water into the containment basin.*

  - *When depths limit access to barges or sensitive resources are present, piles may be manually cut by divers using a pneumatic or hydraulic saw or shears.*

  - *Once the piles are cut, they may be towed out to deeper water to a waiting barge or to a landside staging area for loading and removal.*

- *The holes left after pile removal shall not be actively filled. Attempting to fill the holes would lead to increased sediment disturbance and unnecessary increases in turbidity. It is expected that sediment deposition will rapidly fill in any holes that are left.*
- *The removed piles, as well as any decking or other materials, shall be loaded onto a barge and/or transported back to the contractor's staging area where the concrete shall be separated from the other materials and recycled or disposed of off-site as appropriate at a permitted facility.*
- *Once the removed debris is on land, the pilings and planks shall be cut to 5-foot lengths and dried out before being hauled to a landfill for disposal.*
- *The removed piles shall be placed into containment basins that will collect the water, residual creosote, and other materials that may drain off of them. The collected water will eventually evaporate, and the residual creosote and other materials shall be placed into barrels for disposal at an appropriate Class 2 landfill.*
- *The removal method(s) utilized for each site shall be described in the removal memo.*
- *Jetting away the sediments around the piles is prohibited. Where the method selected is expected to generate concrete chips or dust in the water, a special curtain shall be deployed around the individual pile so the contractor may capture any concrete pieces for off-site disposal.*
- *Intentional breaking of timber piles above the mudline is prohibited.*
- *The piles shall not be shaken, hosed off, stripped or scraped off, or left hanging to drip, nor shall any other action be taken with the intent of cleaning or removing adhering material from the pile.*
- *Any sediment accumulated from the pile removal operations shall be assumed to contain creosote and shall be contained and eventually tested and disposed off-site in an appropriate landfill.*
- *Upon completion of demolition and removal of the pilings (and any associated wharfing or decking), the contractor shall perform a postdemolition diver survey in the project area. The survey shall*

document the quantity and type of pilings stubs above the mudline and the condition of the Bay floor, and shall identify the quantities and types of debris from previous operations and/or from the demolition activities that remain on the Bay floor.

- *The contractor shall submit the results of the survey to RPD or, for the 700 Innes property, to BUILD for approval, with descriptions of its approach to removal of the piling stubs and debris. RPD (or BUILD) may elect to leave some debris in place if it has established eelgrass growing on it. After this submittal is approved, the contractor can proceed with removal of piling stubs and debris.*
- *Identified piling stubs shall be cut off at 2–3 feet below the mudline if possible.*
- *Bay floor debris including fallen timber piles, steel piping, concrete, and other miscellaneous items shall be removed as they are encountered during demolition activities.*
- *All Bay floor debris within the project limits that is not treated with creosote shall be removed unless such removal would involve disturbing eelgrass. Timber piles that are not shown on the design plans but are encountered during operations shall be removed. Other items not shown on the design plans or mentioned in the specifications, but that are encountered during the contractor's operations, shall be brought to the attention of the lead engineer. The lead engineer shall determine the disposition of the items.*
- *All removed debris shall be transported to the contractor's staging area and recycled or disposed at a permitted landfill facility.*
- *The contractor owner shall confirm that Bay floor debris has been removed by conducting a postconstruction side-scan sonar study.*
- *Existing concrete slabs and concrete debris along the shoreline shall be left in place to avoid destabilizing the embankment. All other timber and metal debris along shoreline shall be removed and disposed.*
- *The following BMPs shall be used to prevent the release of hazardous wastes and minimize creosote release, sediment disturbance, and generation of total suspended solids during demolition operations:*
  - *Install a floating surface boom to capture floating surface debris.*
  - *Keep all equipment (e.g., bucket, steel cable) out of the water and grip piles above the waterline.*
  - *Slowly lift the pile from the sediment and through the water column.*
  - *Dispose of all removed timber piles, floating surface debris, sediment spilled on work surfaces, and all containment supplies at a permitted upland disposal site that accepts creosote-treated wood and materials contaminated with creosote.*
- *The following BMPs shall be implemented by the construction contractor for handling creosote-containing materials, spill prevention and containment, erosion and sedimentation prevention, and monitoring requirements:*
  - *During demolition activities, a floating boom and skirt shall be deployed around the project site and absorbent booms and pads shall be provided on marine vessels on-site.*

- *Silt fences, straw wattles, and other measures determined appropriate for erosion and sediment control shall be implemented in upland areas.*

- *Waste at the demolition site, such as discarded demolition materials, chemicals, litter, and sanitary waste, shall be properly controlled.*

- *Vessel fueling shall be required at the contractor's staging area or at an approved docking facility. No cross-vessel fueling shall be allowed.*

- *Marine vessels generally shall contain petroleum products within tankage that is internal to the hulls of the vessels. All deck equipment shall be equipped with drip pans to contain leaks and spills. All fuels and lubricants aboard the work vessels shall have a double containment system. Chemicals used in the project area and on marine vessels shall be stored using secondary containment.*

Mitigation Measure M-HY-1c: Use Clamshell Dredges

To reduce resuspension of sediments and impacts on water quality when conducting dredging activities, clamshell dredges shall be used for all dredging activities. Using clamshell dredges causes dredged material to descend rapidly through the water column to the Bay bottom, with only a small amount of sediment remaining suspended, thus resulting in minimal turbidity impacts.

The proposed project and variant would comply with existing water quality control measures required under the general construction permit, construction site runoff permit, batch wastewater discharge permit, and with the water quality control measures and WDRs of the permits required for dredging. This compliance, together with implementation of Mitigation Measures M-HY-1a, M-HY-1b, and M-HY-1c regarding turbidity monitoring, pile removal BMPs, and dredging equipment, would reduce potential impacts from construction of the proposed project or variant related to a violation of water quality standards or WDRs to *less than significant with mitigation*.

Operation

Project operation at all four project site properties under the proposed project or variant would result in an increase in impervious surfaces and urban stormwater runoff. The proposed project and variant is anticipated to accommodate a variety of land use changes, including intensified development at the project site and increased recreational use, including in-water human-powered boating. Each type of land use change has the potential to alter the types, quantities, and timing of contaminant discharges in stormwater runoff. Changes in land use to a more developed state, if not properly managed, can adversely affect water quality.

As runoff water flows over the landscape, it picks up dissolved chemicals, particulate material, and gross surface debris before being discharged into a water body. The effects of this runoff water on surface water quality depend on the amount and type of material being picked up and transported, and on the amount of water or flow rate in the receiving water. Constituents and concentrations in runoff water vary according to land cover, land use, topography, and the amount of impervious cover, as well as the intensity and frequency of irrigation or rainfall. Runoff from undeveloped areas will reflect the natural chemistry and ecology of the watershed. Runoff in

developed areas may typically contain oil, grease, and metals accumulated in streets, driveways, parking lots, and rooftops, as well as pesticides, litter, herbicides, particulate matter, nutrients, animal waste, and other oxygen-demanding substances from landscaped areas. Runoff from open space areas and parks typically may contain nutrients, pesticides, organic debris, bacteria, sediment, and others.

These pollutants may originate from erosion in disturbed areas, deposition of atmospheric particles derived from automobiles or industrial sources, corrosion or decay of building materials, rainfall contact with toxic substances, and accidental spills of toxic materials on surfaces that receive rainfall and generate runoff. Specifically, sediment sources include roads and parking lots. Destabilized landscapes and coastal areas bring contaminants in their own right or transport other contaminants, such as trace metals, nutrients, and hydrocarbons that adsorb to suspended sediment particles.

Urban contaminants typically accumulate during the dry season and may be washed off when adequate rainfall returns in the fall to produce a "first flush" of runoff. The amount of contaminants discharged in stormwater drainage from developed areas varies based on a variety of factors: the intensity of urban uses such as vehicle traffic, the types of activities occurring (e.g., office, commercial, industrial), types of contaminants used at a given location (e.g., pesticides, herbicides, cleaning agents, petroleum byproducts), contaminants deposited on paved surfaces, and the amount of rainfall.

With the proposed project or variant, long-term operational discharges of urban contaminants into the stormwater drainage system and ultimate receiving waters would increase relative to existing conditions. The major factor in this increase is the added amount of impervious surfaces, primarily parking lots, driveways, streets, rooftops, and sidewalks. The presence of additional commercial and urban land uses that utilize potential pollutants (e.g., cleaning agents, pesticides, oil) could also result in discharges, if such potential pollutants are not stored, applied, and disposed of properly.

Compliance with several applicable regulations would reduce or avoid impacts of the proposed project and variant related to long-term erosion, sedimentation, and water quality degradation. Stormwater discharges from the project site to a separate stormwater system would be subject to the regulatory requirements of the NPDES Phase II MS4 Permit, the City's Stormwater Management Ordinance, and the City's SMR. The NPDES MS4 Phase II General Permit for stormwater discharge (Order No. 2003-0005-DWQ as amended by 2013-0001-DWQ) requires the use of Low Impact Development (LID) and green infrastructure BMPs to comply with stormwater management requirements. The NPDES Phase II MS4 Permit requires the City and SF Port to develop, administer, implement, and enforce stormwater management plans to protect and improve stormwater quality. Implementing the City's stormwater management plan requires postconstruction stormwater management for new development and redevelopment to protect stormwater quality and the quantity of water delivered to water bodies.

To obtain coverage under the NPDES Phase II MS4 permit, the proposed project or variant must comply with the City's Stormwater Management Ordinance and SMR to reduce postconstruction runoff by incorporating prioritized infiltration-based BMPs. RPD or, for the 700 Innes property, BUILD would be required to develop and submit preliminary and final stormwater control plans to SFPUC demonstrating how the project would meet the performance requirements; record a maintenance agreement; and implement construction stormwater management controls as designed in the approved stormwater control plan. Stormwater management controls must be maintained in perpetuity and annual self-inspection forms are required to confirm compliance. Through

compliance with the City's Stormwater Management Ordinance, the proposed project or variant would manage runoff from the 90th-percentile, 24-hour storm.

Wastewater generated on the project site would be conveyed into the City's sewer system and to the Southeast Treatment Plant, where it would be treated before being discharged into the Bay. Treatment is undertaken consistent with the effluent discharge standards established by the plant's NPDES permit (Order No. R2-2013-0029, NPDES No. CA37664). In accordance with the permit, discharges of treated wastewater and stormwater into the Bay meet the requirements of the CWA, the Combined Sewer Overflow Control Policy, and associated State requirements in the Basin Plan and do not violate water quality standards. For a discussion of operational impacts of the proposed project and variant as they relate to the potential to exceed the wastewater treatment requirements of the NPDES permit for the Southeast Treatment Plant, see Impact UT-1 in Section 3.12, "Utilities and Service Systems."

The proposed project or variant would also use recycled water to reduce the project's demand for potable water. At the India Basin Shoreline Park and 900 Innes properties, nonpotable water could be created by mining wastewater from the combined sewer pipeline in Hunters Point Boulevard, then treating it in an on-site wastewater treatment system (MKA, 2016a) if approved by SFPUC and the City. At the 700 Innes property, nonpotable water could be created by constructing a wastewater treatment facility on-site to treat a portion of the wastewater for reuse on-site as recycled water (Wastewater Scenario 2); or all wastewater flows would be discharged to the combined sewer (Wastewater Scenario 1), in which case a building-by-building system would be installed to use all available graywater, rainwater and foundation drainage to meet the toilet flushing and irrigation nonpotable-water demands. No wastewater is anticipated to be generated at the India Basin Open Space property.

On-site wastewater treatment would meet requirements in Title 22 of the California Code of Regulations, as defined in the California Department of Public Health's Recycled Water Regulations. Wastewater that would pass through the on-site treatment facilities would be typical of domestic wastewater. Treatment and reuse of the wastewater would be regulated by the San Francisco Non-Potable Water Program. It is not anticipated that any treated wastewater from the project site would be discharged to a natural watercourse; rather, it would be used for irrigation, restrooms (toilet flushing), and cooling water (Leys, pers. comm., 2016; BKF, 2016).

With the kayak concessions, piers/docks, beaches, and other recreational facilities, nonmotorized boating and general recreational use of the project area would increase. Trash and litter could be released into the Bay by recreationists on the water, or from land via wind or stormwater. Trash facilities would be provided in the project area and at the project's or variant's recreation facilities in accordance with Article 6, "Garbage and Refuse," of the San Francisco Health Code. Refuse containers would be required to have tight-fitting lids or sealed enclosures and could not be filled above the top of the rim. RPD or, for the 700 Innes property, BUILD would be required to provide for adequate refuse collection service. The project would also be required to comply with several City ordinances to reduce the amount of nondegradable trash generated under the proposed project or variant. In addition, the proposed project and variant would include stormwater infrastructure designed to meet the requirements of the SWRCB's 'trash amendments' to control trash from being discharged into receiving waters. Only nonmotorized boating use would be allowed at the project's or variant's recreation facilities; therefore, water quality degradation caused by fuel spills, ballast water, or sewage discharges would not be expected. In addition, Article 6 of the Health Code prohibits dumping of refuse onto any lands in San Francisco.

The specific project components and potential water quality impacts described above that relate to each project site property are described below.

India Basin Shoreline Park Property

Operation of the proposed project or variant at the India Basin Shoreline Park property would increase the property's impervious area by 0.25 acre (MKA, 2016b). Project operation may cause an increase in recreational uses that could discharge litter or urban contaminants (e.g., oil, litter) that, in turn, could accumulate in parking areas or on streets and reach receiving waters. A swale and/or bioretention pond would manage stormwater runoff from new impervious areas, in conformance with the City's stormwater requirements. The India Basin Shoreline Park property would be broken down into two subbasins for stormwater management. Runoff from the northern subbasin would utilize the existing stormwater outfall near the turnaround and the southern subbasin would require a new stormwater outfall.

Wastewater from restrooms (flow and flush), concessions, and the kayak and fish cleaning stations would enter the combined sewer (MKA, 2016a). Wastewater from the kayak and fish cleaning stations may contain sediment, bacteria, or organic debris that could enter the City's sewer system. Water from irrigation, drinking fountains, and the water feature top-off would not generate wastewater that would enter the combined sewer system (MKA, 2016a). Irrigation runoff that may contain nutrients, pesticides, herbicides, organic debris, bacteria, or sediment could enter receiving waters. As part of the proposed project or variant, recycled water would be used for park irrigation and toilet flushing, as wastewater would be mined from the combined sewer pipeline under Hunters Point Boulevard and treated in an on-site wastewater treatment system (MKA, 2016a).

Compliance with the City's regulatory requirements for stormwater would ensure that implementing the proposed project or variant at this property would not cause an increase in stormwater pollutants discharged to the Bay and would be designed to meet the requirements of the SWRCB's 'trash amendments'. Wastewater discharged to the combined sewer system would be treated in accordance with the City's NDPES permit and recycled water generated on-site would be treated to Title 22 requirements. Compliance with Article 6 of the Health Code would reduce the potential for water quality impacts from litter transport to the Bay or stormwater facilities.

900 Innes Property

As described for the India Basin Shoreline Park property, increased impervious area (0.67 acre) and the potential for increased recreational use of the 900 Innes property could result in discharges of urban contaminants and irrigation runoff into receiving waters. A swale and/or bioretention pond would manage stormwater runoff from new impervious areas, in conformance with the City's stormwater requirements. A new stormwater outfall would be jointly used by the 900 Innes property and the adjacent 700 Innes property (MKA, 2016a).

The existing condition at the 900 Innes property, however, already includes impervious area and litter. Implementing the proposed project or variant would result in some benefit because existing litter would be cleaned up and remediation activities would be completed at the site to minimize the potential for historical contamination to affect water quality. Removing two existing piers that may contain creosote would also benefit long-term water quality.

Wastewater from restrooms (flow and flush) and concessions would enter the combined sewer (MKA, 2016a). Water from irrigation, drinking fountains, and the water feature top-off would not generate wastewater that would enter the combined sewer system (MKA, 2016a). Irrigation runoff that may contain nutrients, pesticides, herbicides, organic debris, bacteria, or sediment could enter receiving waters.

Remediation, pier removal, and compliance with the City's regulatory requirements for stormwater and the SWRCB's 'trash amendments' would ensure that implementing the proposed project or variant at this property would not cause an increase in stormwater pollutants and trash discharged to the Bay, and would help reduce water quality degradation from existing contaminants. Wastewater discharged to the combined sewer system would be treated in accordance with the City's NDPES permit. Compliance with Article 6 of the Health Code would reduce the potential for water quality impacts from litter transport to the Bay or stormwater facilities.

India Basin Open Space Property

The India Basin Open Space property would remain primarily as natural habitat, including wetlands. Impervious area would be added only in the form of public-access pathways and a 2,000-gsf building for commercial uses located immediately adjacent to the India Basin Open Space property. An existing drainage outfall extending into the Bay would also be removed. Overall, however, there would be no net increase in impervious area on this property. The vast majority (95 percent) of the property would remain as pervious area. Opportunities for operational water quality impacts would be minimal, given the absence of vehicles or manicured vegetation. Because of the lack of facilities proposed for the India Basin Open Space property, no wastewater would be generated (Sherwood, 2016). Compliance with Article 6 of the Health Code would reduce the potential for water quality impacts from litter transport to the Bay or stormwater facilities.

700 Innes Property

Proposed Project

Residential and nonresidential development at the 700 Innes property would occur on primarily vacant, pervious lands. The proposed project is a residentially focused, mixed-use development that includes approximately 1,240 dwelling units and 275,330 gsf of ground-floor retail, commercial, or flex space. The proposed project would result in an increase in impervious area of 14.2 acres[7] over the 17.1-acre property, causing the property to be 93 percent impervious, compared to existing conditions in which 10 percent of the property is impervious. Implementing the proposed project would also result in intensification in uses and associated urban stormwater runoff. This change from pervious to impervious surface would cause an associated increase in urban stormwater runoff (69 percent increase in the runoff rate [Sherwood, 2016]), which can be a source of surface water pollution.

[7] Existing impervious area on the property is 1.7 acres, and the proposed project would result in 15.9 acres of impervious area [15.9 acres - 1.7 acres = 14.2-acre increase in impervious area].

The stormwater management system on the 700 Innes property is anticipated to include:

- streetscape runnels to convey stormwater in hardscape areas to various bioretention areas, and to feed the reservoirs in the open space;
- vegetated swales for stormwater treatment and conveyance in softscape areas, that would accommodate water flows from seasonal and large storm events and could withstand inundation;
- local treatment, including the use of rain gardens and flow-through planters in the public realm, stormwater bioretention ponds and swales, and biotreatment landscapes in the open space areas;
- retention ponds to store runoff for reuse;
- a circulation system to aerate and move water between facilities;
- the use of treated stormwater for on-site reuse, and on-site recycling of gray water and black water for on-site irrigation, toilet flushing, and other purposes, including potential export for off-site irrigation; and
- a spring cutoff drain to recapture water flow from a spring below the project site to contribute to meeting demands for nonpotable water and for use in water features and/or stormwater infrastructure (requires approval from SFPUC and the City).

Buildings for the proposed project would be constructed to the standards required by the San Francisco Green Building Ordinance, which establishes LEED certification levels or GreenPoint Rated systems points for various types of buildings. Specifically, at the 700 Innes property, the proposed project would be constructed to a LEED Silver rating or equivalent, which may include implementing stormwater management controls to reduce runoff volume and improve water quality by replicating the site's natural hydrology and water balance.

Commercial uses on the 700 Innes property would be required to obtain coverage under the industrial general stormwater permit, depending on the specific activities conducted on-site. The general stormwater permit requires the development and implementation of a SWPPP identifying the sources of pollutants and the ways that those pollutants would be managed to reduce the potential for stormwater pollution. Policies for the safe handling and disposal of hazardous materials would also protect water quality through the proper handling, use, and disposal of hazardous materials, as well as emergency response planning to minimize potential water quality impacts from accidental spills.

Two potential scenarios for wastewater management are being considered for the proposed project:

- *Wastewater Scenario 1:* Connect to the municipal combined sewer system and discharge all sewer flows generated on the property to the municipal system.[8]
- *Wastewater Scenario 2:* Construct a wastewater treatment facility on-site to treat a portion of the wastewater for reuse on-site as recycled water.

Wastewater from on-site uses (e.g., residential, commercial) would be discharged to the combined sewer system under Wastewater Scenario 1, in which case nonpotable-water demand would be met using a building-by-building system to use all available graywater, rainwater and foundation drainage to meet the toilet flushing and irrigation

[8] The City requires developments with 250,000 sq. ft. of gross floor area to treat water on-site and reuse it for nonpotable applications. If Wastewater Scenario 1 is chosen, a building-by-building system would be installed to use all available graywater, rainwater and foundation drainage to meet the toilet flushing and irrigation nonpotable-water demands.

nonpotable-water demands. Under Wastewater Scenario 2, recycled water would be generated from treatment of wastewater on-site. Under either scenario, irrigation and cooling water would not generate wastewater that would enter the combined sewer system or be treated at the wastewater treatment plant. Irrigation runoff that may contain nutrients, pesticides, herbicides, organic debris, bacteria, or sediment could enter receiving waters.

Compliance with the City's regulatory and permitting requirements for stormwater (NPDES Phase II MS4 permit, Stormwater Management Ordinance, SMR, and industrial general stormwater permit) and the SWRCB's 'trash amendments' would ensure that implementing the proposed project at the 700 Innes property would not result in an increase in stormwater pollutants and trash discharged to the Bay. Wastewater discharged to the combined sewer system would be treated in accordance with the City's NDPES permit and recycled water generated on-site would be treated to Title 22 requirements. Compliance with Article 6 of the Health Code would reduce the potential for water quality impacts from litter transport to the Bay or stormwater facilities.

Variant

The variant would consist of up to approximately 1 million gsf of commercial/institutional uses and 500 dwelling units. It is anticipated, however, that the pervious-to-impervious ratio would be the same for the variant as for the proposed project (Sherwood, 2016). Therefore, implementing the variant would increase the impervious area of the 700 Innes property by 14.2 acres relative to existing conditions. Even moreso than the proposed project, the variant proposes additional commercial uses that would require obtaining coverage under the industrial general stormwater permit, depending on the specific activities of the commercial use.

Compliance with the City's regulatory and permitting requirements for stormwater (NPDES Phase II MS4 permit, Stormwater Management Ordinance, SMR, and industrial general stormwater permit) and the SWRCB's 'trash amendments' would ensure that implementing the variant at the 700 Innes property would not result in an increase in stormwater pollutants and trash discharged to the Bay. Wastewater discharged to the combined sewer system would be treated in accordance with the City's NDPES permit and recycled water generated on-site would be treated to Title 22 requirements. Compliance with Article 6 of the Health Code would reduce the potential for water quality impacts from litter transport to the Bay or stormwater facilities.

Overall Operational Impact Conclusion

Compliance with the City's regulatory and permitting requirements for stormwater, treatment of wastewater in accordance with the City's NDPES permit, treatment of recycled water generated on-site to Title 22 requirements, and compliance with Article 6 of the Health Code would reduce the potential for water quality impacts from the proposed project or variant. Therefore, under either the proposed project or the variant, the operational impact related to a violation of water quality standards or WDRs would be *less than significant*. No mitigation measures are necessary.

Impact HY-2: The proposed project or variant would alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation or flooding on- or off-site. ***(Less than Significant with Mitigation)***

The following impact discussion describes the project's or variant's impacts related to alteration of the existing drainage pattern or a substantial increase in surface runoff in a manner resulting in substantial erosion or siltation or flooding. Except where noted, the respective impacts described below would occur under either the proposed project or the variant.

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Short-term impacts of project construction under the proposed project or variant as they relate to erosion and siltation are discussed above under "Construction" in the analysis of Impact HY-1 and would be *less than significant with mitigation* for the entire project site.

Projects that disturb more than 1 acre of land must also comply with the requirements of the construction general permit (Order 2009-009-DWQ, as amended by Order Nos. 2010-0014-DWQ and 2012-0006-DWQ). Those requirements prohibit postconstruction conditions at a project site from causing or contributing to direct or indirect impacts on water quality. The construction general permit also identifies the need to address changes in the hydrograph (defined as hydrograph modification or hydromodification) that could result from urbanization of a watershed, and requires that LID controls more closely mimic the previously developed hydrologic condition.

Operation

No streams or rivers exist on the project site; however, with construction of new structures and other impervious surfaces, the proposed project or variant would change drainage patterns, creating the potential to increase the rate or amount of surface runoff in a manner that could result in substantial erosion or siltation or flooding on- or off-site.

The relative amount of impervious surface created under the proposed project or variant would range from low (e.g., open space) to high (e.g., residential and commercial development at the 700 Innes property). Expanding impervious surfaces on the project site would increase the peak discharge rate of stormwater runoff and could result in erosion, sedimentation, shoreline erosion, and on-site flooding. Increased peak-flow rates may exceed drainage system capacities, exacerbate erosion in overland flow and drainages, and result in sedimentation and deposition in receiving waters. Because the receiving water associated with the project site is the Bay, sedimentation would not reduce conveyance capacities or result in an increased risk of off-site flooding. However, erosion and sediment deposition typically lead to adverse changes to water quality and hydrology.

Adding impervious surfaces and drainage infrastructure during urbanization increases runoff volumes and dry-weather flows, frequency and number of runoff events, long-term cumulative duration of flows, and peak flows. These changes are referred to as "hydromodification." Although no streams or rivers are located at the project site, the proposed project or variant would result in impacts related to increases in impervious surfaces. Grading, excavation, and fill activities for the proposed project or variant could also cause changes to drainage patterns.

As described for Impact HY-1, several existing regulations would apply to the proposed project and variant and would reduce or avoid impacts related to long-term erosion and sedimentation. Stormwater discharges from the project site to a separate stormwater system would be subject to the regulatory requirements of the NPDES

Phase II MS4 permit, the City's Stormwater Management Ordinance, and the City's SMR. To obtain coverage under the NPDES Phase II MS4 permit, the proposed project or variant would be required to comply with the City's Stormwater Management Ordinance and SMR to reduce postconstruction runoff by incorporating prioritized infiltration-based BMPs. RPD or, for the 700 Innes property, BUILD would be required to submit a stormwater control plan to SFPUC demonstrating how the proposed project or variant would meet the performance requirements. Through compliance with the City's Stormwater Management Ordinance, the proposed project or variant would manage runoff from the 90th-percentile, 24-hour storm, which translates to a rainfall depth of approximately 0.75 inch and a rainfall intensity of approximately 0.24 inch per hour for projects within SFPUC's jurisdiction. Compliance with City stormwater requirements would ensure that runoff from the proposed project or variant would not cause siltation at shoreline recreation facilities.

India Basin Shoreline Park Property

The India Basin Shoreline Park property currently has a picnic area, playground, a basketball court, landscaping, and a portion of the Blue Greenway/Bay Trail. Vehicular access in the park is provided via Hunters Point Boulevard. Hawes Street has designated parking areas and ends at a cul-de-sac and drop-off area. The property consists primarily of pervious areas in the form of wetlands and upland plantings. The existing surface parking, vehicular access, and drop-off and loading zones may be improved as part of the proposed project or variant. As part of the planning and design process, RPD would study the feasibility of creating new wetlands along the shoreline. Implementing the proposed project or variant would result in an increase in impervious area totaling 0.25 acre. Stormwater runoff from new impervious areas would be managed via swales and/or bioretention ponds before being discharged to the Bay and would conform to the City's stormwater management requirements and the SWRCB's 'trash amendments'.

900 Innes Property

The 900 Innes property currently consists of seven parcels totaling 2.4 acres, 0.6 acre of which is submerged. The property contains six buildings and structures totaling approximately 7,760 sq. ft. With implementation of the proposed project or variant, the 900-gsf Shipwright's Cottage (900 Innes Avenue) and a structure in the location of the former Boatyard office building would remain, and the remaining structures would be demolished for development of the parcels into a waterfront park.

The proposed RPD development would be constructed to a LEED Gold rating or equivalent. Bicycle, pedestrian, and vehicular access to the shoreline would be provided, in addition to parking, for a total of approximately 0.67 acre of new impervious area. Stormwater runoff from new impervious areas would be managed via swales and/or bioretention ponds before being discharged to the Bay and would conform to the City's stormwater management requirements and the SWRCB's 'trash amendments'.

India Basin Open Space Property

The 6.2-acre India Basin Open Space property currently contains benches, upland habitat, tidal salt marsh, mudflats, sand dunes, native vegetation, and offshore eelgrass beds.[9] The tidal salt marsh occupies 2.5 acres of the

[9] According to a recent site visit, no eelgrass was observed on the project site; however, there is potential for eelgrass. See Chapter 3.14 Biological Resources.

property. The India Basin Open Space property also includes a portion of the Blue Greenway/Bay Trail along its shoreline. With the proposed project or variant, this property would remain in a natural state with some enhancements for public access, recreation, and ecological function. Enhancements could include sand dunes, bird islands, a recreational beach area, a bioengineered breakwater, brackish lagoons, scrub upland planting, tree stands for wind buffering, and new wetlands and ponds, none of which would result in a substantial increase in impervious area. An existing drainage outfall extending into the Bay would also be removed. Pathways, in the form of boardwalks, trails, and stairways for the Blue Greenway/Bay Trail, and a 2,000-gsf building for commercial uses (cafe, maintenance facility, rentals, concessions) may result in some compaction; however, the increase in impervious area would be minimal.[10]

700 Innes Property

Proposed Project

The 700 Innes property is currently primarily undeveloped, except for six buildings and structures located along Innes Avenue. Arelious Walker Drive is a paved street that runs north to south and roughly bisects the 700 Innes property, ending in a cul-de-sac. With implementation of the proposed project, the 700 Innes property would include the "Big Green" open space area and would provide approximately 4.66 acres of publicly accessible open space, including pedestrian-focused pathways, streets, and plazas. The proposed development would also include approximately 3.22 acres of open space for shared use by residents and private open space (courtyards, roof decks, private decks, and patios for residents), some of which would be pervious. In total, the proposed project would increase the impervious area at the 700 Innes property by approximately 14.2 acres relative to existing conditions, resulting in an estimated increase in the peak runoff rate of 69 percent (Sherwood, 2016). The proposed stormwater facilities (described in Impact UT-2 in Section 3.12, "Utilities and Service Systems") would conform to the City's stormwater management requirements to capture and treat the increased total runoff from this property and would be designed to meet the SWRCB's 'trash amendments'.

Variant

The variant would provide approximately 0.6 acre less of publicly accessible open space and 0.5 acre less of open space for shared resident use than the proposed project. The pervious-to-impervious ratio is expected to be the same for the variant as for the proposed project: Impervious area at the 700 Innes property would increase by 14.2 acres relative to existing conditions, resulting in an estimated increase in the peak runoff rate of 69 percent (Sherwood, 2016). Similar to the proposed project, the stormwater facilities proposed for the variant would conform to the City's stormwater management requirements and would be designed to meet the SWRCB's 'trash amendments'.

Overall Operational Impact Conclusion

Stormwater facilities under the proposed project or variant would conform to the City's stormwater management requirements. Therefore, under either the proposed project or the variant, the operational impact related to

[10] The 2,000 India Basin Open Space concessions building would be constructed on the Big Green within the 700 Innes property boundary to serve the improved India Basin Open Space.

alteration of the existing drainage pattern or a substantial increase in the rate or amount of surface runoff would be *less than significant.* No mitigation measures are necessary.

Impact HY-3: The proposed project or variant would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, and the project would not otherwise degrade water quality. *(Less than Significant with Mitigation)*

The following impact discussion describes the impacts of project construction and operation related to runoff water exceeding the capacity of existing or planned stormwater drainage systems, providing substantial additional sources of polluted runoff, or otherwise degrading water quality. The respective impacts described below would occur under either the proposed project or the variant.

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Short-term impacts of project construction under the proposed project or variant as they relate to stormwater management and polluted runoff are discussed above under "Construction" in the analysis of Impact HY-1 and would be *less than significant with mitigation* for the entire project site.

Operation

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Stormwater drainage infrastructure would be installed underground throughout the project site to treat stormwater on-site for release into the Bay, and would not contribute stormwater to the City's combined sewer system. This newly planned and sized separate stormwater infrastructure would be designed to satisfy the stormwater runoff requirements of the proposed project or variant and meet the requirements of the City's Stormwater Management Ordinance and the SWRCB's 'trash amendments'. The project site would be designed with LID concepts and stormwater management systems to comply with the SMR. Compliance with the SMR would ensure that stormwater generated at the project site is managed on-site to meet the performance requirements. Stormwater runoff from the proposed project or variant would not be connected to the combined sewer system, and therefore, would not contribute stormwater runoff to the City's combined sewer system.

India Basin Shoreline Park Property

Swales and/or bioretention ponds would manage stormwater runoff from new impervious areas on the India Basin Shoreline Park property in accordance with the SFPUC storm drainage code and in conformance with the City's stormwater management requirements and the SWRCB's 'trash amendments'. The property would be broken down into two subbasins for stormwater management. Runoff from the northern subbasin would utilize the existing stormwater outfall near the turnaround and the southern subbasin would require a new stormwater outfall. These facilities would not contribute stormwater runoff to the City's combined sewer system.

900 Innes Property

Swales and/or bioretention ponds would manage stormwater runoff from new impervious areas on the 900 Innes property in accordance with the SFPUC storm drainage code and in conformance with the City's stormwater management requirements. A new stormwater outfall would be jointly used by the 900 Innes property and the adjacent 700 Innes property (MKA, 2016a) and would not contribute stormwater runoff to the City's combined sewer system.

India Basin Open Space Property

It is assumed that the wetlands, marshes, and sand dunes on the India Basin Open Space property would be self-treating in terms of stormwater and would enable water to overland flow into the Bay.

700 Innes Property

The proposed project or variant would implement a stormwater management system on the 700 Innes property, with the goal of retaining and reusing some of the stormwater captured on-site. The variant would include the same stormwater management system as described for the proposed project, which would be sized for the level of development included in the variant.

The proposed project or variant would also treat and discharge stormwater via outfalls to the Bay and would be designed to meet SWRCB's 'trash amendments'. Stormwater from the 700 Innes property would be treated in centralized and decentralized bioretention areas, sized in accordance with SFPUC and San Francisco Bay RWQCB requirements, then would be discharged to the Bay. The treatment areas are expected to be located in internal courtyards and private open space and would be lined with underdrains to address geotechnical concerns (liquefaction and lateral spreading) caused by the presence of fill in the lower portions of the site. In accordance with SFPUC guidelines, the project is expected to need 1 to 1.2 acres (4–5 percent of the total project site) for biofiltration (Sherwood, 2016). In addition, as part of the proposed project or variant, stormwater may be captured, treated, and reused as a nonpotable water source on-site to meet requirements of the Nonpotable Water Ordinance.

Storm drain improvements under the proposed project or variant would comply with the City's 2015 Subdivision Regulations. Conveyance infrastructure (pipes, channels, swales) would be sized for the 5-year event and overflows would bypass treatment and would be discharged directly to the Bay. Flows from a 100-year event would be routed safely overland through the property to the Bay. Although a section of the 700 Innes property is located in a separate sewer area, the entire proposed project and variant proposes to have a system regulated as a separate storm sewer area and follow the MS4 requirements. The proposed project and variant would include new stormwater infrastructure that would treat stormwater on-site for release into the Bay and would not contribute stormwater to the City's combined sewer system. This would require a preliminary concurrence from SFPUC before submission and approval by the San Francisco Bay RWQCB. The proposed stormwater facilities would be operated in conformance with the City's stormwater management requirements and would not contribute stormwater to the City's combined sewer system.

Overall Operational Impact Conclusion

The stormwater facilities under the proposed project or variant would be operated in conformance with the City's stormwater management requirements and would not contribute stormwater to the City's combined sewer system. Thus, under either the proposed project or the variant, the operational impact related to creation or contribution of runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or otherwise degrade water quality, would be *less than significant.* No mitigation measures are necessary.

Impact HY-4: The proposed project or variant would not place within a 100-year flood hazard area structures that would impede or redirect flood flows. *(Less than Significant)*

The following impact discussion describes the potential impacts of the proposed project or variant related to placement within a 100-year flood hazard area of structures that would impede or redirect flood flows. The respective impacts described below would occur under either the proposed project or the variant.

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Impacts related to placement of structures that would impede or redirect flood flows within a 100-year flood hazard area are limited to operational impacts; see the discussion below.

Operation

Operation of the proposed project or variant would include the presence of new piers, docks, beaches, and shoreline modifications within the 100-year flood hazard area. As stated previously, there are no streams or rivers at the project site. All inhabited buildings proposed as part of the proposed project or variant would be located outside of the 100-year flood hazard area. The proposed recreation facilities (piers, docks, beaches) on and along the Bay would not be expected to impede or redirect flood flows.

India Basin Shoreline Park Property

The 100-year flood zone on the India Basin Shoreline Park property (Figure 3.15-2) extends up to 10 feet and would include the new gravel shoreline area and facilities in and over the water. An approximately 12-foot-wide by 480-foot-long pier would be constructed on piles at the India Basin Shoreline Park property. Directly adjacent to this pier, a 50-foot by 100-foot floating dock is proposed that would feature an ADA-accessible boat launch area that would allow access to the Bay by hand-powered boats. The riprap edge would also be replaced with tidal wetlands. The wetlands would be created on the land side during low tide. The piers, dock, and gravel shoreline area at the end of the Marineway lawn would be located within the 100-year flood hazard area. The piers and dock would be designed to float above the 100-year floodwaters and rise with the floodwaters (Conover, pers. comm., 2016). None of the proposed project or variant components in the 100-year flood hazard area would impede or redirect flood flows.

900 Innes Property

On the 900 Innes property, the 100-year flood zone extends up to 10 feet and would include the facilities in and over the water, but not the buildings proposed for the site. RPD would replace two piers, one 12 feet wide and 125 feet long and another one that is nearly collapsed into the Bay, both located within the 100-year flood hazard area. One replacement pier is proposed to be approximately 12 feet wide and 120 feet long, and the other is proposed to be approximately 18 feet wide and 50 feet long. An eroded marine byway, adjacent to the shoreline edge of the Bay, would also potentially be enhanced. The piers are anticipated to be constructed on piles, and would be used solely for pedestrian access with minor furnishings such as benches. There would be no boat access on any of the 900 Innes piers. The renovated/replaced piers, an existing concrete dock, an ADA-accessible ramp, and most of the India Basin Scow Schooner Boatyard artifact area would be located in the 100-year flood hazard area. None of these components would impede or redirect flood flows.

India Basin Open Space Property

The India Basin Open Space property, at up to 12 feet NAVD88, is located in the 100-year flood hazard area. BUILD may replace a portion of the riprap edge with tidal wetlands along the shoreline of this property. The wetlands would be created on the land side during low tide. A beach area, wetlands, grassy areas, and pedestrian paths would be located in the 100-year flood hazard area. These components would not impede or redirect flood flows.

700 Innes Property

Development of the 700 Innes property under either the proposed project or the variant would not include any structures located within the 100-year flood hazard area that would impede or redirect flood flows (see Figure 3.15-2). Only some wetland areas on the 700 Innes property would be located in the 100-year flood hazard area.

Overall Operational Impact Conclusion

All inhabited buildings proposed as part of the proposed project or variant would be located outside of the 100-year flood hazard area. Project operation would include the presence of new piers, docks, beaches, and shoreline modifications within the 100-year flood hazard area; however, these facilities would not be expected to impede or redirect flood flows. Therefore, under either the proposed project or the variant, the operational impact related to structures within a 100-year flood hazard area that would impede or redirect flood flows would be *less than significant.* No mitigation measures are necessary.

Impact HY-5: The project site is subject to flooding from tsunami inundation, but the proposed project or variant 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. The project site is not subject to inundation by mudflows or a seiche. ***(Less than Significant)***

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

The effects on the proposed project or variant related to flooding and inundation from seiches, tsunami, or mudflow are limited to project operation; see the discussion below.

Operation

In addition to the flood hazards described below, flood hazards associated with sea-level rise are of concern near shorelines. A discussion of potential sea-level rise effects on the proposed project or variant is included below in the discussion of Impact HY-6.

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Flooding

The four properties at the project site are not vulnerable to risks from flooding caused by dam or levee failure. The project site's estimated 100-year base flood elevation, the elevation to which floodwaters are anticipated to rise during the 1-percent-annual-chance flood event, is between 10 and 12 feet NAVD88 (M&N, 2015; FEMA, 2015). The typical range estimated for the Bay's shoreline is 5–7 feet for tides, -0.5 foot to 3 feet for storm surge, and 1–4 feet for storm waves (SFSFLRC, 2015). Thus, under either the proposed project or the variant, people and habitable structures on the four project site properties would not be affected by a 100-year flood.

Seiche

With regard to a potential seiche, a seiche-inducing earthquake similar to the 1906 earthquake, which registered 8.3 on the Richter scale and resulted in a 4-inch seiche, is likely on the larger end of what is anticipated to occur in the Bay Area. Consequently, a seiche larger than 4 inches is considered unlikely. A four-inch seiche would be within the normal tidal range of over 2.4 feet (between mean low or high tide and mean tide level) (M&N, 2017). Therefore, the four project site properties are not subject to inundation from a seiche. Under either the proposed project or the variant, people and habitable structures at all four project site properties would not be affected by flooding due to a seiche.

Tsunami

Portions of the project site could be subject to flooding or inundation by tsunami, but no inhabited structures would be located in the tsunami inundation zone, and the finished grade elevations for project structures and their distance from the shore would protect them from flooding. At the 900 Innes property, where almost the entire existing site is within the tsunami inundation zone, the buildings associated with the proposed project or variant would be at elevations above 15 feet, well above the potential "worst-case" tsunami runup of 3.77 feet

(San Francisco, 2011) (6.97 feet if accounting for msl at the site of 3.2 feet). Facilities within the tsunami inundation zone would include piers, docks, beaches, an ADA-accessible ramp, pedestrian paths, a boardwalk, a beach deck, and the eastern end of the Bay Trail. The Tsunami Warning System would notify the public, including recreationists, of any imminent hazards from tsunami or seiche, minimizing the risk of injury or death to people involving flooding or inundation.

Several factors could exacerbate the frequency or severity of flooding or cause flooding in areas that otherwise would not be subject to flooding:

- lowering of a site's elevation or promotion of substantial shoreline erosion, both of which would expose additional areas to flooding;
- additional stormwater or other discharge of water that would provide additional floodwater; and
- construction of structures within the Bay that would alter water and wave flows and channel water towards the shoreline, which could result in flooding and erosion.

The proposed project and variant would not include additional stormwater discharges or other discharges that would increase the frequency or severity of flooding. As discussed in Impact HY-1, stormwater would be managed in compliance with the City's SMR; therefore, the proposed project or variant would not contribute additional floodwater to the project area.

The proposed project and variant include in-water improvements such as piers and docks. These facilities would have minimal in-water presence (piles only), which would not alter patterns of water or wave circulation or channel water or waves toward the shoreline, potentially causing flooding and erosion. Such changes in water and wave patterns could result from more significant in-water facilities such as a breakwater or seawall. The removal of existing piles would also not contribute to changes in water/wave circulation, as these piles are small and do not contribute significantly to water or wave flow patterns.

Shoreline improvements under the proposed project and variant include tidal wetlands and beaches. The tidal wetlands, in particular, would help reduce potential flooding and damage from a tsunami by attenuating wave energy, resulting in lower waves with less erosive force (Mount and Lowe, 2014). As noted in Mount and Lowe (2014), the presence of tidal wetlands between the developed shoreline and the open waters of the Bay improves flood risk management.

Under the proposed project and variant, proposed beaches would not be located within strong erosional currents. The beach proposed for the India Basin Shoreline Park property would be in an area where the wave-current field is dynamic and the shoreline is stable. Therefore, the beach would not be expected to experience substantial erosion during a tsunami and expose additional areas to flooding. The beach proposed for the India Basin Open Space property would be in an area with weak wave-induced erosional currents that are incapable of moving coarse (sand or gravel) sediments (M&N, 2017). Therefore, substantial erosion from tsunami waves and flooding would not be expected at this location.

Overall, the shoreline improvements under the proposed project and variant would not exacerbate flooding or expose new areas to flooding, but would help attenuate waves and reduce wave impacts from a tsunami.

Mudflow

The project site is relatively flat and is isolated from adjacent, more hilly areas that are primarily landscaped, vegetated, or developed with paved roadways. In addition, lands adjacent to and upland from the project site are landscaped, vegetated, and/or developed and separated from the project site by the paved Innes Avenue and Hunters Point Boulevard.

Because the physical conditions required for a mudflow are not present, mudflow would not pose a risk to the project site. Thus, under either the proposed project or the variant, the people and habitable structures at all four project site properties would not be affected by mudflow.

Overall Operational Impact Conclusion

Under the proposed project and variant, people and habitable structures would not be affected by a 100-year flood. The project site properties are not subject to inundation from a seiche or mudflow. Although the project site is subject to flooding from a tsunami, the proposed project and variant 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. Therefore, under either the proposed project or variant, the operational impact would be *less than significant.* No mitigation measures are necessary.

Impact HY-6: The project site is subject to flooding from sea-level rise, but the proposed project or variant 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. *(Less than Significant)*

Construction

Potential effects related to flooding and inundation from sea-level rise are limited to project operations; see the analysis below.

Operation

The water surface elevation of the Bay would be affected by future sea-level rise and future sea-level rise may increase the chance of flooding on the project site.

To evaluate the effect of flooding caused by sea-level rise on the project site, the following scenarios were used and are representative of the inundation that could occur by the years 2050 and 2100 based on NRC's projected and high estimates of sea-level rise, and considering a 1 percent annual flood hazard area. The sea-level rise scenarios include:

- MHHW plus 12 inches of sea-level rise (representative of NRC's projected sea-level rise by 2050);
- MHHW plus 36 inches of sea-level rise (representative of NRC's projected sea-level rise by 2100);
- 1 percent annual flood hazard area in combination with 24 inches of sea-level rise (representative of NRC's high estimate of sea-level rise by the year 2050); and
- 1 percent annual flood hazard area in combination with 66 inches of sea-level rise (representative of NRC's high estimate of sea-level rise by the year 2100).

Table 3.15-4 summarizes MHHW under current conditions and the four sea-level rise scenarios used in this analysis (described above). For the 2050 and 2100 sea-level rise scenarios that include temporary flooding in the 1 percent annual flood hazard area, the flood hazard area was developed by determining the 1-percent-annual-chance wave runup based on 25-year and 10-year return wave conditions and the Van de Meer equation, resulting in total water levels for five locations in the project area (Table 3.15-5). The calculated 1 percent annual flood hazard area is the same as the current preliminary FEMA base flood elevation for the northeastern shoreline of the India Basin Open Space and 900 Innes property, and 1–2 feet higher than the preliminary FEMA base flood elevation for the India Basin Shoreline Park property and India Basin Open Space's northwestern shoreline (M&N, 2017).

Table 3.15-4: Elevation of Various Sea-Level Rise Scenarios in the Project Area

	Current MHHW	MHHW + 12 Inches (projected sea-level rise by 2050)	MHHW + 36 Inches (projected sea-level rise by 2100)	1% Annual Flood Hazard Area + 24 Inches (high estimate of sea-level rise by 2050)	1% Annual Flood Hazard Area + 66 Inches (high estimate of sea-level rise by 2100)
Feet	6.5	7.5	9.5	12 to 14*	15.5 to 17.5*
Inches	78	90	114	144 to 168*	186 to 210*

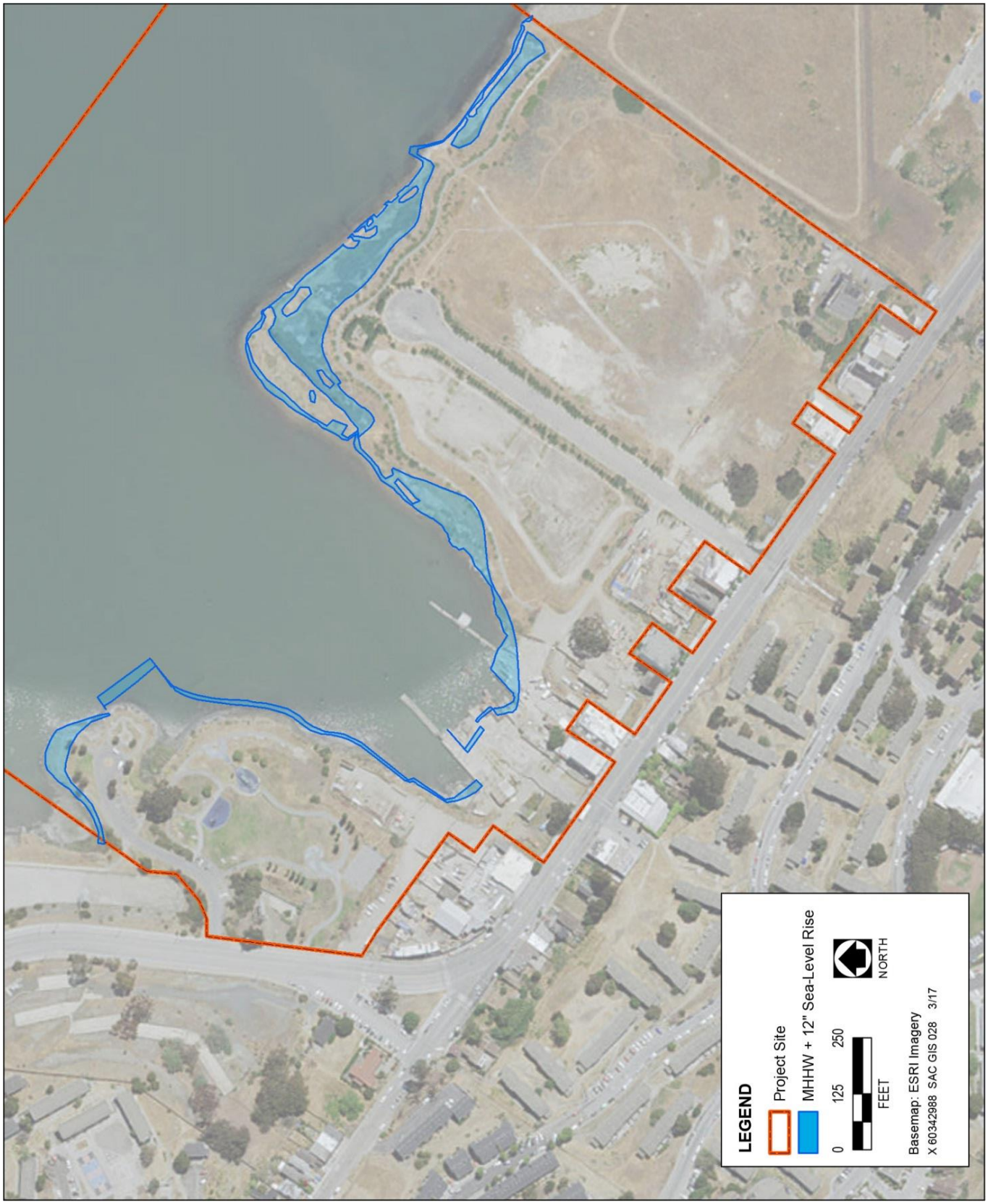
Notes:
MHHW = mean higher high water
* The elevation of the 1% flood hazard area varies within the project area. See Table 3.15-5 for 1% annual flood hazard area elevations by portion of the project area.
Source: M&N, 2017

Table 3.15-5: 1% Annual Flood Hazard Elevation by Location in the Project Area

Location in the Project Area	1% Annual Flood Hazard Area (feet NAVD88)	FEMA Base Flood Elevation (feet NAVD88)
India Basin Shoreline Park northern marsh area	12	10
India Basin Shoreline Park gravel shoreline area	11	10
India Basin Shoreline Park southern marsh area	12	10
900 Innes property	10	10
India Basin Open Space northwestern shoreline	11	10
India Basin Open Space northeastern shoreline	12	12

Notes: FEMA = Federal Emergency Management Agency; NAVD88 = North American Vertical Datum of 1988
Source: M&N, 2017

Figures 3.15-4 through 3.15-7 show the four sea-level rise scenarios listed above and identify the areas of each project site property, under proposed elevations, that would be inundated with each sea-level rise scenario. Figures 3.15-6 and 3.15-7 show the worst-case scenario—the highest estimate of sea-level rise in combination with temporary flooding from a 1 percent annual flood.

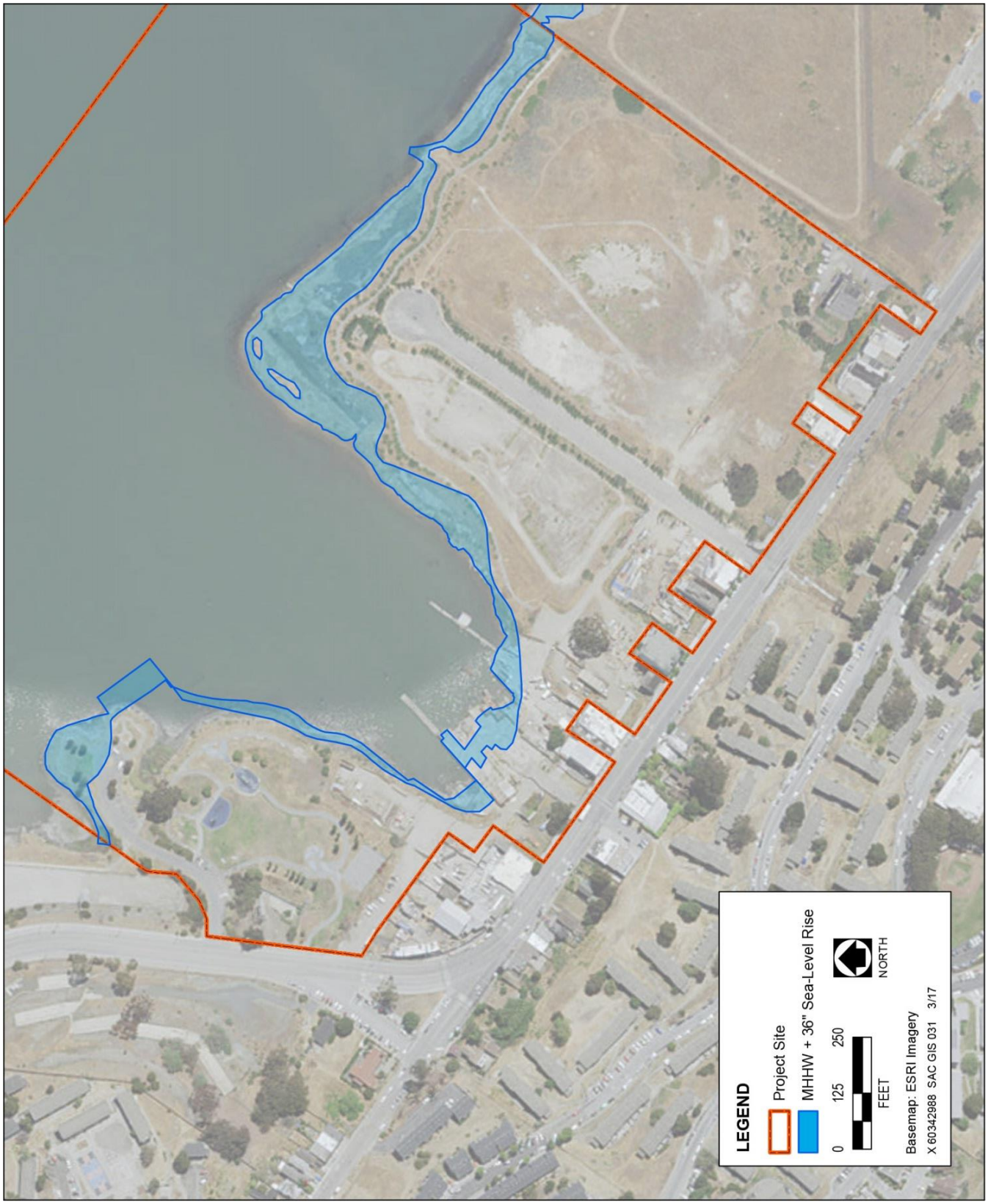


Source: M&N, 2017

Figure 3.15-4: Projected Sea-Level Rise by 2050 (Mean Higher High Water plus 12 Inches)

Source: M&N, 2017

Figure 3.15-5: 1% Annual Flood Hazard Area plus 24 Inches (High Estimate of Sea-Level Rise by 2050)



Source: M&N, 2017

Figure 3.15-6: Projected Sea-Level Rise by 2100 (Mean Higher High Water plus 36 Inches)

Source: M&N, 2017

Figure 3.15-7: 1% Annual Flood Hazard Area plus 66 Inches (High Estimate of Sea-Level Rise by 2100)

In addition to sea-level rise, other shoreline processes would affect the future sea level at the project site properties. Substantial shoaling has occurred well offshore of the present shorelines of the project site properties in response to the construction of Pier 98 and Heron's Head Park: 1–2 feet of shoaling in the nearshore areas of the India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties since 1954 and 3–4 feet of shoaling since 1954 in part of the India Basin Open Space area. Long-term shoaling rates in most of India Basin generally range between 0 and 2 inches per year.

Sedimentation also occurs in India Basin, with long-term rates of 0–2 inches per year for the shallow areas and 2–4 inches per year for the deeper portions farther offshore. These sedimentation rates would be expected to continue, although sediment supply in the Bay has been greatly reduced in recent decades, so future sedimentation rates are likely on the low end of this range.

Although these other processes would also occur in conjunction with sea-level rise in the future and may lessen the increase in shoreline elevation (caused by sea-level rise), the following analysis employs an elevation-increase approach to sea-level rise flooding effects as a worst-case flooding scenario.

As described under Impact HY-5, the proposed project and variant 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. Although in-water and shoreline facilities such as piers, docks, and beaches would be inundated by sea level rise, these facilities would not alter wave/water circulation and flows and would not promote substantial shoreline erosion. Other facilities would also be inundated by sea level rise, including paths, an ADA-accessible ramp, artifact area, grassy areas, wetlands, and a beach deck. These facilities are primarily flat and would not channelize sea-level rise waters and propel water further up in elevation during storm surges, resulting in additional areas of or more severe flooding.

Overall, although some project features at the project site properties may be inundated by sea-level rise, the proposed project or variant 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.

For a discussion of impacts of future sea-level rise on habitats (e.g., mudflat, low marsh, high marsh, transition zone, and upland), see Section 3.14, "Biological Resources."

India Basin Shoreline Park Property

Facilities at the India Basin Shoreline Park property that would be inundated by 2050 as a result of sea-level rise include the pier, the dock/platform, the beach, portions of some pedestrian paths, and a portion of the Marineway path. The pier would be both fixed and floating and the dock/platform would be floating. The fixed pier and Marineway path would be sited and designed such that sea-level rise would not affect the planned uses over their 50-year design life. Beyond the 50-year design life of the pier and path, future project designs would need to incorporate the appropriate sea level at the time into design to address these anticipated effects. The floating dock/platform would be secured via fixed guide piles, which would allow the dock/platform to float as sea level rises and during storm surges (Devick, pers. comm., 2016). Based on the elevation of the 1 percent annual flood hazard area in combination with the high estimate of sea-level rise by 2050, additional portions of pedestrian paths and a larger portion of the Marineway would be temporarily inundated.

Facilities at the India Basin Shoreline Park property that would be inundated by 2100 as a result of sea-level rise include the pier, the dock/platform, beach, portions of some pedestrian paths, and a portion of the Marineway path. It is presumed that, as described above, the dock/platform would float above the rising sea level/storm surge, and that the fixed pier and Marineway path may need additional design changes to accommodate sea-level rise. Based on the elevation of the 1 percent annual flood hazard area in combination with the high estimate of sea-level rise by 2100, the kayak concessions, portions of the Bay Trail near the southern shoreline, the parking area, a larger portion of the Marineway, and additional portions of the pedestrian paths would be temporarily inundated.

Under any of the four sea-level rise scenarios, no inhabited structures at the India Basin Shoreline Park property would be inundated by sea-level rise. However, a few recreational facilities at this property would be inundated: the Marineway path, the beach, portions of pedestrian paths, and the fixed pier.

900 Innes Property

Facilities at the 900 Innes property that would be inundated by 2050 as a result of sea-level rise include the ADA-accessible ramp, the Bay Trail, the pier/floating docks, and part of the India Basin Scow Schooner Boatyard artifact area. The pier/docks would be secured via fixed guide piles, which would allow the pier/docks to float higher as sea level rises and during storm surges. The ADA-accessible ramp has been designed to accommodate sea-level rise projections over the 50-year design life and could be adapted in the future to address higher sea-level rise (Devick, pers. comm., 2016). The artifact area could be relocated uphill or into one of the buildings. The Bay Trail could also be relocated slightly uphill. Based on the elevation of the 1 percent annual flood hazard area in combination with the high estimate of sea-level rise by 2050, the existing concrete dock and a larger portion of the artifact area would be temporarily inundated.

Facilities at the 900 Innes property that would be inundated by 2100 as a result of sea-level rise include the pier/floating docks, the existing concrete dock, the ADA-accessible ramp, the Bay Trail, and most of the India Basin Scow Schooner Boatyard artifact area. As stated above, it is presumed that the pier and floating docks would float above the rising sea level. In conjunction, the existing concrete pier would need to be elevated, replaced, or partially removed. As described above, the artifact area could be relocated uphill or into one of the buildings and the Bay Trail could be relocated uphill. Based on the elevation of the 1 percent annual flood hazard area in combination with the high estimate of sea-level rise by 2100, an additional portion of the existing concrete dock and artifact area would be temporarily inundated along with some stairs, basically the area up to the base of the shop building on either side of the building.

Under any of the four sea-level rise scenarios, no inhabited structures at the 900 Innes property would be inundated by sea-level rise. However, a few recreational facilities at this property would be inundated: the ADA-accessible ramp, the Bay Trail, the artifact area, and the concrete pier.

India Basin Open Space Property

Facilities at the India Basin Open Space property that would be inundated by 2050 as a result of sea-level rise include grassy areas, wetlands, the boardwalk/pedestrian paths, beach and beach deck, and the eastern end of the Bay Trail where it connects to adjacent property. Based on the elevation of the 1 percent annual flood hazard area in combination with high estimate of sea-level rise by 2050, these same facilities could be temporarily inundated,

as would most of the entire site, including a cafe, overlook, stair access to the shoreline/boardwalk, sundeck, outdoor seating, and the human-powered boat launch.

Facilities at the India Basin Open Space property that would be inundated by 2100 as a result of sea-level rise include grassy areas, wetlands, the boardwalk/pedestrian paths, beach and beach deck, and the eastern end of the Bay Trail where it connects to adjacent property. At the elevation of sea-level rise by 2100, most of the open space area would be inundated. Based on the elevation of the 1 percent annual flood hazard area in combination with the high estimate of sea-level rise by 2100, the entire property would be temporarily inundated, including a cafe, overlook, stair access to the shoreline/boardwalk, sundeck, outdoor seating, and the human-powered boat launch.

Under any of the four sea-level rise scenarios, no inhabited structures at the India Basin Open Space property would be inundated by sea-level rise. However, a few recreational facilities at this property would be inundated: the boardwalk/pedestrian paths, the beach deck, and the eastern end of the Bay Trail where it connects to adjacent property.

700 Innes Property

Under the proposed project or variant, no facilities at the 700 Innes property would be inundated by 2050 as a result of sea-level rise. Based on the elevation of the 1 percent annual flood hazard area in combination with the high estimate of sea-level rise by 2050, some pedestrian paths, wetland areas, and a portion of the Bay Trail connecting to the 900 Innes property would be temporarily inundated.

Facilities at the 700 Innes property that would be inundated by 2100 as a result of sea-level rise include some pedestrian paths. Based on the elevation of the 1 percent annual flood hazard area in combination with the high estimate of sea-level rise by 2100, additional pedestrian paths, grassy areas, and a portion of the Bay Trail connecting to the 900 Innes property would be temporarily inundated.

Under any of the four sea-level rise scenarios, no inhabited structures at the 700 Innes property would be inundated by sea-level rise. However, a few recreational facilities at this property would be inundated, including some pedestrian paths and a portion of the Bay Trail.

Overall Operational Impact Conclusion

Although the project site would be subject to flooding from sea level rise, the proposed project and variant 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. Therefore, under either the proposed project or variant, the operational impact would be *less than significant.* No mitigation measures are necessary.

3.15.4 Cumulative Impacts

Impact-C-HY-1: The proposed project and variant, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project site, would substantially contribute to cumulative impacts related to hydrology and water quality. ***(Less than Significant with Mitigation)***

The geographic scope for cumulative impacts related to hydrology and water quality includes those areas in the project vicinity that could be subject to flooding by 2100 (MHHW plus 77 inches of sea-level rise) and drain to the Bay (the SFPUC Islais urban watershed).

Flooding and Inundation

Some of the cumulative development projects, such as the Candlestick Point–Hunters Point Shipyard project (Phases 1 and 2), would be built in areas subject to an increased risk of flooding in the future as a result of sea-level rise, resulting in a significant impact related to flooding. However, in general, existing regulations and requirements require site-specific actions for projects within the 100-year flood zone to protect against increasing flood levels and placing people or structures at risk of flood flows.

All inhabited buildings proposed as part of the proposed project or variant would be located outside of the 100-year flood hazard area. Project operation would include the presence of new piers, docks, beaches, and shoreline modifications within the 100-year flood hazard area; however, these facilities would not be expected to impede or redirect flood flows. As described above, the project site is subject to flooding from tsunami and sea-level rise; however, the proposed project and variant 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. Therefore, the proposed project or variant would not contribute to any potential cumulative impacts related to increased flood levels, and such cumulative impacts would be *less than significant*. No mitigation measures are necessary.

Hydrology, Erosion, and Water Quality

Development of the proposed project, combined with other reasonably foreseeable development projects in the vicinity, could increase the rate and volume of stormwater runoff if there were an overall increase in impervious surfaces. Other development could also affect water quality if the land use changes, the intensity changes, and/or drainage conditions were altered to facilitate the introduction of pollutants to surface waters. Thus, there could be a significant cumulative effect related to hydrology and water quality.

The proposed project or variant would comply with regulatory requirements and would include design measures (separate stormwater infrastructure, swales, bioretention areas) that would reduce significant hydrology and water quality impacts to be *less than significant with mitigation*.

Compliance of the proposed project or variant with construction-related water quality regulations, preparation and implementation of a SWPPP, and implementation of Mitigation Measures M-HY-1a, M-HY-1b, and HY-1c would avoid and minimize water quality impacts during construction because BMPs would be implemented as required to protect receiving water quality and hazardous materials would be handled, stored, and disposed of appropriately. Thus, cumulative impacts related to erosion and water quality during construction of the proposed project or variant would be *less than significant with mitigation*.

Either the proposed project or the variant would be required to comply with all stormwater management policies and regulations adopted by the City and the San Francisco Bay RWQCB (NPDES Construction General Permit; NPDES Phase II MS4 Permit; and the City's Stormwater Management Ordinance, 2015 Subdivision Regulations, and SMR). This would ensure that the proposed project or variant would manage runoff to avoid substantially increasing the rate or amount of surface runoff and to ensure that the discharge of stormwater pollutants to the

Bay would not increase. Compliance with the SMR would ensure that stormwater generated at the project site would be managed on-site to meet performance requirements. Stormwater runoff from either the proposed project or the variant would not be connected to the combined sewer system, and therefore, would not contribute stormwater runoff to the City's combined sewer system. All new development would also have to comply with all stormwater management policies and regulations adopted by the City and the San Francisco Bay RWQCB.

Cumulative development projects would be required to follow regulations similar to those described for the proposed project and variant, including regulations related to water quality, stormwater, wastewater, and construction dewatering. Therefore, the proposed project or variant would not contribute to any potential cumulative impacts related to hydrology or water quality, and such cumulative impacts would be *less than significant*. No mitigation measures are necessary.

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4.0 ALTERNATIVES

4.1 INTRODUCTION

This chapter presents the alternatives analysis as required by CEQA for the proposed India Basin Mixed-Use Development. The chapter identifies a reasonable range of alternatives to the proposed project and the variant, including preservation alternatives, and these alternatives are evaluated for their comparative merits with respect to minimizing adverse environmental effects. For the alternatives selected for detailed analysis, the chapter evaluates the alternatives' impacts against existing environmental conditions and compares the potential impacts of the alternatives with those of the proposed project and the variant. Based on this analysis, this chapter then identifies the environmentally superior alternative. Finally, it describes other alternative concepts that were considered but eliminated from detailed consideration and reasons for their elimination.

State CEQA Guidelines Section 15126.6(a) requires that an EIR evaluate "a range of reasonable alternatives to the project, or the location of the project, which would feasibly attain most of the basic project objectives but would avoid or substantially lessen any of the significant effects, and evaluate the comparative merits of the alternatives." An EIR need not consider every conceivable alternative to a proposed project. Rather, it must consider a range of potentially feasible alternatives governed by the "rule of reason" to foster informed decision-making and public participation (State CEQA Guidelines Section 15126.6[f]).

State CEQA Guidelines Sections 15126.6(f)(1) and 15126.6(f)(3) state that "among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)" and that an EIR "need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative." The final determination of feasibility will be made by project decisionmakers based on substantial evidence in the record.

4.2 ALTERNATIVES SELECTED FOR DETAILED ANALYSIS

Based on the environmental analyses in this EIR, the City has determined that the proposed project or variant on its own and/or in conjunction with cumulative development in southeastern San Francisco would result in significant unavoidable impacts related to cultural resources, transportation and circulation, noise, wind, and air quality. For other significant impacts that are reduced to less than significant with mitigation, please refer to the Summary chapter and Chapter 3.0, "Environmental Setting and Impacts."

Transportation and Circulation Impacts:

- Cumulative transportation impacts related to transit delay due to increased round-trip transit travel time.

Cultural Resources Impacts:

- Project elements may, depending on final project design, negatively affect the integrity of setting, design, materials, workmanship, feeling, and association to such a degree that the India Basin Scow Schooner

Boatyard Vernacular Cultural Landscape would no longer remain eligible for listing in the California Register of Historical Resources (CRHR).

Noise Impacts:

- Project-level ambient noise impacts during operation, including surface transportation sources, on sensitive receptors located off site along roadways.
- Cumulative noise impacts on sensitive receptors located off site along roadways.

Air Quality Impacts

- Project-level emissions of criteria air pollutants and precursors during construction, operation, and overlapping construction and operational activities.
- Project-level emissions that could expose sensitive receptors to substantial pollutant concentrations.
- Cumulative regional air quality and health risk impacts

Wind Impacts:

- Project-level wind impacts that would affect public areas.

The alternatives selection process first considered potential project changes that could avoid or lessen some of the significant and unavoidable impacts listed above. Alternative project options were then screened for their feasibility and their ability to meet most of the project sponsors' objectives. The process resulted in four alternatives that were determined to represent a reasonable range of alternatives, in addition to the no project alternative. The following alternatives are analyzed in this chapter:

- **No Project Alternative:** As required by State CEQA Guidelines Section 15126.6(e), the No Project Alternative is evaluated to allow decision-makers to compare the environmental effects of approving the proposed project with the effects of not approving the project. Under this alternative, the project site would remain in its current condition and no new development would occur. There would be no construction and no provision of new residential, commercial (retail, office, research and development [R&D]), and recreational uses.

- **Code Compliant Alternative:** This alternative was selected because of its potential to reduce wind impacts and to demonstrate what is allowable under existing land use controls at the site. The purpose of choosing this alternative is to allow decision-makers to compare the environmental effects of approving the proposed project or the variant with development that would be consistent with existing zoning on the site. The same type of recreational and commercial development and associated parking and access would occur at the India Basin Shoreline Park and 900 Innes properties under the Code Compliant Alternative as under the proposed project or variant, because the proposed development on these two properties has been designed to be code compliant. The Code Compliant Alternative would include residential and commercial (retail, office, and R&D) uses on the 700 Innes property; however, under this alternative, the 700 Innes property would include more overall built square footage, which would be closer to the maximum development allowable by the San Francisco Planning Code (Planning Code). Under this alternative, the proposed heights of the structures on the 700 Innes property would be lower than under the proposed project or variant. The India Basin Open

Space and 700 Innes properties would have a 40-foot height limit with no bulk restriction, which would increase the total land coverage (i.e., total building footprint) of the 700 Innes property to 13.3 acres or 579,348 gross square feet (gsf).

- **Reduced Development Alternative:** This alternative was selected because of its potential to reduce the transportation and circulation, noise, and wind impacts listed above. The Reduced Development Alternative would include the same type of on-land recreational and commercial space and associated parking and access on the India Basin Shoreline Park and 900 Innes properties as under the proposed project or variant; however, the in-water redevelopment would not include a new pier and dock extending from the India Basin Shoreline Park property. The Reduced Development Alternative would include residential, commercial (retail, office, and R&D), institutional/education, parking, and recreational/open space uses on the 700 Innes property, but the total square footage of development would be reduced by approximately 50 percent. Under this alternative, the proposed heights of the structures on the 700 Innes property would be lowered at the proposed tower locations and throughout most of the remaining project site compared to the proposed project or variant.

- **Full Preservation Alternative:** This alternative was selected because of its potential to reduce the cultural resource impact listed above. The Full Preservation Alternative would be similar to the proposed project and variant, but would include the rehabilitation to Secretary of Interior (SOI) Standards of all three buildings (the Shipwright's Cottage, the Boatyard Office Building, and the Tool Shed and Water Tank building) that are significant features of the India Basin Scow Schooner Boatyard and contribute to the boatyard's CRHR eligibility. The Full Preservation Alternative would also propose that plantings and new park furniture would be designed to retain the industrial character of the cultural landscape. Under this alternative, the Griffith Street right-of-way alignment and width would be maintained and would be designed as a stepped path rather than wood stairs.

- **Partial Preservation Alternative:** This alternative was selected because of its potential to reduce the cultural resource impact listed above. The Partial Preservation Alternative would be similar to the proposed project and variant, but would guarantee the retention of the Boatyard Office Building and interpretation of the Tool Shed and Water Tank building, significant features of the India Basin Scow Schooner Boatyard that contributes to the boatyard's CRHR eligibility.

These five alternatives were determined to adequately represent the range of feasible alternatives to the proposed project and variant required under CEQA. They would each lessen significant adverse impacts that were identified for the proposed project and variant.

The five alternatives are presented and analyzed below in Sections 4.3, 4.4, 4.5, 4.6 and 4.7 respectively. Each section presents a description of the alternative and a detailed analysis of its impacts compared to those of the proposed project and variant. The impact analysis is based on the same environmental setting and significance thresholds as presented for each resource topic in Chapter 3.0 and uses the same approach to analysis. The analysis here is generally qualitative relative to the identified impacts of the proposed project and variant. A quantitative transportation and circulation analysis is presented to provide a more refined comparison of the severity of impacts associated with the alternatives relative to those of the proposed project and variant.

In the following discussions of components of the EIR alternatives, the proposed RPD development is described first, followed by the proposed BUILD development. Although RPD owns the India Basin Open Space property, BUILD would design and build this property's project components; therefore, the proposed uses on the India Basin Open Space property are described in the BUILD discussions. Table 4-1 summarizes the proposed project and variant and the components of the EIR alternatives, and Table 4-2 compares the impacts of the proposed project and variant with those of the alternatives.

4.3 NO PROJECT ALTERNATIVE

4.3.1 Overview

The No Project Alternative would involve no construction and no provision of new residential, commercial (retail, office, R&D), and recreational uses. As such, the existing riprap, dilapidated piers, and creosote-treated piles would remain in place on the project site. Furthermore, no hazardous-materials remediation activities and preservation of historic resources would occur at the project site.

Table 4-1: Summary of Proposed Project and Variant and Components of the EIR Alternatives

Proposed Feature	Proposed Project	Variant	No Project Alternative	Code Compliant Alternative	Reduced Development Alternative	Full Preservation Alternative	Partial Preservation Alternative
Residential Space (# of units)	1,240,100 gsf (1,240 units)	417,300 gsf (500 units)	6,935 gsf (4 units)	1,240,100 gsf (1,240 units)	620,000 gsf (620 units)	1,240,100 gsf (1,240 units)	1,240,100 gsf (1,240 units)
Commercial Space—retail, office, research and development	275,330 gsf	1,000,000 gsf	18,162 gsf	738,501 gsf	75,000 gsf	275,330 gsf	275,330 gsf
Institutional/ Educational Space	50,000 gsf	50,000 gsf	0 gsf	50,000 gsf	26,750 gsf	50,000 gsf	50,000 gsf
Parking Space (# of spaces)	679,900 gsf (1,800 spaces)	717,365 gsf (1,932 spaces)	20,340 gsf (113 spaces)	679,900 gsf (1,800 spaces)	360,000 gsf (900 spaces)	679,900 gsf (1,800 spaces)	679,900 gsf (1,800 spaces)
TOTAL BUILT SPACE	**2,245,330 gsf**	**2,184,665 gsf**	**45,437 gsf**	**2,708,501 gsf**	**1,081,750 gsf**	**2,245,330 gsf**	**2,245,330 gsf**
Publicly Accessible Recreation/ Open Space (# of acres)[1]	1,067,220 sq. ft. (24.5 acres)	1,067,220 sq. ft. (24.5 acres)	514,008 sq. ft. (11.8 acres)	618,552 sq. ft. (14.2 acres)	618,552 sq. ft. (14.2 acres)	1,067,220 sq. ft. (24.5 acres)	1,067,220 sq. ft. (24.5 acres)
Zoning Districts	SUD	SUD	M-1, M-2, NC-2, P	M-1, M-2, NC-2, P	SUD	SUD	SUD
Height and Bulk Districts	165-X, OS	165-X, OS	40-X, OS	40-X, OS	75-X, OS	165-X, OS	165-X, OS
Building Heights (# of floors)	160 feet (14 floors)	160 feet (14 floors)	40 feet (4 floors)	40 feet (4 floors)	75 feet (6 floors)	160 feet (14 floors)	160 feet (14 floors)
Building Footprint (# of acres)	422,532 gsf (9.7 acres)	422,532 gsf (9.7 acres)	15,539 gsf (.36 acres)	579,348 (13.3 acres)	422,532 (9.7 acres)	422,532 gsf (9.7 acres)	422,532 gsf (9.7 acres)
# of Bike Spaces	1,240 spaces	500 spaces	0 spaces	1,240 spaces	620 spaces	1,240 spaces	1,240 spaces

Notes: EIR = environmental impact report; gsf = gross square feet; OS = Open Space; M-1 = Light Industrial; M-2 = Heavy Industrial;

NC-2 = Small-Scale Neighborhood Commercial; P = Public; sq. ft. = square feet; SUD = Special Use District

[1] The open space for the No Project Alternative, Code Compliant Alternative, and Reduced Development Alternative is the existing open space of India Basin Shoreline Park and India Basin Open Space; no additional open space would be created.

The existing parks would not be enhanced under the No Project Alternative.

Source: Compiled by AECOM in 2017

Table 4-2: Summary of Impact Conclusions of the EIR Alternatives Compared to the Proposed Project and Variant

	Proposed Project (PP)	Variant (PV)	No Project Alternative	Code Compliant Alternative	Reduced Development Alternative	Full Preservation Alternative	Partial Preservation Alternative
Land Use and Land Use Planning	LTS	LTS	NI (less than PP & PV)	LTS (same as PP & PV)	LTS (same as PP & PV)	LTS	LTS
Aesthetics	LSM	LSM	NI (less than PP & PV)	LTS (less than PP & PV)	LSM (less than PP & PV)	LSM	LSM
Population and Housing	LTS	LTS	NI (less than PP & PV)	LTS (same as PP & PV)	LTS (less than PP; & PV)	LTS	LTS
Cultural Resources	SUM	SUM	NI (less than PP & PV)	SUM	SUM	LSM (less than PP & PV)	LSM (less than PP & PV)
Transportation and Circulation (Cumulative Transit Delay)	SUM	SUM	NI (less than PP & PV)	SUM (greater than PP & PV)	SUM (less than PP & PV)	SUM	SUM
Noise	SUM	SUM	NI (less than PP & PV)	SUM (same as PP & PV)	SUM (less than PP & PV)	SUM	SUM
Air Quality	SUM	SUM	NI (less than PP & PV)	SUM (greater than PP & PV)	SUM (less than PP & PV)	SUM	SUM
Greenhouse Gas Emissions	LTS	LTS	NI (less than PP & PV)	LTS (same as PP & PV)	LTS (less than PP & PV)	LTS	LTS
Wind	SUM	SUM	NI (less than PP & PV)	SUM (less than PP & PV)	SUM (less than PP & PV)	SUM	SUM
Shadow	LTS	LTS	NI (less than PP & PV)	LTS (less than PP & PV)	LTS (less than PP & PV)	LTS	LTS
Recreation	LSM	LSM	NI (less than PP & PV)	LTS (greater than PP & PV)	LTS (less than PP & PV)	LSM	LSM
Utilities and Service Systems	LSM	LSM	NI (less than PP & PV)	LTS (greater than PP & PV)	LSM (less than PP & PV)	LSM	LSM
Public Services	LTS	LTS	NI (less than PP & PV)	LTS (same as PP & PV)	LTS (less than PP & PV)	LTS	LTS
Biological Resources	LSM	LSM	NI (less than PP & PV)	LSM (greater than PP; & PV)	LSM (less than PP & PV)	LSM	LSM

	Proposed Project (PP)	Variant (PV)	No Project Alternative	Code Compliant Alternative	Reduced Development Alternative	Full Preservation Alternative	Partial Preservation Alternative
Hydrology and Water Quality	LSM	LSM	NI (less than PP & PV)	LSM (same as PP & PV)	LSM (same as PP & PV)	LSM	LSM
Hazards and Hazardous Materials	LSM	LSM	NI (less than PP & PV)	LSM (same as PP & PV)	LSM (less than PP; & PV)	LSM	LSM
TOTAL	**N/A**	**N/A**	**Less for 16 topics**	**Less for 3 topics; Same for 7 topics; Greater for 5 topics**	**Less for 15 topics; Same for 1 topic**	**Less for 1 topic; Same for 15 topics**	**Less for 1 topic; Same for 15 topics**

Notes: LSM = less than significant with mitigation; LTS = less than significant; N/A = not applicable; NI = no impact; PP = proposed project; PV = variant; SUM = significant and unavoidable with mitigation
Source: Compiled by AECOM in 2017

4.3.2 Impacts of the No Project Alternative

Land Use and Land Use Planning

Under the No Project Alternative, each of the project site properties would remain in its existing condition. No new development would occur on any of the properties. No amendments to the *San Francisco General Plan* (General Plan), Planning Code text, or zoning map would be required, and the existing development controls over the site would remain in place. Because no new private development would be constructed on-site, the No Project Alternative would not need for a trust settlement or exchange agreement pursuant to the Public Trust. Similarly, a San Francisco Bay Conservation and Development Commission Major Permit and an amendment to the *San Francisco Bay Plan* would not be needed.

The No Project Alternative would not physically divide an existing community by constructing a physical barrier to neighborhood access or removing an existing means of access. The No Project Alternative would not result in any changes on the project site that would conflict with land use plans, policies, or regulations adopted for the purpose of mitigating or avoiding an environmental effect. Compared to the proposed project or variant, which would result in less-than-significant impacts, the No Project Alternative would not result in any project-level impacts and would not contribute to any cumulative impact related to land use and land use planning.

Aesthetics

Under the No Project Alternative, no new development would occur on the project site. The existing India Basin Shoreline Park and India Basin Open Space would not be enhanced. The San Francisco Bay Trail (Bay Trail) would continue to traverse a portion of the project site, but a new connection to and through a different portion of the project site would not be implemented. Riprap along the shoreline would remain in place, and no shoreline enhancements would occur. Scenic vistas and the visual quality of the area would not be altered. Compared to the proposed project or variant, which would result in less-than-significant impacts with mitigation, the No Project Alternative would not result in any project-level impacts and would not contribute to any cumulative impact related to aesthetics.

Population and Housing

Under the No Project Alternative, the number of existing housing units, residents, and employees on the project site would not change. There would be no construction of new residential or commercial uses on the project site, and no displacement of existing residents or existing businesses would occur. Compared to the proposed project or variant, which would result in less-than-significant impacts, the No Project Alternative would not result in any project-level impacts and would not contribute to any cumulative impact related to population and housing.

Cultural Resources

Under the No Project Alternative, existing archeological resources on the project site would not be affected. Because the No Project Alternative would not result in any excavation or ground disturbance, there would not be any disturbance of potential archeological resources, including the two identified buried ships on the property, or of potential tribal cultural resources or human remains that may be present. Compared to the proposed project or variant, which would result in less-than-significant impacts with mitigation, the No Project Alternative would not result in any project-level impact or contribute to any cumulative impact related to archeological resources.

Under the No Project Alternative, existing historic architectural resources on the project site would not be altered, rehabilitated, or demolished. Compared to the proposed project or variant, which would result insignificant and unavoidable impacts with mitigation, the No Project Alternative would not result in any project-level impacts and would not contribute to any cumulative impact related to historic architectural resources.

Transportation and Circulation

Under the No Project Alternative, existing conditions on the project site would not change. The existing street grid and other features of the transportation network—including roadway, transit, bikeway, and pedestrian facilities; loading and parking accommodations; and emergency vehicle access—would remain as they are now. There would also be no new development on the project site that would result in new vehicle, transit, bicycle, or pedestrian trips. Compared to the proposed project or variant, which would result in less-than-significant impacts with mitigation, the No Project Alternative would not result in any project-level impacts and would not contribute to any cumulative impact related to transportation and circulation – specifically cumulative transit delay.

Noise

Under the No Project Alternative, no new development would occur on the project site. There would be no changes on the site that would result in new sources of noise. Because no new noise sources would result under the No Project Alternative, *no impact* on ambient noise conditions would occur. For this reason, the No Project Alternative would avoid the significant noise impacts that would result from implementation of the proposed project or variant, including significant and unavoidable construction and traffic-related noise impacts.

Air Quality

Under the No Project Alternative, existing conditions on the project site would not change. There would be no new development on the site that would result in new emissions of criteria air pollutants or toxic air contaminants. Compared to the proposed project or variant, which would result in significant and unavoidable impacts with

mitigation for criteria pollutants and the health risk assessment, the No Project Alternative would not result in any project-level impacts and would not contribute to any cumulative impact related to air quality or health risk. Mitigation measures to offset construction and operational emissions would not be required under the No Project Alternative.

Greenhouse Gas Emissions

Under the No Project Alternative, no new development would occur on the project site. There would be no changes to existing conditions that would result in new sources of greenhouse gas (GHG) emissions. Compared to the proposed project or variant, which would result in less-than-significant impacts, the No Project Alternative would result in no impact related to GHG emissions.

Wind

Under the No Project Alternative, existing wind conditions at the project site would not change. The No Project Alternative would not result in the construction of any new buildings, structures, or landscapes that would alter existing wind currents or conditions. Compared to the proposed project or variant, which would result in significant and unavoidable impacts with mitigation, the No Project Alternative would not result in any project-level impacts and would not contribute to any cumulative impact related to wind.

Shadow

Under the No Project Alternative, no new shadows would be cast on the project site. The No Project Alternative would not result in the construction of any new buildings, structures, or landscapes that would cast a shadow, and therefore would not change existing sunlight conditions on nearby open spaces or publicly accessible features or sidewalks. Compared to the proposed project or variant, which would result in less-than-significant impacts, the No Project Alternative would not result in any project-level impacts and would not contribute to any cumulative impact related to shadow.

Recreation

Under the No Project Alternative, existing conditions on the project site would not change. There would be no new development that would increase demand for recreation facilities or cause or accelerate the physical deterioration of such facilities. Compared to the proposed project or variant, which would result in less-than-significant impacts, the No Project Alternative would not result in any project-level impacts and would not contribute to any cumulative impact related to recreation.

Utilities and Service Systems

With no new development at the site under the No Project Alternative, existing water, wastewater, and stormwater facilities would remain in place and demand for the City's wastewater or potable water facilities would not increase. The No Project Alternative would not exceed wastewater treatment requirements; would not result in the construction of new water, wastewater, or stormwater drainage treatment facilities; and would not require new or expanded water supply resources or entitlements. Compared to the proposed project or variant, which would

result in less-than-significant impacts, the No Project Alternative would not result in any project-level impacts and would not contribute to any cumulative impact related to utilities and service systems.

Public Services

Under the No Project Alternative, the project site would remain in its existing condition. No development or improvements would occur on the site. Because no new residents, employees, or visitors would be added to the project site, demand on public service providers, including the San Francisco Police Department (SFPD), San Francisco Fire Department (SFFD), San Francisco Unified School District (SFUSD), and San Francisco Public Library (SFPL) would remain similar to current demand. The improvements to emergency vehicle access through the site that would be implemented under the proposed project and variant would not occur under the No Project Alternative. The school that would be constructed under the proposed project and variant would not be constructed under the No Project Alternative. Compared to the proposed project or variant, which would result in less-than-significant impacts, the No Project Alternative would not result in any project-level impacts and would not contribute to a cumulative impact related to public services.

Biological Resources

Under the No Project Alternative, existing conditions on the project site would not change. There would be no new development that could affect special-status species, riparian habitats, sensitive natural communities, wetlands, or migratory wildlife corridors. Compared to the proposed project or variant, which would result in less-than-significant impacts with mitigation, the No Project Alternative would not result in any project-level impacts and would not contribute to a cumulative impact related to biological resources.

Hydrology and Water Quality

The No Project Alternative would not include any development on the project site, so waste discharge, drainage patterns, or surface runoff would not change. Nothing new would be constructed within the 100-year flood hazard area that would impede or redirect water flows. Compared to the proposed project or variant, which would result in less-than-significant impacts with mitigation, the No Project Alternative would not result in any project-level impacts and would not contribute to any cumulative impact related to hydrology and water quality.

Hazards and Hazardous Materials

Under the No Project Alternative, existing conditions on the project site would not change. Contaminated soil and groundwater underlying the project site would not be remediated. There would be no new development on the project site that would involve the transport, use, or disposal of hazardous materials; interfere with an adopted emergency response plan or emergency evacuation plan; or expose structures or people to significant risk of loss, injury, or death involving fires. Compared to the proposed project or variant, which would result in less-than-significant impacts with mitigation, the No Project Alternative would not result in any project-level impacts and would not contribute to any cumulative impact related to hazards and hazardous materials.

Other Topics

The Notice of Preparation/Initial Study (NOP/IS) and public scoping process concluded that the proposed project or variant would have no impacts or less-than-significant impacts in the following analysis areas:

- Geology and Soils
- Mineral and Energy Resources
- Agriculture and Forestry Resources

The No Project Alternative would result in no impacts related to any of the above-listed environmental topics, because this alternative would result in no changes to existing site conditions with respect to these topics.

4.4 CODE COMPLIANT ALTERNATIVE

Overall, the Code Compliant Alternative would include the same amount of residential, and parking uses and nearly the same institutional/educational gsf, as under the proposed project, which includes 1,240,000 gsf of residential (1,240 units), 50,000 gsf of school space, and 679,900 gsf (1,800 spaces) of parking, but with an increase to 738,501 gsf of commercial space (including retail, office, and R&D) and a decrease to 618,552 square feet (sq. ft.) of recreational/open space for a total of approximately 2,708,501 gsf under this alternative. As a comparison the variant would have 417,300 gsf of residential (500 units), 50,000 gsf of school space, and 717,365 gsf (1,932 spaces) of parking, 1,000,000 gsf of commercial space (including retail, office, and R&D) and 1,067,220 square feet (sq. ft.) of recreational/open space for a total of approximately 2,184,665 gsf.

The Code Compliant Alternative meets all applicable provisions of the Planning Code. Under this alternative, the project site would remain within the 40-X and Open Space (OS) height and bulk districts and the Light Industrial (M-1), Heavy Industrial (M-2), Small-Scale Neighborhood Commercial (NC-2), and Public (P) zoning districts, as set forth below.

4.4.1 San Francisco Recreation and Parks Department Development

India Basin Shoreline Park and 900 Innes Properties

The same recreational and commercial development and associated parking and access would occur at the India Basin Shoreline Park and 900 Innes properties under the Code Compliant Alternative as under the proposed project, because the proposed development on these two properties has been designed to be code compliant (Figure 4-1a). Bicycle circulation improvements would also be implemented, including the Bay Trail extension through the India Basin Shoreline Park and 900 Innes properties as well as a Class I bikeway connecting to bikeways on adjacent streets. The India Basin Shoreline Park and 900 Innes properties are currently zoned M-1, NC-2, and P, and are within the 40-X and OS height and bulk districts; therefore, development heights would be limited to 40 feet (Figure 4-2a).

Under the Code Compliant Alternative, similar to the proposed project, the existing dilapidated piers and creosote-treated piles in tidal areas connected with the India Basin Shoreline Park and 900 Innes properties would be removed and, in some cases, replaced. Existing riprap would be removed, existing tidal marsh wetlands would be partially restored, and new additional tidal marsh wetlands would be created along the shoreline of the India

Basin Shoreline Park and 900 Innes properties. Furthermore, similar to the proposed project, hazardous-materials remediation activities and preservation of historic resources would occur on the India Basin Shoreline Park and 900 Innes properties.

4.4.2 BUILD Development

India Basin Open Space and 700 Innes Properties

Like the proposed project, the Code Compliant Alternative would include no structures on the India Basin Open Space property, which is code compliant. The proposed uses at the 700 Innes property under this alternative would not require changes to the development controls, such as increases in permitted height through amendments to the General Plan, Planning Code text, and zoning map.

The Code Compliant Alternative would include residential and commercial (retail, office, and R&D) uses on the 700 Innes property; however, under this alternative, the 700 Innes property would include more built square footage (Figure 4-1b), which is closer to the maximum development that can be accommodated on the property and that is allowable by the Planning Code.

The proposed heights of the structures on the 700 Innes property would be lower under this alternative than under the proposed project. The India Basin Open Space and 700 Innes properties are located within the 40-X and OS height and bulk districts; therefore, the Code Complaint Alternative would have a 40-foot height limit with no bulk restriction (Figure 4-2b). This would increase the total land coverage (i.e., total building footprint) of the 700 Innes property from 9.7 acres (422,532 gsf) under the proposed project to 13.3 acres or 579,348 gsf.

Because the 700 Innes property could receive more development in terms of total land coverage, the open space on this property would be reduced from 10.3 acres to 5.3 acres. The proposed project includes an approximately 5.63-acre open space, referred to as the “Big Green,” on the 700 Innes property that would be eliminated under the Code Compliant Alternative, along with a reduction of the other open space areas on the 700 Innes property.

Source: GGN, 2017

Figure 4-1a **Code Compliant Alternative Site and Land Use Plan (India Basin Shoreline Park and 900 Innes Properties)**

Source: SOM, 2017

Figure 4-1b **Code Compliant Alternative Site and Land Use Plan (India Basin Open Space and 700 Innes Properties)**

Source: GGN, 2017

Figure 4-2a **Code Compliant Alternative Building Heights (India Basin Shoreline Park and 900 Innes Properties)**

Source: SOM, 2017

Figure 4-2b **Code Compliant Alternative Building Heights (India Basin Open Space and 700 Innes Properties)**

Like the proposed project, the Code Compliant Alternative would include transportation and circulation improvements including new and reconstructed streets, sidewalks, and pathways. However, the layout of the streets would be changed from the pattern presented under the proposed project to a more-simplified grid pattern with the primary egress/ingress to the 700 Innes property occurring on Innes Avenue at Griffith Street, Arelious Walker Drive, and Earl Street. Hudson Avenue, in its currently planned configuration, would contain a simplified painted Class 2 bike lane. Earl Street, Arelious Walker Drive, and Griffith Street would all function as two-way local streets with a moderate amount of on-street parking and Class 3 bike facilities to enable access to India Basin Shoreline Park. None of the bike lanes would be separated and they would all travel through the built environment. The Bay Trail would remain unchanged through the India Basin Open Space property. Like the proposed project, this alternative would also include a transportation demand management (TDM) program, although the on-site Class 2 bike facilities may be limited because of space constraints. Similar to the proposed project, hazardous-materials remediation would occur on the 700 Innes property under the Code Compliant Alternative.

The Code Compliant Alternative would leave the 6.2-acre India Basin Open Space property in its existing condition with wetlands and a pedestrian pathway traversing the site along the Bay waterfront.

4.4.3 Impacts of the Code Compliant Alternative

Land Use and Planning

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Under the Code Compliant Alternative, development across all of the project site properties would comply with all applicable provisions of the Planning Code. The project site would remain within the 40-X and OS height and bulk districts and the M-1, M-2, NC-2, and P zoning districts. No amendments to the General Plan, Planning Code text, or zoning map would be required under this alternative, and the existing development controls over the site would remain in place. Because new private development would be constructed on portions of the project site that could be subject to the Public Trust Doctrine, this alternative would need a trust settlement or exchange agreement pursuant to the Public Trust, similar to the proposed project or variant.

Because the proposed development would be substantially similar under the Code Compliant Alternative, the proposed project, and the variant, the Code Compliant Alternative would result in similar impacts on land use and land use planning as the proposed project or variant. Because the India Basin Open Space property would not be improved, the connectivity along the shoreline envisioned by the Recreation and Open Space Element and the *Hunters Point Area Plan* would not be implemented as fully as under the proposed project or variant. However, the Bay Trail would still be extended, allowing recreational connectivity throughout the properties to other open space that would be provided. The publicly accessible recreation and open space would be reduced from 24.5 acres under the proposed project or variant to 11.8 acres, reducing the available amenities on the 700 Innes property while receiving more development in terms of total land coverage. The Code Compliant Alternative would eliminate the approximately 5.63-acre open space referred to as the "Big Green," located on the 700 Innes property. Overall, compared to the proposed project or variant, which would result in less-than-significant impacts, the Code Compliant Alternative would likewise result in *less-than-significant* project-level impacts and the cumulative impact related to land use and planning would be *less than significant*. No mitigation measures are necessary.

Aesthetics

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

The same recreational and commercial development would occur at these properties under the Code Compliant Alternative as under either the proposed project or the variant. Buildings on these properties would be a maximum of 25 feet tall, the same as under both the proposed project and the variant. The 900 Innes property would be left in its existing condition with wetlands and a pedestrian pathway traversing the site along the Bay waterfront, and the 700 Innes property would include shorter buildings with a maximum height of 40 feet, with no bulk restriction. Because the 700 Innes property could receive more development in terms of total land coverage, the open space on this property would be reduced and the Big Green would be eliminated.

Because of the reduction in building heights, the visibility of scenic resources and vistas from public vantage points would be better than under either the proposed project or the variant. In addition, impacts on the visual character and quality would likely be less than under either the proposed project or the variant because buildings fronting Innes Avenue would be more uniform in height.

Compared to the proposed project or variant, which would result in less-than-significant impacts, the Code Compliant Alternative would similarly result in *less-than-significant* project-level impacts. The cumulative impact related to aesthetics would also be *less than significant*. No mitigation measures are necessary.

Population and Housing

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

The impacts of the Code Compliant Alternative on the population and housing conditions at these properties would be similar to the impacts of the proposed project or variant. This alternative would have the same recreational amenities and minimal commercial development on the India Basin Shoreline Park and 900 Innes properties as the proposed project and variant.

Under this alternative, the India Basin Open Space would be left in its existing condition with fewer improvements to recreational amenities, and the property would not be enhanced. This would result in fewer temporary construction jobs than under either the proposed project or the variant. At the 700 Innes property, the Code Compliant Alternative would include the same number of housing units as the proposed project, but more commercial space than the proposed project.

The Code Compliant Alternative would displace the same number of people as both the proposed project and the variant, and direct population and housing growth under this alternative would be similar to the proposed project. The variant would include 740 fewer residential units than the Code Compliant Alternative, but substantially more commercial space than the Code Compliant Alternative.

On balance, the Code Compliant Alternative's impacts on population and housing would be similar to those of either the proposed project or the variant, which would have a less-than-significant impact, and the Code Compliant Alternative would have a *less-than-significant* project-level and cumulative impact. The population

and housing growth in this area is planned for in the *Bayview Hunters Point Area Plan*, and thus, reflects the City's planned future for this area of the City.

Cultural Resources

Historic Architecture

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

There are no architectural historical resources on the India Basin Shoreline Park or the India Basin Open Space properties; thus, the discussion below focuses on architectural historical resources located on the 900 Innes and 700 Innes properties.

The Code Compliant Alternative would have an equal potential to the proposed project or variant for a significant impact on the Shipwright's Cottage, the India Basin Scow Schooner Boatyard, and 702 Earl Street, because construction would similarly result in a change of use/setting of the site, and the removal of contributing and noncontributing character-defining features of the cultural landscape would be the same. The project elements of the Code Compliant Alternative, including the potential demolition of the Boatyard office building, would negatively affect the integrity of setting, design, materials, workmanship, feeling, and association to such a degree that the India Basin Scow Schooner Boatyard would no longer remain eligible for listing in the CRHR.[1] This impact, if present, would be *significant and unavoidable*. Because of this loss of CRHR eligibility, this impact cannot be reduced to a less-than-significant level. Nonetheless, the Code Compliant Alternative would incorporate Mitigation Measures M-CR-1a, M-CR-1b, M CR-1c, M CR-1d, and M CR-1e to lessen the severity of the impact of the Code Compliant Alternative on the India Basin Scow Schooner Boatyard, but not to the degree that the resource would remain eligible for listing in the CRHR. Thus, the impact of the Code Compliant Alternative on the built environment at the India Basin Scow Schooner Boatyard (900 Innes property) would be significant and unavoidable with mitigation.

In addition, the relocation and rehabilitation of 702 Earl Street would not materially impair the significance of the building to the extent that it would no longer be eligible for listing in the CRHR. The project proponent would meet the Secretary of the Interior's Standards for Rehabilitation of the building to retain and preserve the building's character-defining features. For these reasons, the relocation of 702 Earl Street would not substantially affect the building's integrity of setting because it would be within the same general location as its historical context and the spatial relationship of the original building location along the shoreline before the infill of the 1960s would be largely restored. Compared to the proposed project or the variant, which would result in an impact of *significant and unavoidable with mitigation*, the project-level and cumulative impacts of the Code Compliant Alternative related to historic architecture would also be *significant and unavoidable with mitigation*.

[1] If final project design retains the Boatyard office building along with the other contributing elements that are to remain under the Code Compliant Alternative there is the potential that the India Basin Scow Schooner Boatyard would remain eligible for listing in the CRHR

Archeological Resources

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

The Code Compliant Alternative would have an equal potential to the proposed project or variant for a significant impact on archeological resources on the India Basin Shoreline Park and 900 Innes properties, but a lesser impact on the India Basin Open Space property. The amount of ground-disturbing activities on the India Basin Shoreline Park and 900 Innes properties would be the same under the Code Compliant Alternative as under either the proposed project or the variant, but would be less on the India Basin Open Space property because this property would not be improved. The Code Compliant Alternative would similarly implement Mitigation Measures M-CR-2a ("Undertake an Archeological Testing Program"), M-CR-3a ("Implement Legally Required Measures in the Event of Inadvertent Discovery of Human Remains"), and M-CR-4a ("Implement Tribal Cultural Resources Interpretive Program"), which would reduce impacts on archeological resources, including the two buried ships.

700 Innes Property

The Code Compliant Alternative would have greater potential for impacts on archeological resources on the 700 Innes property than the proposed project or the variant because it would involve a greater amount of proposed ground-disturbing activities on this property. However, implementation of Mitigation Measures M-CR-1b ("Undertake an Archeological Testing Program") and M-CR-1c ("Implement Legally Required Measures in the Event of Inadvertent Discovery of Human Remains") would reduce the Code Compliant Alternative's project-level impact on archeological resources, if present.

Overall Impact Conclusion for Archeological Resources

Compared to the proposed project or variant, which would result in impact conclusions of less than significant with mitigation, the Code Compliant Alternative's impacts related to archeological resources would be the same as those of the proposed project or the variant. The project-level and cumulative impacts of this alternative would be *less than significant with mitigation*.

Transportation and Circulation

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Under the Code Compliant Alternative, overall development on the project site would increase by approximately 466,670 gsf (relative to the proposed project) or 527,335 gsf (relative to the variant) to approximately 2,712,000 gsf (Table 4-1). In particular, residential development would be similar to the proposed project, but with 740 dwelling units more than the variant, while commercial space would be about 460,000 sf larger than the proposed project but about 260,000 sf smaller than the variant.

Travel demand by mode and vehicle-trips by direction under the Code Compliant Alternative are summarized in Table 4-4 and Table 4-5, respectively, alongside the corresponding values for the proposed project and the variant. The overall person- and vehicle-trip generation of the Code Compliant Alternative would be substantially higher (26 to 30 percent more) than that of the proposed project due to a larger amount of commercial development, but similar to that of the variant, as shown in Table 4-4. However, the Code Compliant Alternative

would have a balance of inbound and outbound trips that would fall in between that of the proposed project and variant, as shown in Table 4-5.

In particular, peak-direction vehicle-trips (inbound during the weekday a.m. peak hour and outbound during the weekday p.m. peak hour) under the Code Compliant Alternative would fall within the bounds of the corresponding values for the proposed project and variant. The Code Compliant Alternative would, however, generate more vehicle-trips in the reverse-peak directions (outbound during the weekday a.m. peak hour and inbound during the weekday p.m. peak hour) than either the proposed project or the variant, although this difference would only be on the order of approximately 10 percent.

Table 4-4: Project Travel Demand by Mode (Code Compliant Alternative)

Peak Hour and Trip Type	Proposed Project		Variant		Code Compliant Alternative					
							Change from			
	Trips	Mode Share	Trips	Mode Share	Trips	Mode Share	Proposed Project		Variant	
Weekday AM Peak Hour										
Person-trips (total)	3,860	–	5,075	–	5,095	–	+1,235	+32%	+20	+1%
Auto	3,044	79%	4,018	79%	3,978	78%	+934	+31%	-40	-1%
Transit	237	6%	458	9%	452	9%	+215	+91%	-6	-1%
Bike	101	3%	138	3%	121	2%	+20	+20%	-17	-12%
Walk	478	12%	461	9%	544	11%	+66	+13%	+83	+18%
Vehicle-trips (total)	1,865	–	2,612	–	2,546	–	+681	+37%	-66	-3%
Weekday PM Peak Hour										
Person-trips (total)	4,724	–	6,118	–	6,014	–	+1,290	+27%	-104	-2%
Auto	3,372	71%	4,457	73%	4,425	74%	+1,053	+31%	-32	-1%
Transit	302	6%	517	8%	520	9%	+218	+72%	+3	+1%
Bike	103	2%	131	2%	129	2%	+26	+25%	-2	-2%
Walk	947	20%	1,013	17%	940	16%	-7	-1%	-73	-7%
Vehicle-trips (total)	1,969	–	2,734	–	2,705	–	+736	+37%	-29	-1%

Source: San Francisco, 2017a

Table 4-5: Project Vehicle-Trips by Direction (Code Compliant Alternative)

	Weekday A.M. Peak Hour				Weekday P.M. Peak Hour			
	Inbound Vehicle-Trips		Outbound Vehicle-Trips		Inbound Vehicle-Trips		Outbound Vehicle-Trips	
Proposed Project	1,051	56%	814	44%	994	54%	975	46%
Variant	1,906	73%	706	27%	947	35%	1,787	65%
Code Compliant Alternative	1,656	65%	890	35%	1,106	41%	1,599	59%

Source: San Francisco, 2017a

Like the proposed project and variant, the Code Compliant Alternative would include a TDM program and would implement circulation improvements on the project site and in the immediate vicinity, although the proposed street layout would differ slightly from that of the proposed project and variant (Figure 4-1a and Figure 4-1b). Given the development on the site under the Code Compliant Alternative and the overall similarity in person- and vehicle-trip generation to the proposed project and the variant (Table 4-4 and Table 4-5), the Code Compliant

Alternative would result in transportation and circulation impacts similar to those identified for the proposed project and variant.

In particular, the Code Compliant Alternative would result in significant impacts related to overcrowding on local transit services under Existing plus Project Conditions and to passenger loading for the proposed school use. Mitigation Measures M-TR-3P ("Implement Transit Capacity Improvements [Proposed Project]"), M-TR-3V ("Implement Transit Capacity Improvements [Variant]"), and M-TR-8 ("Implement Passenger Loading Strategies for the School") would reduce these impacts to *less than significant with mitigation*. Similar to the proposed project or the variant, the Code Compliant Alternative would also result in a cumulative transit delay impact, which would be mitigated to *less than significant* by implementation of Mitigation Measure M-C-TR-2 ("Implement Transit-Only Lanes"). However, this impact would be *significant and unavoidable*, as the San Francisco Municipal Transportation Agency (SFMTA) cannot commit to implementation of this mitigation measure at this time.

Like the proposed project or the variant, other impacts under the Code Compliant Alternative would be less than significant. As described above, overall person- and vehicle-trip generation would be similar to that under the proposed project or the variant, and the differences in the internal street network would not substantially affect any of the conclusions regarding project or variant impacts.

Noise

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Similar to the proposed project and variant, the Code Compliant Alternative would require removal and/or replacement of existing dilapidated piers and creosote-treated piles in tidal areas connected with the India Basin Shoreline Park and 900 Innes properties, along with removal of existing riprap and the restoration of tidal marsh wetlands.

However, unlike the proposed project or variant, construction activities associated with development of the 700 Innes property may extend over a greater area within the Code Compliant Alternative project boundary, corresponding with the reduction of expected open space acreage. However, with respect to the assessment of construction noise impacts at off-site community noise-sensitive receptors, the anticipated noisiest construction equipment and their distances (from the project boundary) to these receptors would be essentially similar, thus resulting in predicted noise levels that are comparable to those studied for the proposed project and the variant. Hence, implementation of Mitigation Measures M-NO-1a ("Implement Noise Control Measures during Construction") and M-NO-1b ("Implement Noise Control Measures for Pile Driving") would still be required to reduce noise exposures at these studied off-site receptors to less than significant with mitigation. Therefore, the impact conclusion of *less than significant with mitigation* would be the same for the Code Compliant Alternative as for the proposed project and the variant, and likewise, the contribution to a cumulative impact would be *less than significant with mitigation*.

Operation

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Off-site traffic flows (and hence, corresponding increases over existing traffic volumes on roadways in the vicinity of the project) under the Code Compliant Alternative are likely to be the dominant noise sources in the area, which would be similar to the proposed project and the variant based on the anticipated quantity of residential units and available parking spaces as presented in Table 4-1. Increases to the outdoor ambient sound environment caused by these traffic contributions from the Code Compliant Alternative would thus create similar *significant and unavoidable impacts* on nearby noise-sensitive receptors. On this basis, the off-site traffic noise impact conclusion would be the same as that of the proposed project or the variant—significant and unavoidable. As stated in Section 3.6, "Noise," no feasible mitigation measures are available to reduce such transportation noise emissions.

Air Quality

India Basin Shoreline Park and 900 Innes Properties

The same type of recreational and commercial development would occur on the India Basin Shoreline Park and 900 Innes properties under the Code Compliant Alternative as under the proposed project or variant. Therefore, the Code Compliant Alternative would result in similar emissions of criteria pollutants at the India Basin Shoreline Park and 900 Innes properties during construction and operation and similar health risk impacts as the proposed project and variant.

India Basin Open Space Property

The 6.2-acre India Basin Open Space property would be left in its existing condition under the Code Compliant Alternative and no construction would occur. Thus, construction emissions at the India Basin Open Space property would be less under this alternative than under the proposed project or variant. Because no construction would occur at this property under the Code Compliant Alternative, operational uses would not change from existing conditions. There would be no impacts at the India Basin Open Space property related to emissions of particulate matter equal to or less than 2.5 microns in diameter ($PM_{2.5}$) and excess cancer risk because no construction-related or operational activity would occur at this property.

700 Innes Property

The 700 Innes property would include more built square footage under the Code Compliant Alternative than under the proposed project or variant. Because the 700 Innes property would include more development and the open space on this property would be reduced, construction-related emissions would be greater under this alternative than under the proposed project or variant. Similarly, the increased development at the 700 Innes property would generate higher operational emissions from stationary, area, energy, and mobile sources under the Code Compliant Alternative than under the proposed project or variant, as well as an increase in the $PM_{2.5}$ and excess cancer risk impacts relative to the proposed project and variant. The $PM_{2.5}$ impacts would already be significant and unavoidable with mitigation.

Overall Impact Conclusion

Compared to the proposed project or variant, which would result in impacts that would be significant and unavoidable with mitigation, the Code Compliant Alternative's impacts related to air quality would be slightly greater because of the increase in development at the 700 Innes property. Similar to the proposed project and variant, the following mitigation measures would apply to the Code Compliant Alternative:

- M-AQ-1a ("Minimize Off-Road Construction Equipment Emissions")
- M-AQ-1b ("Minimize On-Road Construction Equipment Emissions")
- M-AQ-1c ("Utilize Best Available Control Technology for In-Water Construction Equipment")
- M-AQ-1d ("Offset Emissions Offsets for Construction and Operational Ozone Precursor Emissions"
- M-AQ-1e ("Implement Best Available Control Technology for Operational Diesel Generators")
- M-AQ-1f ("Prepare and Implement Transportation Demand Management")

However, even with implementation of the mitigation measures, like the proposed project and variant, the Code Compliant Alternative could violate an air quality standard, contribute to an existing or projected air quality violation, and cause a cumulatively considerable increase in criteria air pollutants or health risk. Thus, the Code Compliant Alternative would have project-level and cumulative impacts that would be *significant and unavoidable with mitigation*, which would be the same as under the proposed project or variant.

Greenhouse Gas Emissions

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Under the Code Compliant Alternative, similar to the proposed project and variant, the project site properties would be subject to the San Francisco GHG Reduction Strategy's regulations adopted to reduce GHG emissions. Compliance with the applicable regulations would reduce GHG emissions from transportation, energy use, waste disposal, wood burning, and use of refrigerants. Similar to the proposed project or the variant, the renovations associated with the Code Compliant Alternative 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. The project-level and cumulative impacts of the Code Compliant Alternative related to GHG emissions would be *less than significant*, the same as under the proposed project or the variant. No mitigation measures are necessary.

Wind

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

The same recreational and commercial development would occur at the India Basin Shoreline Park and 900 Innes properties under the Code Compliant Alternative as under either the proposed project or the variant. However, the India Basin Open Space would be left in its existing condition with wetlands and a pedestrian pathway traversing the site along the Bay waterfront. Similar to the proposed project and variant, the Code Compliant Alternative would include buildings up to 25 feet tall on the India Basin Shoreline Park, 900 Innes, and India Basin Open

Space properties. Thus, new buildings or structures would not be tall enough to substantially alter wind currents, redirect them downward, or alter ground-level wind conditions.

On the 700 Innes property, the Code Compliant Alternative would include buildings up to 40 feet in height with no bulk restriction. All buildings would be uniform in height, which could improve wind conditions. Typically, shorter buildings with more uniform heights do not create as much wind acceleration as tall buildings surrounded by shorter buildings, which would be present under either the proposed project or the variant. Therefore, conditions at the 700 Innes property would likely be better and less windy under the Code Compliant Alternative than under either the proposed project or the variant. Because no buildings would be more than 100 feet in height, interim hazardous wind conditions would be unlikely during the phased buildout of the Code Compliant Alternative, and Mitigation Measure M-WI-1a ("Improve Interim Hazardous Wind Conditions by Undertaking Supplemental Wind Impact Analyses") would not be applicable to this alternative.

A wind tunnel model was not prepared for the Code Compliant Alternative and quantitative modeling data are not available. Without such quantitative data, the potential exists for wind hazard exceedances to occur on the project site and in adjacent areas during construction and operation of the Code Compliant Alternative. Mitigation Measures M-WI-1b ("Improve Wind Hazard Effects during Construction by Undertaking Temporary Measures") and M-WI-1c ("Reduce Effects of Ground-Level Hazardous Winds through Ongoing Review and Mitigation of Hazardous Wind Impacts") would reduce impacts of the Code Compliant Alternative during construction and operation.

The Code Compliant Alternative's impacts on wind conditions at the project site may be improved compared to the proposed project or the variant due to the overall shorter heights of buildings, but a wind tunnel test was not undertaken for this alternative. However, a supplemental wind technical memorandum, included in Appendix H, stated that based on previous modeling experience and the proposed shorter heights under this alternative, a reduction was possible. Without wind tunnel test results to demonstrate the impact of the Code Compliant Alternative on wind conditions at the project site, not enough information is available to conclude that no wind hazard exceedances would occur, and thus, that the impact would be less than significant. Therefore, the impact of the Code Compliant Alternative on wind conditions at the project site would be the same as the impact of the proposed project or variant, or *significant and unavoidable*.

The cumulative projects listed in Table 3-1 in Chapter 3, "Environmental Setting and Impacts," are more than 1,500 feet away. For this reason, the cumulative projects in combination with the Code Compliant Alternative are not expected to result in a materially different wind effect at public areas in the project vicinity. Therefore, the Code Compliant Alternative would not contribute to a cumulative impact related to wind, and would have the same cumulative impact as the proposed project or the variant, or *less than significant*. No mitigation measures are necessary.

Shadow

India Basin Shoreline Park Property

The same recreational and commercial development would occur at the India Basin Shoreline Park property under the Code Compliant Alternative as under either the proposed project or the variant. Shadows cast by buildings on public open space on the India Basin Shoreline Park property would be the same under this alternative as under

either the proposed project or the variant, because the buildings that could cast shadows would be the same height under this alternative.

900 Innes Property

The same recreational and commercial development would occur at the 900 Innes property under the Code Compliant Alternative as under either the proposed project or the variant; however, buildings with the potential to cast shadows on this property would be a maximum of 40 feet tall. Therefore, shadows cast by buildings would be smaller and shorter in duration under the Code Compliant Alternative than under the proposed project or the variant.

India Basin Open Space Property

The India Basin Open Space would be left in its existing condition with wetlands and a pedestrian pathway traversing the site along the Bay waterfront. Buildings with the potential to cast shadows on the India Basin Open Space, located on the 700 Innes property, would be a maximum of 40 feet tall, which would be substantially shorter than under the proposed project or the variant.

Unlike the proposed project and variant, the Code Compliant Alternative would place buildings within the Big Green area. These buildings, located on the 700 Innes property, would cast additional shadows on the India Basin Open Space. Thus, during the early morning and afternoons at the winter solstice and vernal and autumnal equinoxes, buildings would cast more shadows under the Code Compliant Alternative than under the proposed project or variant. However, the reverse would be the case during the midday hours. At the summer solstice, shadows cast by buildings under the Code Compliant Alternative, the proposed project, and the variant are expected to be limited, and the proposed project or variant would likely have a marginally larger shadow area.

Overall, buildings are expected to cast more shadows on the India Basin Open Space property under the Code Compliant Alternative than under the proposed project or the variant, [because there would be more buildings in closer proximity to the open space,] however the overall building heights across the project site under this alternative are lower at 40 feet, resulting in a smaller shadow effect per building.

700 Innes Property

The Code Compliant Alternative would include buildings up to 40 feet tall on the 700 Innes property and would not include the Big Green, which would be a publicly accessible open space under the proposed project and the variant. With the reduction in building heights, buildings would likely cast smaller shadows under the Code Compliant Alternative than under the proposed project or variant. An exception to this would occur during the summer solstice, when fewer shadows would be cast in the park areas under the proposed project or variant. However, buildings generally cast fewer shadows during the summer solstice than during the winter solstice and the vernal and autumnal equinoxes, so the annual shadow time would not be substantially less under the Code Compliant Alternative.

Overall Impact Conclusion

Overall, buildings would cast more shadows on the India Basin Open Space under the Code Compliant Alternative than under the proposed project or the variant during the early morning and afternoons at the winter solstice and vernal and autumnal equinoxes. During early mornings in the fall, winter, and spring, when shadows would be the greatest, it is anticipated that uses of the park would be more active (walking or jogging) and these uses are less sensitive to sunlight than passive uses (sitting). Therefore, new net shadow would not adversely affect the public's ability to use and enjoy the open space, and similar to the proposed project or the variant, implementation of the Code Compliant Alternative would not create new shadow in a manner that would substantially affect the India Basin Open Space property. The Code Compliant Alternative's impact on public open spaces would be the same as the proposed project or the variant, or *less than significant*. No mitigation measures are necessary.

The cumulative projects listed in Table 3-1 in Chapter 3, "Environmental Setting and Impacts," are more than 1,500 feet away; therefore, the effect of cumulative projects in combination with the Code Compliant Alternative on shadow would be the same as the cumulative effect under the proposed project or variant, or *less than significant*. No mitigation measures are necessary.

Recreation

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Construction

Recreation-related construction impacts of the Code Compliant Alternative for the India Basin Shoreline Park and 900 Innes properties would be the same as those of the proposed project or variant. However, because this alternative would not include new recreational facilities at the India Basin Open Space property and would provide fewer facilities on the 700 Innes property, construction impacts on recreation use and facilities at these properties would be reduced or eliminated compared to the proposed project or variant.

Overall, the construction-related impacts of the Code Compliant Alternative on recreation facilities would be the same as those of the proposed project or the variant, *less than significant.* No mitigation measures are necessary.

Operation

Operational impacts on recreation under the Code Compliant Alternative would be similar to those of the proposed project and the variant. However, this alternative could result in increased use of the recreation facilities at the RPD properties because fewer recreation facilities would be available at the India Basin Open Space and 700 Innes properties. As a result, recreation use by the new and larger on-site population generated by the Code Compliant Alternative would be focused onto fewer facilities, increasing the use of such facilities and resulting in more deterioration and physical degradation of such facilities. The 700 Innes property would receive more development in terms of total land coverage, but the open space on this property would be substantially reduced.

The proposed project and variant would include an approximately 5.63-acre open space, referred to as the "Big Green," on the 700 Innes property. Under the Code Compliant Alternative, there would be no Big Green and

less open space would be provided on the 700 Innes property. The use of the recreational facilities may increase under the Code Compliant Alternative, thus increasing the amount of deterioration and physical degradation. However, such an increase would likely not result in substantial deterioration because the recreation facilities at the India Basin Shoreline Park and 900 Innes properties would be new, and thus, less prone to deterioration and physical degradation. The Code Compliant Alternative would result in *less-than-significant* project-level and cumulative impacts, the same as under the proposed project or the variant. No mitigation measures are necessary.

Utilities and Service Systems

India Basin Shoreline Park and 900 Innes Properties

Impacts on utilities and service systems on these properties would be the same under the Code Compliant Alternative as under the proposed project or variant because similar development would occur under this alternative.

India Basin Open Space Property

No impacts on utilities or service systems would occur at the India Basin Open Space property under the Code Compliant Alternative because development of utility infrastructure, wastewater generation, and use of potable water would not occur on this portion of the site. This would be similar to the proposed project or variant, which would not generate wastewater or create stormwater infrastructure for the India Basin Open Space property. However, under the proposed project and variant, potable water use at the site would be minimal.

700 Innes Property

The building development at the 700 Innes property would be larger under the Code Compliant Alternative than under the proposed project or variant, and thus, would generate additional wastewater. However, this alternative also would likely not result in the exceedance of wastewater requirements because the wastewater generated at the site would represent a very small fraction of the Southeast Treatment Plant's total design treatment capacity. Impacts from wastewater generation during construction would be the same under the Code Compliant Alternative as under the proposed project or variant.

Like the proposed project and variant, the Code Compliant Alternative would require the construction of new water, wastewater, or stormwater drainage facilities, the construction of which could cause environmental effects. However, facilities required for the Code Compliant Alternative would be comparable to those proposed to be constructed as part of the proposed project or the variant.

Additionally, the Code Compliant Alternative would have a higher demand for potable and recycled water than the proposed project or variant because it would develop more square footage in buildings. However, this alternative would likely not require new or expanded water supply resources or entitlements because the increased demand would still meet the San Francisco Public Utilities Commission's (SFPUC's) projections of available potable water. In addition, the SFPUC confirmed that there are adequate short-term and long-term water supplies for the Code Compliant Alternative to operate through 2040 (Lau, 2017).

Overall Impact Conclusion

Overall, the Code Compliant Alternative would have a higher demand for potable and recycled water than the proposed project or variant because there would be slightly more overall square footage than the proposed project or the variant. However, the India Basin Open Space would not be improved under this alternative. Similar to the proposed project and the variant, the Code Compliant Alternative would likely not require new or expanded water supply resources or entitlements given SFPUC's projections of available potable water. In addition, the SFPUC approved a water supply assessment for the proposed project and the variant on December 13, 2016, concluding that SFPUC has adequate short-term and long-term water supplies for the project to operate through 2040. Furthermore, the SFPUC confirmed that there are adequate short-term and long-term water supplies for the Code Compliant Alternative to operate through 2040 (Lau, 2017). Mitigation measures listed in Section 3.5, "Transportation and Circulation"; Section 3.6, "Noise"; and Section 3.7, "Air Quality," would reduce any impacts specifically related to expanded water, wastewater, and stormwater facilities to less-than-significant levels. Therefore, like the proposed project and the variant, the Code Compliant Alternative would have a *less-than-significant with mitigation* project-level and cumulative impact on utilities.

Public Services

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

The Code Compliant Alternative, like the proposed project and the variant, would increase the on-site population through the development of residential, commercial, institutional/educational, R&D, and recreational uses. As a result, this alternative would generate an increase in demand on public service providers, including SFPD, SFFD, SFUSD, and the SFPL. The Code Compliant Alternative would improve emergency access through the site and would construct a new school, as proposed under the proposed project and the variant. The impact of the Code Compliant Alternative on public services would be generally the same as the impact of the proposed project or variant. As under the proposed project and the variant, public service providers would be able to accommodate the demand of the new population of residents and visitors; therefore, the project-level and cumulative impacts of the Code Compliant Alternative on public services would be *less than significant.* No mitigation measures are necessary.

Biological Resources

India Basin Shoreline Park and 900 Innes Properties

The Code Compliant Alternative would include the same recreational and commercial development and associated parking and access on the India Basin Shoreline Park and 900 Innes properties as the proposed project and the variant. Under this alternative, similar to the proposed project and variant, the existing dilapidated piers and creosote-treated piles in tidal areas connected with these project site properties would be removed and, in some cases, replaced. Existing riprap would be removed, existing tidal marsh wetlands would be partially restored, and new additional tidal marsh wetlands would be created along the shoreline of the India Basin Shoreline Park and 900 Innes properties.

Therefore, on the India Basin Shoreline Park and 900 Innes properties, the Code Compliant Alternative would have similar impacts as the proposed project and variant related to candidate, sensitive, or special-status species;

riparian habitats or sensitive natural communities; federally protected wetlands; interference with the movement of migratory fish or wildlife species; conflicts with local policies or ordinances protecting biological resources; and conflicts with habitat conservation plans, natural community conservation plans, or other approved habitat conservation plans.

India Basin Open Space and 700 Innes Properties

The Code Compliant Alternative would have greater potential than the proposed project or variant for impacts on biological resources because the 700 Innes property would receive more development in terms of total land coverage and the open space on this property would be reduced. The proposed project and variant include an approximately 5.63-acre open space, referred to as the "Big Green," on the 700 Innes property. The Code Compliant Alternative would eliminate the Big Green and reduce the other open space areas on the 700 Innes property, which would reduce habitat for special-status species and migratory bird nesting, foraging, and stopover habitat. This alternative would reduce the value of the India Basin shoreline as a migratory corridor for special-status species and migratory birds with the removal of the Big Green.

However, the Big Green would be primarily landscaped and with ornamental plantings, and would not provide habitat for any of the special-status wildlife present in the Bay (e.g., Ridgway's rail, California black rail, California least tern, salt marsh harvest mouse, green sturgeon, protected salmonids). Habitat that supports these species would still be protected, restored, and created with implementation of Mitigation Measure M-BI-1c ("Prepare and Implement a Vegetation Restoration Plan and Compensatory Mitigation"), which requires that sensitive natural communities be created or restored at a ratio of no less than 1:1. In addition, the project would result in the creation of an additional 0.81 acre of tidal marsh habitat. Therefore, although removing the Big Green from the India Basin Open Space under the Code Compliant Alternative would reduce habitat for migratory bird populations, it does not change the overall determination of significance for the Code Compliant Alternative relative to the proposed project. The Code Compliant Alternative would have similar impacts as the proposed project and variant on the India Basin Open Space and 700 Innes properties related to federally protected wetlands; conflicts with local policies or ordinances protecting biological resources; and conflicts with habitat conservation plans, natural community conservation plans, or other approved habitat conservation plans. However, this alternative would have greater impacts related to effects on candidate, sensitive, or special-status species; riparian habitats or sensitive natural communities; and interference with the movement of migratory fish or wildlife species.

Overall Impact Conclusion

Overall, compared to the proposed project or the variant, which would have an impact on biological resources of less than significant with mitigation, the Code Compliant Alternative's impact on biological resources would be slightly greater. However, similar to the proposed project or the variant, the following mitigation measures would apply to the Code Compliant Alternative:

- M-BI-1a ("Prepare and Implement a Hydroacoustic Monitoring Program for Special-Status Fish and Marine Mammals")
- M-BI-1b ("Implement Avoidance and Minimization Measures for Special-Status Species")
- M-BI-1c ("Prepare and Implement a Vegetation Restoration Plan and Compensatory Mitigation")

- M-HY-1a ("Monitor Turbidity during Construction")
- M-HY-1b ("Implement Pile Removal Best Management Practices")

Implementation of these mitigation measures would reduce the project-level and cumulative biological impacts of the Code Compliant Alternative to *less than significant with mitigation*.

Hydrology and Water Quality

India Basin Shoreline Park and 900 Innes Properties

Development proposed for the India Basin Shoreline Park and 900 Innes properties under the Code Compliant Alternative would be the same as that for the proposed project and variant. Accordingly, impacts related to water quality and waste discharge requirements (WDRs) would be the same for the Code Compliant Alternative as for the proposed project and variant and would require the same mitigation measures related to turbidity monitoring and pile removal best management practices (BMPs).

India Basin Open Space Property

Unlike the proposed project or variant, no construction on the landside or in-water work would occur at the India Basin Open Space property under the Code Compliant Alternative because this alternative would not involve implementing the same level of enhancements. Without improvements to the India Basin Open Space, construction or operation under this alternative would result in no impacts related to water quality or exceedance of WDRs, or to alteration of the existing drainage pattern or an increase in the rate and amount of surface runoff. Stormwater impacts would be the same under the Code Compliant Alternative as under the proposed project or variant because stormwater would continue to flow overland and would be self-treating under this alternative. Impacts from the placement of structures within the 100-year flood hazard area would be the same under the Code Compliant Alternative as under the proposed project or variant because no structures would be placed within the 100-year flood hazard area under each of these alternatives.

700 Innes Property

The Code Compliant Alternative would result in additional impervious area relative to the proposed project and variant because additional development would occur. Nonetheless, impacts related to altering existing drainage patterns, increasing the rate and amount of surface runoff, and stormwater runoff and management would be similar to the impacts of the proposed project and variant because proposed stormwater facilities under this alternative would be designed to conform to the City's stormwater management requirements.

Impacts related to the placement of structures within the 100-year flood hazard area would be the same for the Code Compliant Alternative as for the proposed project or variant because no structures would be placed within the 100-year flood hazard area under any of these alternatives. Similar to the proposed project and variant, potential water quality impacts from land-based construction work and groundwater dewatering would be reduced under the Code Compliant Alternative through compliance with existing water quality control measures required under the general construction permit, construction site runoff permit, and batch wastewater discharge permit.

The Code Compliant Alternative would not cause an increase in stormwater pollutants discharged to the Bay at this property, given compliance with the City's regulatory and permitting requirements regarding stormwater (National Pollutant Discharge Elimination System [NPDES] Phase II Municipal Separate Storm Sewer System [MS4] permit, Stormwater Management Ordinance, *San Francisco Stormwater Management Requirements and Design Guidelines* [SMR], and industrial general stormwater permit). Wastewater discharged to the combined sewer system would be treated in accordance with the City's NDPES permit and recycled water generated on-site would be treated to Title 22 requirements. Therefore, the operational impact of the Code Compliant Alternative related to a violation of water quality standards or WDRs would be similar to that of the proposed project and the variant.

Overall Impact Conclusion

The following mitigation measures described in Section 3.15, "Hydrology and Water Quality," would also apply to the Code Compliant Alternative:

- M-HY-1a ("Monitor Turbidity during Construction")
- M-HY-1b ("Implement Pile Removal Best Management Practices")
- M-HY-1c ("Dredging Equipment Requirement")

With implementation of these mitigation measures, the Code Compliant Alternative's overall project-level and cumulative impacts on hydrology and water quality would be *less than significant with mitigation*, the same as under the proposed project or the variant.

Hazards and Hazardous Materials

India Basin Shoreline Park Property

The Code Compliant Alternative would have an equal potential to the proposed project and variant for impacts on hazards and hazardous materials at the India Basin Shoreline Park property. The limits and type of construction would be similar, and future operational uses would be the same with respect to their potential for use of hazardous materials. Mitigation Measures M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line"), M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line"), and M-HZ-2c ("Prepare and Implement a Remedial Action Plan for the 900 Innes Property") would also be applicable to this alternative and would result in potential impacts on hazards and hazardous materials similar to those of either the proposed project or the variant.

900 Innes Property

The Code Compliant Alternative would have an equal potential to the proposed project and variant for impacts on hazards and hazardous materials at the 900 Innes property as the proposed project and variant. The limits and type of construction would be similar, and future operational uses would be the same with respect to their potential for use of hazardous materials. Mitigation Measures M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line"), M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line"), and M-HZ-2c ("Prepare and Implement a Remedial Action Plan for the 900 Innes Property"), and compliance with Bay Area Air Quality

Management District (BAAQMD) Regulation 11, Rule 2, and implementation of a remedial action plan would also be applicable to this alternative. Together these measures would result in potential impacts related to hazards and hazardous materials similar to those of the proposed project or the variant.

India Basin Open Space Property

The Code Compliant Alternative would have fewer impacts on hazards and hazardous materials at the India Basin Open Space property than the proposed project and variant, because no construction would occur and operational uses would not change from existing conditions. As such, the potential uses of hazardous materials during construction and operation would be less.

Because no construction would occur at this property under this alternative, the existing contaminants in soil, sediment, and groundwater would not be disturbed; therefore, the potential for exposure to construction workers or release of contaminants would be less than under the proposed project. However, under this alternative, Mitigation Measures M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line") and M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line") would not be applicable at the India Basin Open Space property. As a result, existing contamination would remain and could pose a risk to future site users.

Despite the potential of the Code Compliant Alternative to expose future site users to these potential risks, this alternative would have less of an impact than either the proposed project or the variant because this property would be left in its existing condition and no construction would occur.

700 Innes Property

The Code Compliant Alternative would have an equal potential to the proposed project and variant for impacts on hazards and hazardous materials at the 700 Innes property. The limits and type of construction would be similar, and future operational uses would be the same with respect to their potential for use of hazardous materials. Mitigation Measures M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line") and M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line"), and compliance with BAAQMD Regulation 11, Rule 2 would also be applicable to this alternative. Together these measures would result in potential impacts related to hazards and hazardous materials similar to those of the proposed project and the variant.

Overall Impact Conclusion

The following mitigation measures described in Section 3.16, "Hazards and Hazardous Materials," would also apply to the Code Compliant Alternative:

- M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line")
- M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line")
- M-HZ-2c ("Prepare and Implement a Remedial Action Plan for the 900 Innes Property")

With implementation of these mitigation measures, the Code Compliant Alternative's overall project-level and cumulative impact on hazards and hazardous materials would be *less than significant with mitigation*, the same as under the proposed project or the variant.

Other Topics

The Notice of Preparation/Initial Study (NOP/IS) and public scoping process concluded that the proposed project or variant would have no impacts or less-than-significant impacts in the following analysis areas:

- Geology and Soils
- Mineral and Energy Resources
- Agriculture and Forestry Resources

The Code Compliant Alternative would result in no impacts or less-than-significant impacts related to any of the above-listed environmental topics, because this alternative would result in no changes to existing site conditions with respect to these topics.

4.5 REDUCED DEVELOPMENT ALTERNATIVE

Overall, the buildout of the Reduced Development Alternative would include 620,000 gsf of residential (620 units), 75,000 gsf of commercial space (including retail, office, and R&D), 26,750 gsf of school space, 360,000 gsf of parking, and 618,552 sq. ft. of recreational/open space for a total of approximately 1,700,302 gsf under this alternative.

4.5.1 San Francisco Recreation and Parks Department Development

India Basin Shoreline Park and 900 Innes Properties

The Reduced Development Alternative would include the same on-land recreational and commercial space and associated parking and access on the India Basin Shoreline Park and 900 Innes properties as the proposed project; however, the in-water redevelopment would not include a new pier and dock extending from the India Basin Shoreline Park property (Figure 4-3a). Bicycle circulation improvements would also be implemented, including the Bay Trail extension through the India Basin Shoreline Park and 900 Innes properties and Class 1 and Class 3 facilities on streets. The India Basin Shoreline Park and 900 Innes properties are currently zoned M-1, NC-2, and P, and are within the 40-X and OS height and bulk districts; therefore, development heights would be limited to 40 feet (Figure 4-4a). The proposed uses on these two properties would not require rezoning.

Under the Reduced Development Alternative, similar to the proposed project, the existing dilapidated piers and creosote-treated piles would be removed and replaced in water areas connected with the India Basin Shoreline Park and 900 Innes properties. Existing riprap would be removed, existing tidal marsh wetlands would be restored, and new additional tidal marsh wetlands would be created near the shoreline of the India Basin Shoreline Park property. Furthermore, similar to the proposed project, hazardous-materials remediation activities and preservation of historic resources would occur on the India Basin Shoreline Park and 900 Innes properties.

4.5.2 BUILD Development

India Basin Open Space and 700 Innes Properties

Like the proposed project and variant, the Reduced Development Alternative would include no structures on the India Basin Open Space property. The proposed uses at the 700 Innes property under this alternative would require some changes to the development controls (including increases in permitted height) through amendments to the General Plan, Planning Code text, and zoning map, including an India Basin Special Use District (SUD) and Design Standards and Guidelines for development entitled through the SUD process and a development agreement.

The Reduced Development Alternative would include residential, commercial (retail, office, and R&D), institutional/education, parking, and recreational/open space uses on the 700 Innes property; however, the total square footage of development would be reduced by approximately 50 percent (Figure 4-3b), which is less development than is allowed on the property by the Planning Code. Under this alternative, the proposed heights of the structures on the 700 Innes property would be lowered relative to the proposed project at the proposed tower locations and throughout the rest of this property. However, the height and bulk would be slightly higher than under the Code Compliant Alternative, with the tallest building at 75 feet or approximately 6 floors (Figure 4-4b).

The proposed project includes an approximately 5.63-acre open space, referred to as the "Big Green," on the 700 Innes property that would be eliminated under the Reduced Development Alternative, along with a reduction of the other 700 Innes property open space areas semi-public internal open space areas.

Like the proposed project, the Reduced Development Alternative would include transportation and circulation improvements including new and reconstructed streets, sidewalks, and pathways. The street layout would be the same as under the proposed project. Similar bicycle circulation improvements would also be implemented, as well as Class 2 and Class 3 bicycle facilities on streets, but there would not be any improved bike trails through the existing 700 Innes property (where the Big Green would otherwise be located). The Bay Trail along the India Basin Open Space property would remain unchanged. Like the proposed project, this alternative would also include a TDM program, and hazardous-materials remediation would occur on the 700 Innes property.

The Reduced Development Alternative would leave the India Basin Open Space property in its existing condition with wetlands and a pedestrian pathway traversing the site along the Bay waterfront.

Source: GGN, 2017

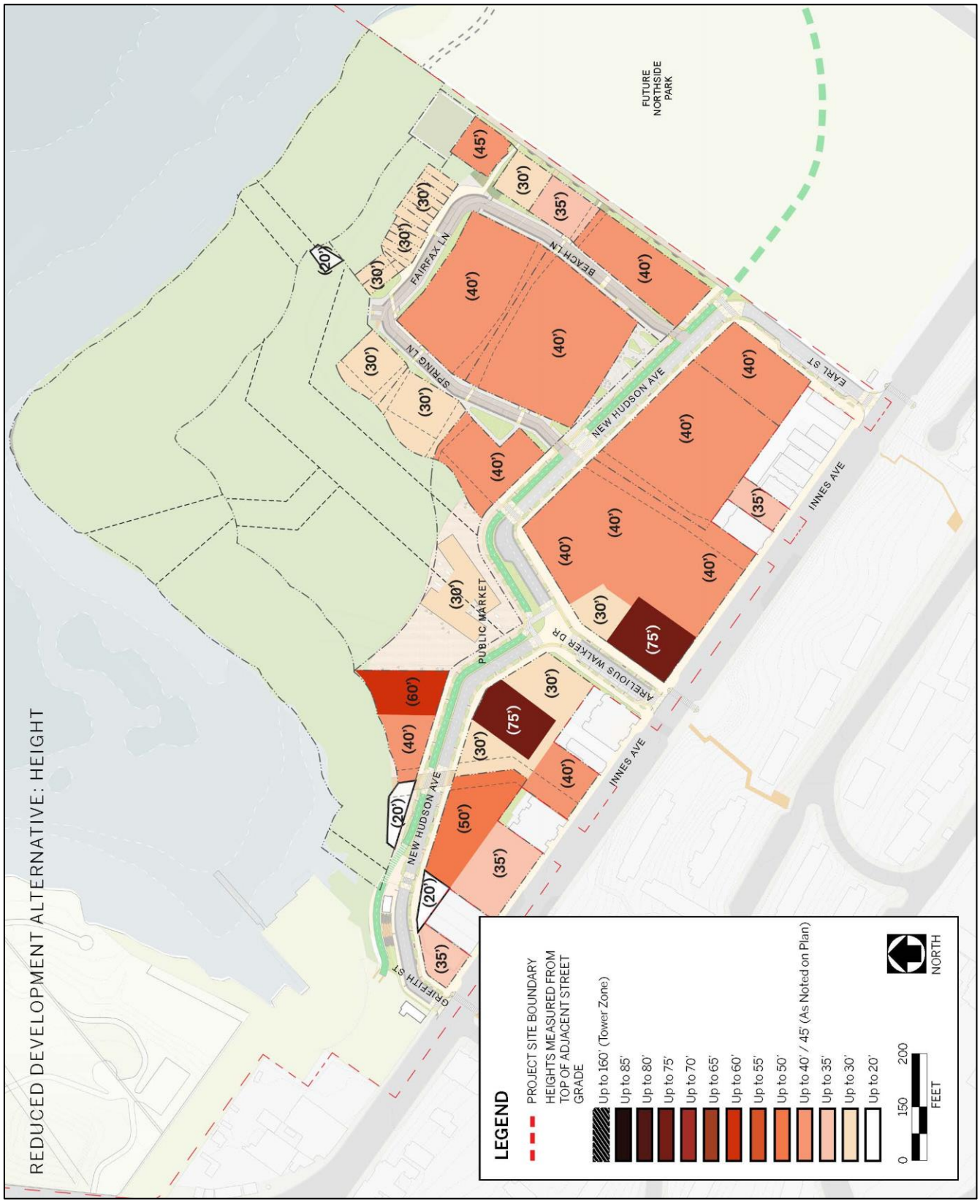
Figure 4-3a **Reduced Development Alternative Site and Land Use Plan (India Basin Shoreline Park and 900 Innes Properties)**

Source: SOM, 2017

Figure 4-3b **Reduced Development Alternative Site and Land Use Plan India Basin Open Space and 700 Innes Properties)**

Source: GGN, 2017

Figure 4-4a **Reduced Development Alternative Building Heights (India Basin Shoreline Park and 900 Innes Properties)**



Source: SOM, 2017

Figure 4-4b **Reduced Development Alternative Building Heights (India Basin Open Space and 700 Innes Properties)**

4.5.3 Impacts of the Reduced Development Alternative

Land Use and Planning

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Like the proposed project and variant, the Reduced Development Alternative would construct buildings with proposed heights greater than permitted by the Planning Code. Although building heights would be less than under the proposed project or variant, the Reduced Development Alternative would still require changes to development controls through amendments to the General Plan, Planning Code text, and zoning map, including an India Basin SUD and Design Standards and Guidelines for development entitled through the SUD process and a development agreement. Because new private development would be constructed on portions of the project site that could be subject to the Public Trust Doctrine, this alternative would need a trust settlement or exchange agreement pursuant to the Public Trust, similar to the proposed project or variant.

The scale of development would be smaller under the Reduced Development Alternative than under the proposed project or variant, but the proposed mix of land uses would be similar. The Reduced Development Alternative would be inconsistent with the *Bay Trail Plan*, the Recreation and Open Space Element of the General Plan, and the *Hunters Point Area Plan*, because the Bay Trail would not be improved for bicycle access through the project site. Overall, the inconsistencies between these plans and policies and the Reduced Development Alternative are the same as their inconsistencies relative to the proposed project or the variant, which would be resolved through the development and permit application process.

Similar to the proposed project, the Reduced Development Alternative would not physically divide an existing community because this new mixed-use community would be connected to existing and future residential communities surrounding the project site to the west and east and to existing and future open spaces along the Bay that would connect through the site. The project-level and cumulative impacts of the Reduced Development Alternative on land use and planning would be *less than significant*, generally the same as under the proposed project and the variant. No mitigation measures are necessary.

Aesthetics

India Basin Shoreline Park and 900 Innes Properties

Under the Reduced Development Alternative, these properties would include the same on-land recreational and commercial development as the proposed project and the variant; however, India Basin Shoreline Park would not include a new pier and dock extending from the park property. Without construction of the pier and dock, impacts on the scenic vistas, resources, and the visual character and quality of the site would be reduced from the impacts of either the proposed project or the variant.

India Basin Open Space Property

Under the Reduced Development Alternative, this property would be left in its existing condition with wetlands and a pedestrian pathway traversing the site along the Bay waterfront. The impact on scenic vistas, resources, the

visual character and quality of the area, and light and glare would be the same as described above for the No Project Alternative.

700 Innes Property

The Reduced Development Alternative would involve constructing buildings up to 75 feet in height in some locations. The general layout of buildings under this alternative would be similar to the layout under either the proposed project or the variant; however, the shorter maximum height would reduce impacts on scenic vistas, resources, the visual character and quality of the area, and light and glare.

Overall Impact Conclusion

The Reduced Development Alternative would include shorter buildings in some locations compared to the proposed project or the variant, which would result a reduced impact on aesthetics therefore the impact would be less than significant with mitigation. Because new develop would result in new light sources on the site, Mitigation Measure M-AE-3 ("Develop a Lighting Plan for Approval by the San Francisco Planning Department) would similarly apply to the Reduced Development Alternative and would reduce the project-level and cumulative impacts of the Reduced Development Alternative to *less than significant with mitigation*, the same as under the proposed project or variant.

Population and Housing

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

The Reduced Development Alternative would generally have the same recreational and commercial development as the proposed project, but the dock and pier extending from the India Basin Shoreline Park property would not be built. Therefore, the amount of temporary construction employment would be reduced, and no permanent population and housing impacts on this part of the property would occur. In addition, the India Basin Open Space Property would be left in its existing condition and no improvements to the shoreline would be made.

700 Innes Property

The Reduced Development Alternative would include construction of approximately 620 residential units and 75,000 gsf of commercial space, approximately 50 percent less development overall than under either the proposed project or the variant. However, the building footprint of the Reduced Development Alternative would generally be the same and would displace the same number of people as the proposed project and the variant. Direct population and housing growth under the Reduced Development Alternative would be reduced by approximately 50 percent overall, resulting in a lower growth level than under the proposed project or the variant.

Overall Impact Conclusion

The Reduced Development Alternative would result in approximately 50 percent less development overall than either the proposed project or variant and therefore the population and housing impacts would generally be less. However, compared to the proposed project or the variant, which would result in a less-than-significant impact,

the Reduced Development Alternative would similarly result in *less-than-significant* project-level and cumulative impacts on population and housing. No mitigation measures are necessary.

Cultural Resources

Historic Architecture

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

There are no architectural historical resources on the India Basin Shoreline Park or the India Basin Open Space properties; thus, the discussion below focuses on architectural historical resources located on the 900 Innes and 700 Innes properties.

The Reduced Development Alternative would have an equal potential to the proposed project or variant for a significant impact on the Shipwright's Cottage and the India Basin Scow Schooner vernacular cultural landscape, both on 900 Innes property. Construction under these scenarios would similarly result in a change of use/setting of the site, and in the removal of contributing and noncontributing character-defining features of the cultural landscape. The project elements of the Reduced Development Alternative, including the potential demolition of the Boatyard office building, would negatively affect the integrity of setting, design, materials, workmanship, feeling, and association to such a degree that the India Basin Scow Schooner Boatyard would no longer remain eligible for listing in the CRHR[2]. This impact, if present, would be *significant*. Because of this loss of CRHR eligibility, this impact cannot be reduced to a less-than-significant level. Nonetheless, the Reduced Development Alternative would incorporate Mitigation Measures M-CR-1a, M-CR-1b, M CR-1c, M CR-1d, and M CR-1e to lessen the severity of the impact of the Reduced Development Alternative on the India Basin Scow Schooner Boatyard, but not to the degree that the resource would remain eligible for listing in the CRHR. Thus, the impact of the Reduced Development Alternative on the built environment at the India Basin Scow Schooner Boatyard (900 Innes property) *would be significant and unavoidable with mitigation*.

In addition, the relocation and rehabilitation of 702 Earl Street would not materially impair the significance of the building to the extent that it would no longer be eligible for listing in the CRHR. The project proponent would meet the Secretary of the Interior's Standards for Rehabilitation of the building to retain and preserve the building's character-defining features. For these reasons, the relocation of 702 Earl Street would not substantially affect the building's integrity of setting because it would be within the same general location as its historical context and the spatial relationship of the original building location along the shoreline before the infill of the 1960s would be largely restored. Compared to the proposed project or the variant, which would result in an impact of *significant and unavoidable with mitigation*, the project-level and cumulative impacts of the Reduced Development Alternative related to historic architecture would also be *significant and unavoidable with mitigation*.

[2] If final project design retains the Boatyard office building along with the other contributing elements that are to remain under the Reduced Development Alternative there is the potential that the India Basin Scow Schooner Boatyard would remain eligible for listing in the CRHR

Archeological Resources

India Basin Shoreline Park, 900 Innes, and India Basin Open Space Properties

The Reduced Development Alternative would have a lower potential to affect archeological resources on the India Basin Shoreline Park property than the proposed project and variant. The in-water redevelopment would not include a new pier and dock, which would limit the potential to affect the buried ship adjacent to this property that is located in the Bay. The other buried ship that is assumed to be located under most of the land portion of Shoreline Park would be affected the same as the proposed project and variant under the Reduced Development Alternative.

This alternative would have an equal potential to having a significant impact on archeological resources on the 900 Innes property because the amount of ground-disturbing activity would be the same as under the proposed project and variant, and no effect on archeological resources on the India Basin Open Space property would occur as it would be left in its existing condition. Similar to the proposed project or the variant, Mitigation Measures M-CR-2a ("Undertake an Archeological Testing Program"), M-CR-3a ("Implement Legally Required Measures in the Event of Inadvertent Discovery of Human Remains"), and M-CR-4a ("Tribal Cultural Resources Interpretive Program") would apply to the Reduced Development Alternative, which would reduce the impacts on archeological resources, including buried ships.

700 Innes Property

The Reduced Development Alternative would have a similar and slightly lower potential than the proposed project and variant to affect archeological resources on the 700 Innes property because this alternative would entail a similar building footprint that would generally be the same and would have the same or lesser amount of ground-disturbing activities.

Overall Impact Conclusion for Archeological Resources

Because approximately the same or a lesser amount of proposed ground-disturbing activities would occur across all properties under the Reduced Development Alternative, the potential to affect archeological resources would not be eliminated and Mitigation Measures M-CR-2a ("Undertake an Archeological Testing Program") and M-CR-3a ("Implement Legally Required Measures in the Event of Inadvertent Discovery of Human Remains") would apply to this alternative. Implementation of these mitigation measures would reduce the potential project-level impacts on archeological resources to *less than significant with mitigation* and would not contribute to any cumulative impact related to archeological resources, similar to the proposed project and variant.

Transportation and Circulation

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Under the Reduced Development Alternative, new residential, commercial, and institutional/educational space would be developed on the project site, but in lower amounts than under the proposed project or the variant. Overall development on the site would be reduced by approximately 50 percent, as represented in Table 4-1.

Like the proposed project and variant, the Reduced Development Alternative would include a TDM program and would implement circulation improvements on the project site and in the immediate vicinity similar to those under the proposed project or variant. The substantial reduction in new building development under the Reduced Development Alternative would reduce overall travel demand and would generally be expected to reduce the magnitude of impacts identified for the proposed project or the variant.

However, the Reduced Development Alternative would result in passenger loading impacts related to the proposed school use, similar to the proposed project or the variant. Mitigation Measure M-TR-8 ("Implement Passenger Loading Strategies for the School") would reduce this impact to *less than significant with mitigation*. The Reduced Development Alternative may also result in significant impacts related to overcrowding on local transit services under Existing plus Project Conditions and to delays to transit vehicles under Cumulative Conditions. Mitigation Measure M-TR-3P ("Implement Transit Capacity Improvements [Proposed Project]") or M-TR-3V ("Implement Transit Capacity Improvements [Variant]") would reduce the transit capacity impacts to *less than significant with mitigation*, but cumulative impacts related to transit delay would be *significant and unavoidable*, as SFMTA cannot commit to implementation of Mitigation Measure M-C-TR-2 ("Implement Transit-Only Lanes") at this time.

Like the proposed project or the variant, other impacts under the Reduced Development Alternative would be less than significant, as the internal street network would generally be the same as under the proposed project or the variant but the overall travel demand at the site would be substantially less.

Noise

Construction

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

The Reduced Development Alternative, like the proposed project and variant, would require removal and/or replacement of existing dilapidated piers and creosote-treated piles in tidal areas connected with the India Basin Shoreline Park and 900 Innes properties, along with removal of existing riprap and the restoration of tidal marsh wetlands. Thus, construction activity noise would be expected to be similar to construction noise from the proposed project and the variant.

Construction activities associated with development at the India Basin Open Space and 700 Innes properties may extend over less area within the Reduced Development Alternative project boundary, corresponding with the reduction of expected developed acreage. However, with respect to the assessment of construction noise impacts at off-site community noise-sensitive receptors, the expected noisiest construction equipment and their distances (from the project boundary) to these receptors would be essentially similar, thus resulting in predicted levels that are comparable to those studied for the proposed project and the variant. Hence, implementation of Mitigation Measures M-NO-2a ("Implement Noise Control Measures during Construction") and M-NO-2b ("Implement Noise Control Measures for Pile Driving") would still be anticipated to reduce noise exposures at off-site receptors to less than significant with mitigation. Therefore, the impact conclusion of *less than significant with mitigation* would be the same as for the proposed project and the variant.

Operation

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Off-site traffic flows (and hence, corresponding increases over existing traffic volumes on roadways in the project vicinity) for the Reduced Development Alternative are likely to be somewhat less than those of the proposed project and the variant, based on the anticipated quantity of residential units and available parking spaces as presented in Table 4-1. However, the comparative differences in these three quantities between the proposed project, the variant, and the Reduced Development Alternative would be no greater than about 60 percent. Thus, the expected increases to the outdoor ambient sound environment attributable to traffic contributions from the Reduced Development Alternative are still likely to be impactful and, could create similar *significant and unavoidable* impacts on nearby noise-sensitive receptors. On this basis, the off-site traffic noise impact assessment would be the same as that of the proposed project or the variant, and this project-level and cumulative impact would be *significant and unavoidable*.

Air Quality

India Basin Shoreline Park Property

The India Basin Shoreline Park property would include the same type of on-land recreational and commercial development under the Reduced Development Alternative as under the proposed project and the variant, but would not include a new pier and dock extending from the property into the Bay. Thus, construction-related emissions would be slightly less under this alternative than under the proposed project and variant. The reduced construction would also result in a reduction in $PM_{2.5}$ and excess cancer risk impacts.

Because the Reduced Development Alternative would include the same type of on-land recreational and commercial development, the India Basin Shoreline Park property would generate similar operational emissions from area, energy, and mobile sources as the proposed project and variant. The $PM_{2.5}$ and excess cancer risk associated with the India Basin Shoreline Park would also be the same.

900 Innes Property

The 900 Innes property would include the same type of recreational and commercial development under the Reduced Development Alternative as under the proposed project and the variant. Thus, emissions associated with construction and operation under the Reduced Development Alternative would be similar to emissions under the proposed project and variant. The $PM_{2.5}$ and excess cancer risks associated with the 900 Innes property would also be similar.

India Basin Open Space Property

The 6.2-acre India Basin Open Space property would be left in its existing condition under the Reduced Development Alternative, and no construction would occur. Thus, construction emissions at this property would be less under the Reduced Development Alternative than under the proposed project and variant. Because no construction would occur at the India Basin Open Space property under this alternative, operational uses would

not change from existing conditions. There would be no $PM_{2.5}$ and excess cancer risk impacts from the India Basin Open Space property because no construction or operational activity would occur at this property.

700 Innes Property

Approximately 620 residential units and 75,000 gsf of commercial space would be constructed at the 700 Innes property under the Reduced Development Alternative, approximately 50 percent less residential and more than 70 percent less commercial development than under the proposed project. The building footprint of the Reduced Development Alternative would generally be the same but with approximately 50 percent less gsf overall. Because of this reduced development, this alternative would have reduced construction activities, and thus, would generate less construction-related emissions than the proposed project and variant. Accordingly, the Reduced Development Alternative would generate fewer operational emissions from stationary, area, energy and mobile sources. The reduced construction activity and fewer operational emissions from emergency generators and vehicle traffic would result in lower $PM_{2.5}$ and excess cancer risk impacts relative to the proposed project and variant.

Overall Impact Conclusion

Overall, compared to the proposed project or variant, which would have an impact of significant and unavoidable with mitigation, the Reduced Development Alternative's impact on air quality would be less than that of either the proposed project or the variant. Similar to the proposed project and the variant, the following mitigation measures would apply to the Reduced Development Alternative:

- M-AQ-1a ("Minimize Off-Road Construction Equipment Emissions")
- M-AQ-1b ("Minimize On-Road Construction Equipment Emissions")
- M-AQ-1c ("Utilize Best Available Control Technology for In-Water Construction Equipment")
- M-AQ-1d ("Offset Emissions Offsets for Construction and Operational Ozone Precursor Emissions")
- M-AQ-1e ("Implement Best Available Control Technology for Operational Diesel Generators")
- M-AQ-1f ("Prepare and Implement Transportation Demand Management")

Implementation of these mitigation measures would likely reduce the project-level and cumulative emissions and health risk of the Reduced Development Alternative. However, emissions could continue to exceed the thresholds of significance and would result in project-level and cumulative impacts of *significant and unavoidable with mitigation*, the same as under the proposed project or the variant.

Greenhouse Gas Emissions

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

The total square footage of development on the project site would be approximately half as large under the Reduced Development Alternative as under either the proposed project or the variant. Development under this alternative would be subject to the regulations adopted to reduce GHG emissions identified in the San Francisco GHG Reduction Strategy. Compliance with the applicable regulations would reduce GHG emissions related to transportation, energy use, waste disposal, wood burning, and use of refrigerants.

Like the proposed project or variant, the Reduced Development Alternative 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. The project-level and cumulative impacts of the Reduced Development Alternative related to GHG emissions would be *less than significant*, the same as under the proposed project and the variant.

Wind

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

The same recreational and commercial development would occur at the India Basin Shoreline Park and 900 Innes properties under the Reduced Development Alternative as under either the proposed project or the variant; however, this alternative would not include a pier and dock that would extend into the Bay. The India Basin Open Space would be left in its existing condition with wetlands and a pedestrian pathway traversing the site along the Bay waterfront. The Reduced Development Alternative at the India Basin Shoreline Park and 900 Innes properties would include buildings and structures up to 25 feet tall, not tall enough to substantially alter wind currents, redirect them downward, or alter ground-level wind conditions.

Buildings on the 700 Innes property would be up to a maximum of 65 feet tall under the Reduced Development Alternative, which is generally shorter than under either the proposed project or the variant. Typically, shorter buildings do not create as much wind acceleration as tall buildings surrounded by shorter buildings, which would be present under either the proposed project or the variant. Therefore, conditions at the 700 Innes property under the Reduced Development Alternative would be better and less windy than under either the proposed project or the variant. Because no buildings would be more than 100 feet in height, interim hazardous wind conditions would be unlikely during the phased buildout of the Reduced Development Alternative, and Mitigation Measure M-WI-1a ("Improve Interim Hazardous Wind Conditions by Undertaking Supplemental Wind Impact Analyses") would not be applicable to this alternative.

A wind tunnel model was not prepared for the Reduced Development Alternative, and quantitative modeling data are not available. Without such quantitative data, the potential exists for wind hazard exceedances to occur on the project site and in adjacent areas during construction and operation of the Reduced Development Alternative. Mitigation Measures M-WI-1b ("Temporary Wind Reduction Measures during Construction") and M-WI-1c ("Reduce Effects of Ground-Level Hazardous Winds through Ongoing Review") would reduce impacts of the Reduced Development Alternative during construction and operation.

The Reduced Development Alternative's impacts on wind conditions at the project site may be improved compared to the proposed project or the variant because buildings would be shorter in locations where the highest impact was present under the proposed project or variant. A supplemental wind technical memorandum, included in Appendix H, stated that based on previous modeling experience and the proposed shorter heights under this alternative, a reduction was possible. However, a wind tunnel test was not undertaken for the Reduced Development Alternative, and there are no test results to demonstrate the impact of the Reduced Development Alternative on wind conditions at the project site. Because there is not enough information available to conclude that no wind hazard exceedances would occur, the impact of the Reduced Development Alternative on wind conditions would be the same as the impact of the proposed project or variant, or *significant and unavoidable*.

The cumulative projects listed in Table 3-1 in Chapter 3, "Environmental Setting and Impacts," are more than 1,500 feet away. For this reason, the cumulative projects in combination with the Reduced Development Alternative are not expected to result in a materially different wind effect at public areas in the project vicinity. Therefore, the Reduced Development Alternative would not contribute to a cumulative impact related to wind, and would have the same cumulative impact as the proposed project or the variant, or *less than significant*. No mitigation measures are necessary.

Shadow

India Basin Shoreline Park Property

The same type of recreational and commercial development would occur at the India Basin Shoreline Park property under the Reduced Development Alternative as under either the proposed project or the variant. Shadows cast by buildings on public open spaces on the India Basin Shoreline Park property would be the same under this alternative as under either the proposed project or the variant, because the buildings that could cast shadows on this property would be the same height under this alternative.

900 Innes Property

The same recreational and commercial development would occur at the 900 Innes property under the Reduced Development Alternative as under either the proposed project or the variant; however, buildings with the potential to cast shadows on this property would lower in height, especially the towers which would be up to 75 feet tall. Therefore, shadows cast by buildings under the Reduced Development Alternative would be smaller in size and shorter in duration than shadows cast by buildings under the proposed project or the variant.

India Basin Open Space Property

The India Basin Open Space would be left in its existing condition with wetlands and a pedestrian pathway traversing the site along the Bay waterfront. Buildings with the potential to cast shadows on the India Basin Open Space property are located on the 700 Innes property and would be lower than the proposed project or variant, especially at the tower locations where they would be up to only 75 feet tall maximum. With the reduction in building heights, especially at the tower locations, it is expected to lead to fewer shadows cast by the Reduced Development Alternative compared to the proposed project or the variant. Therefore, shadows cast on the India Basin Open Space by buildings under the Reduced Development Alternative would be smaller in size and shorter in duration than shadows cast by buildings under the proposed project or the variant.

700 Innes Property

The Reduced Development Alternative would include some buildings up to 75 feet or approximately 6 stories, including the tower locations, which would be shorter as compared to the proposed project and variant, both of which would include some buildings up to 160 feet in height. The Big Green, which would be a future publicly accessible open space on the 700 Innes property under the proposed project and the variant, would not be constructed under this alternative. The reduction in building height would result in fewer shadows cast by the Reduced Development Alternative compared to the proposed project or the variant. An exception to this would occur during the summer solstice, when fewer shadows would be cast in the park areas under the proposed project

or variant. However, buildings generally cast fewer shadows during the summer solstice than during the winter solstice and the vernal and autumnal equinoxes, so the annual shadow time would not be substantially less under the Reduced Development Alternative.

Overall Impact Conclusion

Overall, buildings would cast fewer shadows under the Reduced Development Alternative than under the proposed project or the variant because of the reduction in building heights up to a maximum of 75 feet in some locations; however, this alternative would have the same overall impact conclusion as the proposed project or variant, or *less than significant*. No mitigation measures are necessary.

The cumulative projects listed in Table 3-1 in Chapter 3, "Environmental Setting and Impacts," are more than 1,500 feet away; therefore, the effect of cumulative projects in combination with the Reduced Development Alternative on shadow would be the same as the cumulative effect with the proposed project or the variant, or *less than significant*. No mitigation measures are necessary.

Recreation

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

Construction

Recreation-related construction impacts of the Reduced Development Alternative for the India Basin Shoreline Park and 900 Innes properties would be the same as those of the proposed project or variant. However, because this alternative would not include new recreational facilities at the India Basin Open Space property and would provide fewer recreational facilities on the 700 Innes property, construction impacts on recreation use and facilities at these properties would be reduced or eliminated compared to the proposed project or variant.

Overall, the construction-related impacts of the Reduced Development Alternative on recreation facilities would be the same as those of the proposed project or the variant, *less than significant.* No mitigation measures are necessary.

Operation

Operational impacts on recreation under the Reduced Development Alternative would be similar to those of the proposed project and the variant. However, this alternative could result in increased use of the recreation facilities at the RPD properties because fewer recreation facilities would be available at the 700 Innes property. As a result, recreation use by the new on-site population generated by the Reduced Development Alternative would be focused onto fewer facilities, increasing the use of such facilities and resulting in more deterioration and physical degradation of such facilities, including RPD properties.

The proposed project and variant would include an approximately 5.63-acre open space, referred to as the "Big Green," on the 700 Innes property. Under the Reduced Development Alternative, there would be no Big Green and less open space would be provided on the 700 Innes property. The use of the other recreational facilities may increase under the Reduced Development Alternative, thus increasing the amount of deterioration and physical degradation, including RPD properties. However, such an increase would likely not result in

substantial deterioration because the recreation facilities at the India Basin Shoreline Park and 900 Innes properties would be new and upgraded, and thus, less prone to deterioration and physical degradation. In addition, the overall gsf under the Reduced Development Alternative is approximately 50 percent less, which would result in fewer potential users of recreational resources. The Reduced Development Alternative would result in *less-than-significant* project-level and cumulative impacts, the same as under the proposed project or the variant. No mitigation measures are necessary.

Utilities and Service Systems

India Basin Shoreline Park and 900 Innes Properties

Impacts on utilities and service systems on these properties would be the same under the Reduced Development Alternative as under the proposed project or variant because similar development would occur under this alternative.

India Basin Open Space Property

No impacts on utilities or service systems would occur at the India Basin Open Space property under the Reduced Development Alternative because development of utility infrastructure, wastewater generation, and use of potable water would not occur at this site. This would be similar to the proposed project or variant, which would not generate wastewater or create stormwater infrastructure for the India Basin Open Space property. However, under the proposed project and variant, potable water use at the site would be minimal.

700 Innes Property

Development at the 700 Innes property would be smaller under the Reduced Development Alternative than under the proposed project or variant, and thus, would generate less wastewater. Like the proposed project and variant, this alternative would likely not result in the exceedance of wastewater requirements because the wastewater generated at the site would represent a very small fraction of the Southeast Treatment Plant's total design treatment capacity. Impacts from wastewater generation during construction would be the same under the Reduced Development Alternative as under the proposed project or variant.

Like the proposed project and variant, the Reduced Development Alternative would require the construction of new water, wastewater, or stormwater drainage facilities, the construction of which could cause environmental effects. Impacts would be similar to those described for the proposed project and variant because, as with the proposed project and the variant, new utilities would be extended to the project site for construction under the Reduced Development Alternative.

The Reduced Development Alternative would have a lower demand for potable and recycled water than the proposed project or variant because it would develop less square footage in buildings. The Reduced Development Alternative would likely not require new or expanded water supply resources or entitlements given SFPUC's projections of available potable water. Furthermore, the SFPUC confirmed that there are adequate short-term and long-term water supplies for the Reduced Development Alternative to operate through 2040 (Lau, 2017).

Overall Impact Conclusion

Overall, the Reduced Development Alternative would have a lower demand for potable and recycled water than the proposed project or variant because it would not develop the India Basin Open Space and would include less square footage in buildings on the 700 Innes property. Similar to the proposed project and the variant, the Reduced Development Alternative would likely not require new or expanded water supply resources or entitlements given SFPUC's projections of available potable water. In addition, the SFPUC approved a water supply assessment for the proposed project and the variant on December 13, 2016, concluding that SFPUC has adequate short-term and long-term water supplies for the project to operate through 2040. Furthermore, the SFPUC confirmed that there are adequate short-term and long-term water supplies for the Reduced Development Alternative to operate through 2040 (Lau, 2017). Mitigation measures listed in Section 3.5, "Transportation and Circulation"; Section 3.6, "Noise"; and Section 3.7, "Air Quality," would reduce any impacts specifically related to expanded water, wastewater, and stormwater facilities to less-than-significant levels. Therefore, like the proposed project and the variant, the Reduced Development Alternative would have a *less-than-significant with mitigation* project-level and cumulative impact on utilities.

Public Services

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

The Reduced Development Alternative, like the proposed project and the variant, would increase the on-site population through the development of residential, commercial, institutional/educational, and recreational uses. This alternative would have approximately 50 percent of the gsf development which would result in fewer residential units, fewer commercial uses, a smaller school, and fewer recreational uses, and thus, would generate a lesser population on-site than the proposed project and variant. However, relative to existing conditions, the Reduced Development Alternative would generate an increase in demand for public service providers, including SFPD, SFFD, SFUSD, and the SFPL. The Reduced Development Alternative would improve emergency access through the site and would construct a new school, as proposed under the proposed project and the variant. The school would be 50 percent smaller under this alternative than under the proposed project or variant. However, the Reduced Development Alternative would also result in fewer residential units, and therefore fewer students. As under the proposed project and variant, BUILD would be required to pay impact fees to SFUSD. As under the proposed project and the variant, public service providers would be able to accommodate the demand of the new population; therefore, the impact of this alternative on public services would be less than significant. The project impact of the Reduced Development Alternative on public services would be less than that of the or variant because of the relative reduction of the population on-site, but the impact conclusion would be the same as the proposed project or variant, or *less than significant.* No mitigation measures are necessary. Like the proposed project and variant, the Reduced Development Alternative's cumulative impact would be *less than significant*. No mitigation measures are necessary.

Biological Resources

India Basin Shoreline Park and 900 Innes Properties

The Reduced Development Alternative would have less potential than the proposed project and variant for impacts on biological resources at the India Basin Shoreline Park and 900 Innes properties. This alternative would

include the same on-land recreational and commercial development and associated parking and access on the India Basin Shoreline Park and 900 Innes properties as the proposed project; however, the in-water redevelopment would not include a new pier and dock extending from the India Basin Shoreline Park property. The removal of this dock extending from the India Basin Shoreline Park property would reduce potential underwater noise impacts on marine mammals and fish. Removal of the new pier and dock would improve the habitat value of the India Basin shoreline as a migratory corridor for marine mammals and other species, and would result in a reduction in potential impacts on open water habitat and jurisdictional waters.

India Basin Open Space and 700 Innes Properties

The Reduced Development Alternative would have a lower potential than the proposed project and variant for impacts on biological resources at the India Basin Open Space and 700 Innes properties. This alternative would include residential, commercial (retail, office, and R&D), institutional/education, parking, and a reduced recreational/open space uses on the 700 Innes property; however, the total square footage of development would be reduced by approximately 50 percent. Less development would result in less greenfield development, which in turn would reduce the potential for degradation of the surrounding habitat (open water/tidal marsh/coastal scrub) from trash and domestic animals. However, no enhancements would be made to the India Basin Open Space and it would remain in its current condition. The reduction of human presence would make this portion of the India Basin shoreline more attractive to special-status and common species that are easily deterred by humans, and would improve the value of this section of the India Basin shoreline as a migratory corridor for bird species.

Under this alternative, the proposed heights of the structures on the 700 Innes property would be lowered relative to the proposed project and variant at the proposed tower locations and throughout the rest of this property up to a maximum of 75 feet tall. Reducing the height of towers would reduce the potential for bird collisions. The reduced bird collision potential would increase the value of this section of the India Basin shoreline as a migratory corridor for birds.

Therefore, the Reduced Development Alternative would have similar impacts as the proposed project and the variant at the India Basin Open Space and 700 Innes properties related to conflicts with local policies or ordinances protecting biological resources and conflicts with habitat conservation plans, natural community conservation plans, or other approved habitat conservation plans. However, this alternative would have less impacts relating to effects on candidate, sensitive, or special-status species; riparian habitats or sensitive natural communities; federally protected wetlands; and interference with the movement of migratory fish or wildlife species.

Overall Impact Conclusion

Overall, compared to the proposed project or the variant, which would have an impact on biological resources of less than significant with mitigation, the Reduced Development Alternative's impact on biological resources would be less with regard to effects on candidate, sensitive, or special-status species; riparian habitats or sensitive natural communities; federally protected wetlands; and interference with the movement of migratory fish or wildlife species and conflicts with habitat conservation plans, natural community conservation plans, or other approved habitat conservation plans. Similar to the proposed project or the variant, the following mitigation measures would apply to the Reduced Development Alternative:

- M-BI-1a ("Prepare and Implement a Hydroacoustic Monitoring Program for Special-Status Fish and Marine Mammals")
- M-BI-1b ("Implement Avoidance and Minimization Measures for Special-Status Species")
- M-BI-1c ("Prepare and Implement a Vegetation Restoration Plan and Compensatory Mitigation")
- M-HY-1a ("Monitor Turbidity during Construction")
- M-HY-1b ("Implement Pile Removal Best Management Practices")

Implementation of these mitigation measures would reduce the project-level and cumulative biological impacts of the Reduced Development Alternative to *less than significant with mitigation*, the same as under the proposed project or the variant.

Hydrology and Water Quality

India Basin Shoreline Park and 900 Innes Properties

Development proposed for the India Basin Shoreline Park and 900 Innes properties under the Reduced Development Alternative would be the same as that for the proposed project and variant, except the in-water redevelopment would not include a new pier and dock extending from the India Basin Shoreline Park property. Accordingly, impacts related to water quality and WDRs would be substantially the same for the Reduced Development Alternative as for the proposed project and variant and would require the same mitigation measures related to turbidity monitoring and pile removal BMPs.

Impacts related to altering the existing drainage pattern and increasing the rate and amount of surface runoff, stormwater runoff and management, and placement of structures within the 100-year flood hazard area would be the same for the Reduced Development Alternative as for the proposed project and variant, because similar development is proposed for the India Basin Shoreline Park and 900 Innes properties under each of these alternatives.

India Basin Open Space Property

Unlike the proposed project or variant, no construction or in-water work would occur at the India Basin Open Space property under the Reduced Development Alternative. Therefore, construction and operation under this alternative would result in no impacts related to water quality or exceedance of WDRs, or to altering the existing drainage pattern or increasing the rate and amount of surface runoff. Stormwater impacts would be less than significant and would be the same for the Reduced Development Alternative as for the proposed project or variant because stormwater would continue to flow overland and be self-treating under each of these alternatives. Impacts from the placement of structures within the 100-year flood hazard area would be *less than significant* and would be the same for the Reduced Development Alternative as under the proposed project or variant because no structures would be placed within the 100-year flood hazard area under each of these alternatives. No mitigation measures are necessary.

700 Innes Property

The Reduced Development Alternative would cover a similar building footprint, but with 50 percent less overall gsf which would result in similar, but less impervious area than the proposed project or variant because development would be reduced. Impacts related to altering existing drainage patterns, increasing the rate and amount of surface runoff, and stormwater runoff and management would be similar to those of the proposed project and variant because proposed stormwater facilities under the Reduced Development Alternative would be designed to conform to the City's stormwater management requirements, resulting in less-than-significant impacts on hydrology.

Impacts related to the placement of structures within the 100-year flood hazard area would be less than significant and would be the same for the Reduced Development Alternative as for the proposed project or variant because no structures would be placed within the 100-year flood hazard area under any of these alternatives. Similar to the proposed project and variant, potential water quality impacts from land-based construction work and groundwater dewatering would be reduced under the Reduced Development Alternative to less than significant given compliance with existing water quality control measures required under the general construction permit, construction site runoff permit, and batch wastewater discharge permit.

The Reduced Development Alternative would not cause an increase in stormwater pollutants discharged to the Bay at this property, given compliance with the City's regulatory and permitting requirements regarding stormwater (NPDES Phase II MS4 permit, Stormwater Management Ordinance, SMR, and industrial general stormwater permit). Wastewater discharged to the combined sewer system would be treated in accordance with the City's NDPES permit and recycled water generated on-site would be treated to Title 22 requirements. Therefore, the operational impact of the Reduced Development Alternative related to a violation of water quality standards or WDRs would be the same as the impact of the proposed project and the variant.

Overall Impact Conclusion

The following mitigation measures described in Section 3.15, "Hydrology and Water Quality," would also apply to the Reduced Development Alternative:

- M-HY-1a ("Monitor Turbidity during Construction")
- M-HY-1b ("Implement Pile Removal Best Management Practices")
- M-HY-1c ("Dredging Equipment Requirement")

With implementation of these mitigation measures, the Reduced Development Alternative's overall project-level and cumulative impacts on hydrology and water quality would be *less than significant with mitigation*, the same as under the proposed project or the variant.

Hazards and Hazardous Materials

India Basin Shoreline Park Property

The Reduced Development Alternative would have an equal potential to the proposed project and variant for impacts on hazards and hazardous materials at the India Basin Shoreline Park property. The limits and type of construction would be similar, and future operational uses would be the same with respect to their potential for

use of hazardous materials. Mitigation Measures M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line"), M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line"), and M-HZ-2c ("Prepare and Implement a Remedial Action Plan for the 900 Innes Property") would also be applicable to this alternative and would result in potential impacts related to hazards and hazardous materials similar to either the proposed project or the variant.

900 Innes Property

The Reduced Development Alternative would have an equal potential to the proposed project and variant for impacts on hazards and hazardous materials at the 900 Innes property because the building footprints, limits and type of construction would be similar, and future operational uses would be the same with respect to their potential for use of hazardous materials. Mitigation Measures M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line"), M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line"), and M-HZ-2c ("Prepare and Implement a Remedial Action Plan for the 900 Innes Property"), and compliance with BAAQMD Regulation 11, Rule 2 would also be applicable to this alternative, resulting in potential impacts related to hazards and hazardous materials similar to those of the proposed project or the variant.

India Basin Open Space Property

The Reduced Development Alternative would have fewer impacts related to hazards and hazardous materials at the India Basin Open Space property than the proposed project and variant because no construction would occur and operational uses would not change from existing conditions. As such, the potential uses of hazardous materials during construction and operation would be less. Because no construction would occur at this property under this alternative, the existing contaminants in soil, sediment, and groundwater would not be disturbed; therefore, the potential for exposure to construction workers or release of contaminants would be less than under the proposed project or variant. However, under this alternative, Mitigation Measures M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line") and M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line") would not be applicable at the India Basin Open Space property; therefore, existing contamination would remain, and could pose a risk to future site users.

Despite the potential of the Reduced Development Alternative to expose future site users to these potential risks, this alternative would have less of an impact than either the proposed project or the variant because this property would be left in its existing condition and no construction would occur.

700 Innes Property

The Reduced Development Alternative would have a similar potential as the proposed project and variant for impacts related to hazardous materials at the 700 Innes property because the construction of the foundations, buildings and operational uses would have similar potential for use of hazardous materials. While the overall gsf of the development is approximately 50 percent less, the building footprints and ground disturbance would be similar under the Reduced Development Alternative compared to the proposed project and variant. Mitigation Measures M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water

Line"), and M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line"), and compliance with BAAQMD Regulation 11, Rule 2 would also be applicable to this alternative and would result in potential impacts related to hazards and hazardous materials similar to those of the proposed project and the variant.

Overall Impact Conclusion

The following mitigation measures described in Section 3.16, "Hazards and Hazardous Materials," would also apply to the Reduced Development Alternative:

- M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line")
- M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line")
- M-HZ-2c ("Prepare and Implement a Remedial Action Plan for the 900 Innes Property")

With implementation of these mitigation measures, the Reduced Development Alternative's overall project-level and cumulative impact on hazards and hazardous materials would be *less than significant with mitigation*, the same as under the proposed project or the variant.

Other Topics

The Notice of Preparation/Initial Study (NOP/IS) and public scoping process concluded that the proposed project or variant would have no impacts or less-than-significant impacts in the following analysis areas:

- Geology and Soils
- Mineral and Energy Resources
- Agriculture and Forestry Resources

The Reduced Development Alternative would result in no impacts or less-than-significant impacts related to any of the above-listed environmental topics, because this alternative would result in no changes to existing site conditions with respect to these topics.

4.6 FULL PRESERVATION ALTERNATIVE

4.6.1 San Francisco Recreation and Parks Department Development

India Basin Shoreline Park and 900 Innes Properties

This alternative would have exactly the same components as the proposed project and variant to 900 Innes Avenue and India Basin Shoreline Park except that cultural resources associated with the India Basin Scow Schooner Boatyard cultural landscape would be preserved (Figure 4-5).

The Full Preservation Alternative seeks to rehabilitate and retain significant features of the India Basin Scow Schooner Boatyard cultural landscape, which is eligible for listing in the California Register of Historical Resources, in order to maintain the historical significance of the cultural landscape while allowing for modest alterations to accommodate a new park and recreation area. Similar to the proposed project and variant, the Full Preservation Alternative would rehabilitate the San Francisco Landmark Shipwright's Cottage to the Secretary of the Interior's Standards for the Treatment of Historic Resources (SOI Standards) and retain the following significant features of the landscape: circulation pathways, storage and staging areas, marine way metal rails, ship hulls associated with the Hunters Point Ship Graveyard, views, and general site grade.

The Full Preservation Alternative, similar to the proposed project and variant, would remove the water fence posts and replace them in kind, if feasible, with nontoxic substitutes.[3] The original circulation paths and the site's topography would be altered with new surface materials, stepped grading and general site grading, and plantings for use in a new park. However, the character-defining circulation pathways would be maintained and distinguished from the new circulation paths, and the general slope of the landscape would be maintained. The Full Preservation Alternative might entail driving piles into the archeological remains of the Hunters Point Ship Graveyard to support the proposed park features but would ensure that portions of at least one of the hulls was visible to the public and would be included in a public interpretation program.

Under the Full Preservation Alternative, Boatyard Office Building and Tool Shed and Water Tank building would be rehabilitated according to the SOI Standards. This would include maintaining the character-defining features of both buildings, such as their massing, roof forms, wood cladding, and window and door openings. Both buildings would be rehabilitated for reuse as functioning buildings and would convey their historical uses within the cultural landscape. Proposed plantings would be low-scale native plants along the hillside that would retain the industrial character of the cultural landscape. New park furniture, such as park benches and pathways, would be designed to reflect the industrial character of the landscape. The Griffith Street right-of-way alignment and width would be maintained and would be designed as a stepped path rather than wood stairs. Both the new Overlook Building and the new "maker space"/shop building would utilize material salvaged from the non-contributing buildings within the cultural landscape that are proposed for demolition and their design would maintain the industrial character of the cultural landscape.

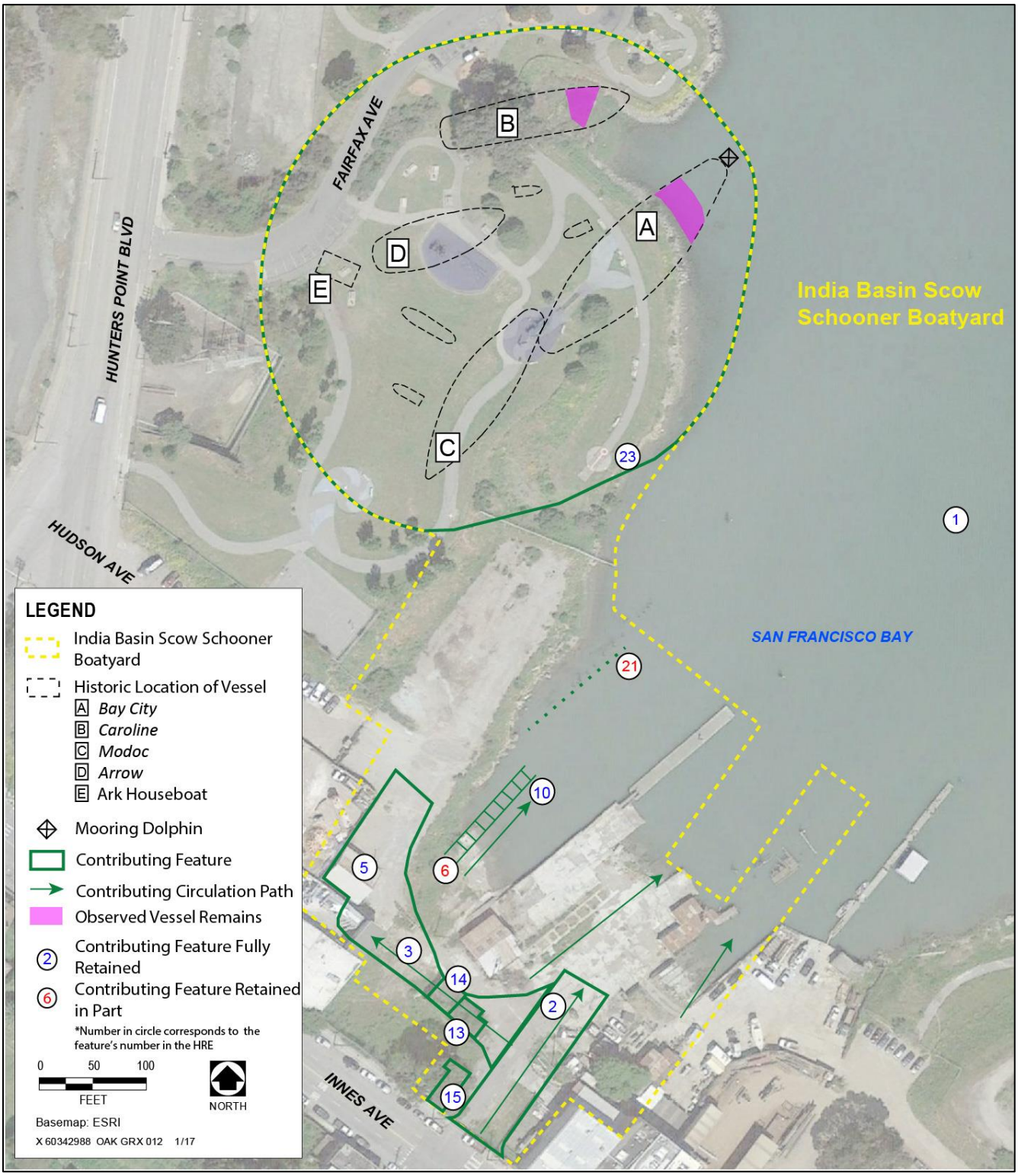
[3] The existing piles that comprised the water fence were previously treated with creosote, a toxic substance. The San Francisco Bay Conservation and Development Commission requires that these creosote-treated piles be removed when such piles are connected to proposed projects. Replacement feasibility of the piles depends upon both regulatory and engineering constraints.

The Full Preservation Alternative maintains the integrity of design, materials, association, and feeling of the landscape by retaining significant features of the landscape and rehabilitating the three significant buildings to the SOI Standards.

4.6.2 BUILD Development

India Basin Open Space and 700 Innes Properties

The full preservation alternative would be the same as the proposed project or variant in terms of proposed development, including the relocation and rehabilitation of 702 Earl Street.



Source: GGN, 2017

Figure 4-5 **Full Preservation Alternative (India Basin Shoreline Park and 900 Innes Properties)**

4.6.3 Impacts of the Full Preservation Alternative

Impacts under the Full Preservation Alternative would be similar to impacts under the proposed project or the variant with respect to the following environmental topics: Land Use and Planning, Aesthetics, Population and Housing, Transportation and Circulation, Noise, Air Quality, GHG Emissions, Wind, Shadow, Recreation, Utilities and Service Systems, Public Services, Biological Resources, and Hydrology and Water Quality.

Cultural Resources

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

There are no architectural historical resources on the India Basin Shoreline Park or the India Basin Open Space properties. The Full Preservation Alternative differs from the proposed project and variant in the treatment of the India Basin Scow Schooner Boatyard cultural landscape at 900 Innes Avenue. The treatment of 702 Earl Street and the Shipwright's Cottage as individual historic resources would remain the same as under the proposed project and variant.

Under the Full Preservation Alternative, all significant buildings that contribute to the India Basin Scow Schooner Boatyard cultural landscape would be rehabilitated to SOI Standards, and new construction and plantings would be designed to maintain the industrial character of the landscape (Figure 4-5). Table 4-3 summarizes the proposed changes to the character-defining features of the historical resource under the Full Preservation Alternative.

Table 4-3: Impacts of the Full Preservation Alternative on Character-Defining Features of the India Basin Scow Schooner Boatyard Cultural Landscape

No. in HRE	Name of Feature/Address	Impact of the Full Preservation Alternative
1	India Basin/San Francisco Bay	Shoreline retained
2	Griffith Street right-of-way	Altered; portion realigned, grade change, stepped path
3	Path between Griffith Street and west marine ways	Retained
5	Historic storage and staging yard	Retained
6	West marine way tracks (wood)	Wood elements replaced; metal portions retained
10	Circulation routes and water access at marine ways	Routes and access alignment retained
13	Boatyard Office building	Retained; rehabilitated to the SOI Standards
14	Tool Shed and Water Tank building	Retained; rehabilitated to the SOI Standards
15	Shipwright's Cottage	Retained; rehabilitated to the SOI Standards
21	Water fence posts	Would be removed; attempt would be made to replace these piles in place
N/A	Views east toward San Francisco Bay and the East Bay hills	Views retained
N/A	Gradual slope from Innes Avenue to India Basin	Slope retained; site would be graded
23	Hunters Point Ship Graveyard (archeological)	Retained; Piles would be installed to support the Marineway and the viewing deck, each which lay over the remains of an identified ship hull.

Notes: HRE = historical resource evaluation; N/A = not applicable
Source: Compiled by AECOM in 2017

The character-defining features of the Boatyard Office Building are the following: the location of the building within the landscape, the flat roof with wide eaves and broad fascia boards, one-story L-shaped massing, wood-clad wood-frame construction, and small circular porthole window openings (San Francisco, 2017b). The character-defining features of the Tool Shed and Water Tank building are the following: the location of the building within the landscape, the prominent shed roof, one-story rectangular massing, wood-clad wood-frame construction, and wide door opening facing east (San Francisco, 2017b). For both buildings under the Full Preservation Alternative, all of these features would be retained or replaced-in-kind per SOI Standards.

Under this alternative, new plantings would be native and planted naturalistically on the hillside in order to maintain the historic character of the waterfront site. Additionally, the Griffith Street right-of-way would be interpreted by a stepped path that more closely matches the existing gravel roadway rather than a wood staircase as with the proposed project and variant.

Under the Full Preservation Alternative, most of the character-defining features of the cultural landscape would be rehabilitated to SOI Standards or retained. However, the introduction of new buildings, structures, and pathways along with some removal of and alteration to significant features would affect the landscape's integrity of setting, design, and materials. Additionally, as under the proposed project and the variant, construction activities have the potential to damage significant features of the cultural landscape.

Implementation of Mitigation Measures M-CR-1a, M-CR-1b, M-CR-1c, and, M-CR-1e would lessen impacts of the Full Preservation Alternative on the India Basin Scow Schooner Boatyard cultural landscape to such a degree that the resource would still be able to convey the characteristics that justify its eligibility for listing in the CRHR. Thus, the overall impact on the India Basin Scow Schooner Boatyard cultural landscape would be *less than significant with mitigation*, instead of significant and unavoidable with mitigation as under the proposed project and variant.

The Full Preservation Alternative would be the same as the proposed project and variant in terms of archeological impacts. Specifically, because approximately the same amount of proposed ground-disturbing activities would occur across all properties under the Full Preservation Alternative, the potential to affect archeological resources would not be eliminated and Mitigation Measures M-CR-2a ("Undertake an Archeological Testing Program") and M-CR-3a ("Implement Legally Required Measures in the Event of Inadvertent Discovery of Human Remains") would apply to this alternative. Implementation of these mitigation measures would reduce the project-level impacts on archeological resources to *less than significant with mitigation* and would not contribute to any cumulative impact related to archeological resources, similar to the proposed project and variant.

Hazards and Hazardous Materials

India Basin Shoreline Park Property

The Full Preservation Alternative would have an equal potential to the proposed project and variant for impacts on hazards and hazardous materials at the India Basin Shoreline Park property. The limits and type of construction would be similar, and future operational uses would be the same with respect to their potential for use of hazardous materials. Mitigation Measures M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line"), M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line"), and M-HZ-2c ("Prepare and

Implement a Remedial Action Plan for the 900 Innes Property") would also be applicable to this alternative and would result in potential impacts related to hazards and hazardous materials similar to either the proposed project or the variant.

900 Innes Property

The Full Preservation Alternative would have a similar potential to the proposed project and variant for impacts on hazards and hazardous materials at the 900 Innes property because the building footprints, limits and type of construction would be similar, and future operational uses would be the same with respect to their potential for use of hazardous materials. Fewer buildings containing hazardous building materials such as asbestos-containing materials would be demolished under this alternative compared to the proposed project or variant, however, the buildings would be rehabilitated under this alternative, which would include removal of all asbestos-containing materials prior to any renovation activities. Compliance with BAAQMD Regulation 11, Rule 2 is applicable to both renovation and demolition activities. Mitigation Measures M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line"), M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line"), and M-HZ-2c ("Prepare and Implement a Remedial Action Plan for the 900 Innes Property"), and compliance with BAAQMD Regulation 11, Rule 2 would also be applicable to this alternative, resulting in impacts related to hazards and hazardous materials similar to those of the proposed project or the variant.

India Basin Open Space Property

The Full Preservation Alternative would have an equal potential to the proposed project and variant for impacts on hazards and hazardous materials at the India Basin Open Space property because the building footprints, limits and type of construction would be similar, and future operational uses would be the same with respect to their potential for use of hazardous materials. Mitigation Measures M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line"), M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line"), and M-HZ-2c ("Prepare and Implement a Remedial Action Plan for the 900 Innes Property") would also be applicable to this alternative and would result in impacts related to hazards and hazardous materials similar to either the proposed project or the variant.

700 Innes Property

The Full Preservation Alternative would have an equal potential as the proposed project and variant for impacts related to hazardous materials at the 700 Innes property, because the building footprints, limits and type of construction would be similar, and future operational uses would be the same with respect to their potential for use of hazardous materials. Mitigation Measures M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line"), and M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line"), and compliance with BAAQMD Regulation 11, Rule 2 would also be applicable to this alternative and would result in impacts related to hazards and hazardous materials similar to those of the proposed project and the variant.

Overall Impact Conclusion

The following mitigation measures described in Section 3.16, "Hazards and Hazardous Materials," would also apply to the Full Preservation Alternative:

- M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line")
- M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line")
- M-HZ-2c ("Prepare and Implement a Remedial Action Plan for the 900 Innes Property")

With implementation of these mitigation measures, the Full Preservation Alternative's overall project-level and cumulative impact on hazards and hazardous materials would be *less than significant with mitigation*, the same as under the proposed project or the variant.

Other Topics

The Notice of Preparation/Initial Study (NOP/IS) and public scoping process concluded that the proposed project or variant would have no impacts or less-than-significant impacts in the following analysis areas:

- Geology and Soils
- Mineral and Energy Resources
- Agriculture and Forestry Resources

The Full Preservation Alternative would result in no impacts or less-than-significant impacts related to any of the above-listed environmental topics, because this alternative would result in no changes to existing site conditions with respect to these topics.

4.7 PARTIAL PRESERVATION ALTERNATIVE

4.7.1 San Francisco Recreation and Parks Department Development

India Basin Shoreline Park and 900 Innes Properties

This alternative would have exactly the same components as the proposed project and variant except that cultural resources associated with the India Basin Scow Schooner Boatyard cultural landscape would be partially preserved (Figure 4-6).

The Partial Preservation Alternative seeks to rehabilitate and retain significant features of the California Register of Historical Resources-eligible India Basin Scow Schooner Boatyard cultural landscape, in order to maintain the historical significance of the cultural landscape while allowing for the creation of a new accessible park and recreation area. Similar to the proposed project and variant, the Partial Preservation Alternative would rehabilitate the San Francisco Landmark Shipwright's Cottage to the SOI Standards and retain the following significant features of the landscape: circulation pathways, storage and staging areas, marine way metal rails, ship hulls associated with the Hunters Point Ship Graveyard, views, and general site grade.

The Partial Preservation Alternative, similar to the proposed project and variant, would remove the water fence posts and replace them in kind, if feasible, with nontoxic substitutes.[4] The original circulation paths and the site's topography would be altered with new surface materials, stepped grading and general site grading, and plantings for use in a new park. However, the character-defining circulation pathways would be maintained and distinguished from the new circulation paths and the general slope of the landscape would be maintained. The proposed pedestrian path and stairs located in the historic Griffith Street alignment would be wider than, and use a different material treatment than, the two new pedestrian pathways northwest of the Griffith Street/Innes Avenue intersection that would connect Innes Avenue to the park interior. The Partial Preservation Alternative might entail driving piles into the archeological remains of the Hunters Point Ship Graveyard to support the proposed park features but would ensure that portions of at least one of the hulls was visible to the public and would be included in a public interpretation program.

Differing from the proposed project and variant, the Partial Preservation Alternative would retain the Boatyard Office Building, a significant feature of the landscape. While the building may not be rehabilitated to the SOI Standards under this alternative, some character-defining features of the Boatyard Office building would be retained in order to ensure that the building remains a significant feature of the cultural landscape. At a minimum, this would include retention or replacement-in-kind of a portion of the roof form, wood frame structure, and wood cladding so that the massing of the building is still expressed. If possible, the porthole openings on the southeast and southwest façade would be retained.

The Partial Preservation Alternative proposes to demolish the significant Tool Shed and Water Tank Building and to interpret it within the landscape. This may include interpreting the location of the building by incorporating an outline of the building into the ADA path and park design, keeping all or a portion of the foundation, or retaining or replacing-in-kind a portion of the building in order to convey the building's massing, roof form and materials as feasible.

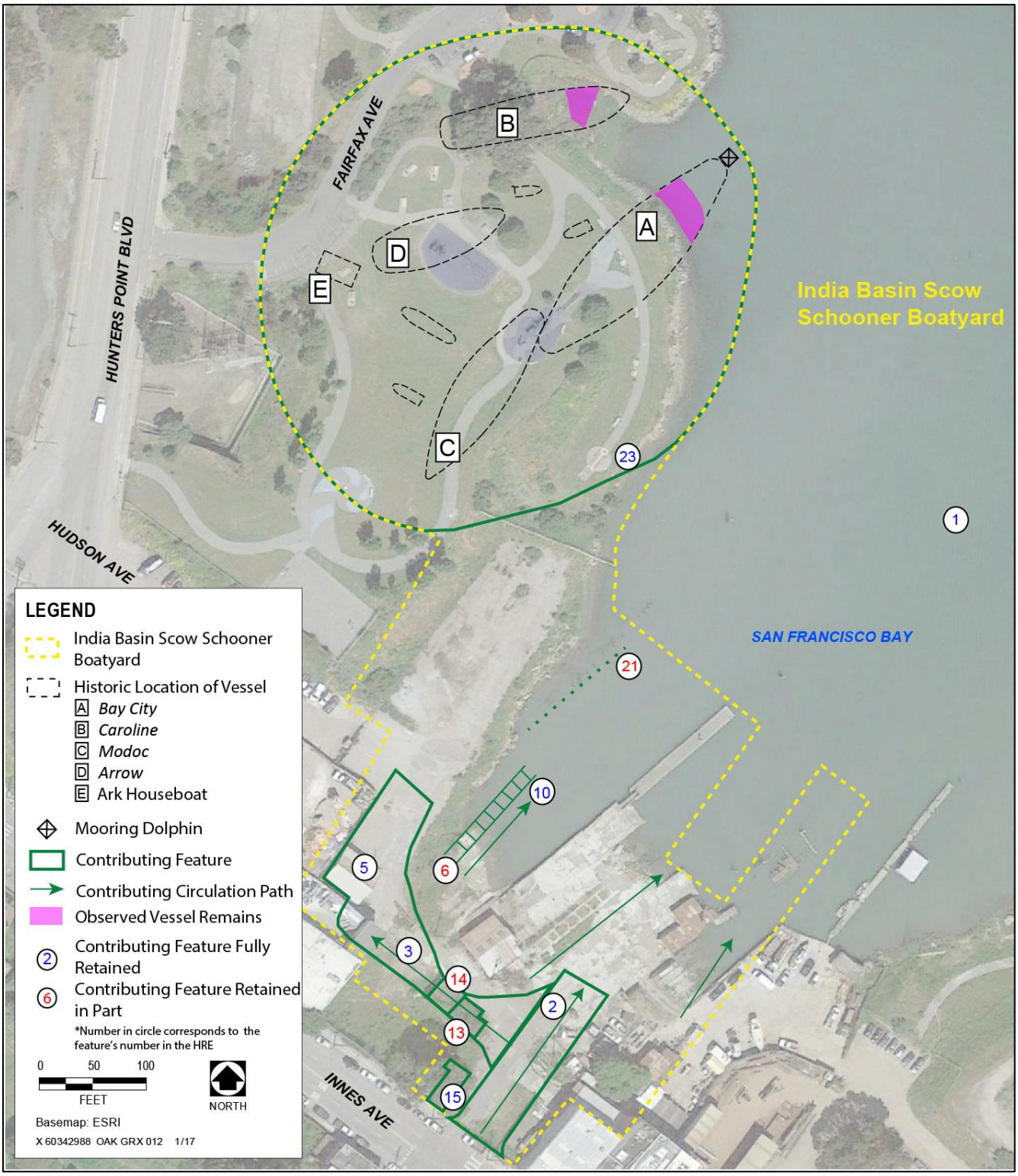
Compared to the proposed project and variant, the Partial Preservation Alternative aims to maintain the integrity of location, design, association, and feeling of the cultural landscape by retaining the Boatyard Office Building as a significant structure to the cultural landscape and interpreting the Tool Shed and Boatyard Office Building in order to maintain the relationship between the Shipwright's Cottage and the significant landscape features along the shoreline.

4.7.2 BUILD Development

India Basin Open Space and 700 Innes Properties

The Partial Preservation Alternative would be the same as the proposed project or variant in terms of proposed development, including the relocation and rehabilitation of 702 Earl Street.

[4] The existing piles that comprised the water fence were previously treated with creosote, a toxic substance. The San Francisco Bay Conservation and Development Commission requires that these creosote-treated piles be removed when such piles are connected to proposed projects. Replacement feasibility of the piles depends upon both regulatory and engineering constraints.



Source: GGN, 2017

Figure 4-6 **Partial Preservation Alternative (India Basin Shoreline Park and 900 Innes Properties)**

4.7.3 Impacts of the Partial Preservation Alternative

Impacts under the Partial Preservation Alternative would be similar to impacts under the proposed project or the variant with respect to the following environmental topics: Land Use and Planning, Aesthetics, Population and Housing, Transportation and Circulation, Noise, Air Quality, GHG Emissions, Wind, Shadow, Recreation, Utilities and Service Systems, Public Services, Biological Resources, and Hydrology and Water Quality.

Cultural Resources

India Basin Shoreline Park, 900 Innes, India Basin Open Space, and 700 Innes Properties

There are no architectural historical resources on the India Basin Shoreline Park or the India Basin Open Space properties. The Partial Preservation Alternative differs from the proposed project and variant in the treatment of the India Basin Scow Schooner Boatyard cultural landscape at 900 Innes Avenue. Under the Partial Preservation Alternative, the significant features of the India Basin Scow Schooner Boatyard cultural landscape would receive the same treatment as under the proposed project and variant except for the retention of the Boatyard Office Building and the interpretation of the Tool Shed and Water Tank building (Figure 4-6). The treatment of 702 Earl Street and the Shipwright's Cottage as individual historic resources would remain the same as under the proposed project and variant. Table 4-4 summarizes the proposed changes to the character-defining features of the historical resource under the Partial Preservation Alternative.

Table 4-4: Impacts of the Partial Preservation Alternative on Character-Defining Features of the India Basin Scow Schooner Boatyard Cultural Landscape

No. in HRE	Name of Feature/Address	Impact of the Partial Preservation Alternative
1	India Basin/San Francisco Bay	Shoreline retained
2	Griffith Street right-of-way	Altered; portion realigned, grade change, partial stairs
3	Path between Griffith Street and west marine ways	Retained
5	Historic storage and staging yard	Retained
6	West marine way tracks (wood)	Wood elements replaced; metal portions retained
10	Circulation routes and water access at marine ways	Routes and access alignment retained
13	Boatyard office building	Retained
14	Tool Shed and Water Tank building	Demolished; interpreted
15	Shipwright's Cottage	Retained; rehabilitated
21	Water fence posts	Would be removed; attempt would be made to replace these piles in place, if possible
N/A	Views east toward San Francisco Bay and the East Bay hills	Views retained
N/A	Gradual slope from Innes Avenue to India Basin	Slope retained; site would be graded
23	Hunters Point Ship Graveyard (archeological)	Retained; Piles would be installed to support the Marineway and viewing deck, each of which lay over the remains of an identified ship hull.

Notes: HRE = historical resource evaluation; N/A = not applicable
Source: Compiled by AECOM in 2017

The Partial Preservation Alternative proposes to retain character-defining features of the Boatyard Office building, so that it would remain a significant feature of the cultural landscape. The character-defining features of the Boatyard Office Building are the following: the location of the building within the landscape, the flat roof with wide eaves and broad fascia boards, one-story L-shaped massing, wood-clad wood-frame construction, and small circular porthole window openings (San Francisco, 2017b). Under the Partial Preservation Alternative, at minimum, a portion of the roof form, a portion of the wood frame structure, and a portion of the wood cladding would be retained or replaced-in-kind, so that the massing and materials of the building is still expressed. For example, this may include the retention of an open-frame or partially open-frame roof structure with wide eaves supported by a wood frame structure with a portion of the structure clad in retained or replaced-in-kind wood cladding. If possible, the porthole openings on the southeast and southwest façade would be retained.

Similar to the proposed project and variant, under the Partial Preservation Alternative, alteration of character-defining features of the landscape and the introduction of new buildings, structures, pathways, and plantings would affect the landscape's integrity of setting, design, materials, feeling, and association. However, retention of the Boatyard Office Building and interpretation of the Tool Shed and Water Tank Building would help to retain integrity of location, design, association, and feeling of the cultural landscape by supporting the connection between the Shipwright's Cottage and the significant landscape features along the shoreline. Additionally, as with the proposed project and variant, construction activities have the potential to damage significant features of the cultural landscape.

Implementation of Mitigation Measures M-CR-1a, M-CR-1b, M-CR-1c, and, M-CR-1e would lessen impacts of the Partial Preservation Alternative on the India Basin Scow Schooner Boatyard cultural landscape to such a degree that the resource would still be able to convey the characteristics that justify its eligibility for listing in the CRHR. Thus, the overall impact on the India Basin Scow Schooner Boatyard cultural landscape would be *less than significant with mitigation*, instead of significant and unavoidable with mitigation as under the proposed project and variant.

The Partial Preservation Alternative would be the same as the proposed project and variant in terms of archeological impacts. Specifically because approximately the same amount of proposed ground-disturbing activities would occur across all properties under the Partial Preservation Alternative, the potential to affect archeological resources would not be eliminated and Mitigation Measures M-CR-2a ("Undertake an Archeological Testing Program") and M-CR-3a ("Implement Legally Required Measures in the Event of Inadvertent Discovery of Human Remains") would apply to this alternative. Implementation of these mitigation measures would reduce the potential project-level impacts on archeological resources to *less than significant with mitigation* and would not contribute to any cumulative impact related to archeological resources, similar to the proposed project and variant.

Hazards and Hazardous Materials

India Basin Shoreline Park Property

The Partial Preservation Alternative would have an equal potential to the proposed project and variant for impacts on hazards and hazardous materials at the India Basin Shoreline Park property. The limits and type of construction would be similar, and future operational uses would be the same with respect to their potential for use of hazardous materials. Mitigation Measures M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for

Areas Above the Mean High-Water Line"), M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line"), and M-HZ-2c ("Prepare and Implement a Remedial Action Plan for the 900 Innes Property") would also be applicable to this alternative and would result in impacts related to hazards and hazardous materials similar to either the proposed project or the variant.

900 Innes Property

The Partial Preservation Alternative would have a similar potential to the proposed project and variant for impacts on hazards and hazardous materials at the 900 Innes property because the building footprints, limits and type of construction would be similar, and future operational uses would be the same with respect to their potential for use of hazardous materials. Fewer buildings containing hazardous building materials such as asbestos-containing materials would be demolished under this alternative compared to the proposed project or variant, however, the buildings would be rehabilitated under this alternative, which would include removal of all asbestos-containing materials prior to any renovation activities. Compliance with BAAQMD Regulation 11, Rule 2 is applicable to both renovation and demolition activities. Mitigation Measures M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line"), M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line"), and M-HZ-2c ("Prepare and Implement a Remedial Action Plan for the 900 Innes Property"), and compliance with BAAQMD Regulation 11, Rule 2 would also be applicable to this alternative, resulting in impacts related to hazards and hazardous materials similar to those of the proposed project or the variant.

India Basin Open Space Property

The Partial Preservation Alternative would have an equal potential to the proposed project and variant for impacts on hazards and hazardous materials at the India Basin Open Space property because the building footprints, limits and type of construction would be similar, and future operational uses would be the same with respect to their potential for use of hazardous materials. Mitigation Measures M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line"), M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line"), and M-HZ-2c ("Prepare and Implement a Remedial Action Plan for the 900 Innes Property") would also be applicable to this alternative and would result in impacts related to hazards and hazardous materials similar to either the proposed project or the variant.

700 Innes Property

The Partial Preservation Alternative would have an equal potential as the proposed project and variant for impacts related to hazardous materials at the 700 Innes property, because the building footprints, limits and type of construction would be similar, and future operational uses would be the same with respect to their potential for use of hazardous materials. Mitigation Measures M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line"), and M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line"), and compliance with BAAQMD Regulation 11, Rule 2 would also be applicable to this alternative and would result in impacts related to hazards and hazardous materials similar to those of the proposed project and the variant.

Overall Impact Conclusion

The following mitigation measures described in Section 3.16, "Hazards and Hazardous Materials," would also apply to the Partial Preservation Alternative:

- M-HZ-2a ("Prepare and Implement a Site Mitigation Plan for Areas Above the Mean High-Water Line")
- M-HZ-2b ("Prepare and Implement a Nearshore Sediment and Materials Management Plan for Areas Below the Mean High-Water Line")
- M-HZ-2c ("Prepare and Implement a Remedial Action Plan for the 900 Innes Property")

With implementation of these mitigation measures, the Partial Preservation Alternative's overall project-level and cumulative impact on hazards and hazardous materials would be *less than significant with mitigation*, the same as under the proposed project or the variant.

Other Topics

The Notice of Preparation/Initial Study (NOP/IS) and public scoping process concluded that the proposed project or variant would have no impacts or less-than-significant impacts in the following analysis areas:

- Geology and Soils
- Mineral and Energy Resources
- Agriculture and Forestry Resources

The Partial Preservation Alternative would result in no impacts or less-than-significant impacts related to any of the above-listed environmental topics, because this alternative would result in no changes to existing site conditions with respect to these topics.

4.8 ABILITY OF THE ALTERNATIVES TO MEET PROJECT SPONSOR'S OBJECTIVES

As stated above, CEQA Guidelines Section 15126.6(a) requires that an EIR evaluate "a range of reasonable alternatives to the project, or the location of the project, which would feasibly attain most of the basic project objectives but would avoid or substantially lessen any of the significant effects, and evaluate the comparative merits of the alternatives." A range of potentially feasible alternatives was reviewed in this EIR as governed by the "rule of reason" to foster informed decision-making and public participation (State CEQA Guidelines Section 15126.6[f]). The No Project Alternative is included, as required by State CEQA Guidelines Section 15126.6(e), even though it would not meet the basic project objectives. The Code Compliant Alternative and Reduced Development Alternative are potentially feasible options that would likely meet most but not all of the project objectives. A Full Preservation and Partial Preservation Alternative were also analyzed. Table 4-5 presents the ability of each alternative to meet the project objectives.

Table 4-5: Ability of Alternatives to Meet Project Objectives

Project Sponsors' Objectives	Proposed Project	Variant	No Project	Code Compliant Alternative	Reduced Development Alternative	Full Preservation Alternative	Partial Preservation Alternative
RPD (Neighborhood & Community)							
Create a neighborhood center that stimulates meaningful and inclusive local, citywide, and regional community engagement.	Yes	Yes	No	Yes	Yes	Yes	Yes
Develop a seamless park user experience along India Basin that ensures a high level of waterfront and recreation access for neighborhood users, and create a significant amenity on the Bayview/Hunters Point recreation loop/waterfront.	Yes	Yes	No	Yes	Yes	Yes	Yes
Construct more open space to address the population growth in a high-need and emerging neighborhood, and improve recreational amenities to existing residents.	Yes	Yes	No	Yes	Yes	Yes	Yes
Create an opportunity for the City to address issues of environmental justice, equity, and inclusion in parks and open space for the India Basin and greater Bayview Hunters Point communities.	Yes	Yes	No	Yes	Yes	Yes	Yes

Project Sponsors' Objectives	Proposed Project	Variant	No Project	Code Compliant Alternative	Reduced Development Alternative	Full Preservation Alternative	Partial Preservation Alternative
Stimulate local hiring through job training for construction activities, park-related concession opportunities, and recreation leadership positions.	Yes	Yes	No	Yes	Yes	Yes	Yes
Create a safe environment for park users that includes increased visibility of park spaces, including direct sightlines from bordering streets to the water.	Yes	Yes	No	Yes	Yes	No	Partially,(retention of the Boatyard Office building in its current location would affect sightlines to the waterfront.)
RPD (Environment & Sustainability)							
Prioritize environmental cleanup to promote public health, safety, and welfare.	Yes	Yes	No	Yes	Yes	Yes	Yes
Design a landscape that will be adaptive and resilient alongside anticipated sea-level rise.	Yes	Yes	No	Partially (the India Basin Open Space would not be enhanced)	Partially (the India Basin Open Space would not be enhanced)	Yes	Yes
Conserve and strengthen natural resources, and increase biodiversity and interconnectivity on City parkland, through the expansion of shoreline wetlands and redevelopment of natural upland landscaping.	Yes	Yes	No	Partially (the India Basin Open Space would not be enhanced/Big Green would not be built)	Partially (the India Basin Open Space would not be enhanced/Big Green would not be built)	Yes	Yes
Provide on-site stormwater treatment infrastructure to promote improved Bay water quality.	Yes	Yes	No	Yes	Yes	Yes	Yes
RPD (History & Cultural)							
Preserve and celebrate historic and cultural resources, including the restoration of the historic Shipwright's Cottage and revitalization and interpretation of the historic boatyard cultural landscape at 900 Innes and the associated ship hulls at India Basin Shoreline Park.	Yes	Yes	No	Yes	Yes	Yes	Yes

Project Sponsors' Objectives	Proposed Project	Variant	No Project	Code Compliant Alternative	Reduced Development Alternative	Full Preservation Alternative	Partial Preservation Alternative
Create a Welcome Center featuring the site's shipbuilding heritage and surrounding neighborhood/community history, complemented by a food and beverage concession to serve as a community gathering space and to promote local hiring.	Yes	Yes	No	Yes	Yes	Yes	Yes
Create an entry experience from Innes Avenue that highlights the features of both the cultural and natural landscape, maintains sightlines to the waterfront, and contributes to a seamless park user experience and sense of place as a neighborhood center.	Yes	Yes	No	Yes	Yes	No	Partially,(retention of the Boatyard Office building in its current location would require revisions to site access from Innes and affect sightlines to the waterfront.)
RPD (Recreation & Education)							
Create a center for waterfront programming with a variety of active and passive recreational opportunities, and strengthen the quality of existing parks and facilities.	Yes	Yes	No	Partially (the India Basin Open Space would not be enhanced)	Partially (the India Basin Open Space would not be enhanced)	No	Yes
Expand public access to the Bay and accelerate the development of the Blue Greenway/Bay Trail, by connecting India Basin Shoreline Park, 900 Innes, and India Basin Open Space with all seven properties along the India Basin cove.	Yes	Yes	No	Partially (the India Basin Open Space would not be enhanced)	Partially (the India Basin Open Space would not be enhanced)	Yes	Yes
Provide active recreational programming such as a human-powered boating center, basketball courts, skateboard ramps, bike paths, children's playground, and public beach access.	Yes	Yes	No	Yes	Partially (the dock and pier would not be constructed at India Basin Shoreline Park)	Yes	Yes
Provide passive recreational programming such as bird-watching, barbeque and picnic areas, landscaped/natural hiking paths, and a great lawn.	Yes	Yes	No	Yes	Yes	Yes	Yes

Project Sponsors' Objectives	Proposed Project	Variant	No Project	Code Compliant Alternative	Reduced Development Alternative	Full Preservation Alternative	Partial Preservation Alternative
Construct an educational/"makers" building (the "Shop"), intended to provide recreational arts and shop programming focused on the historic shipbuilding industry.	Yes	Yes	No	Yes	Yes	Yes	Yes
Design park spaces that are safe and inviting and that follow departmental best practices for successful maintenance.	Yes	Yes	No	Yes	Yes	No	No
RPD (Transportation & Infrastructure)							
Provide Class 1 bicycle lane infrastructure to enhance community transportation alternatives.	Yes	Yes	No	Yes	Yes	Yes	Yes
Create publicly accessible Griffith Street site access, linking the neighboring community and new retail to the sites south of 900 Innes.	Yes	Yes	No	Yes	Yes	Yes	Yes
Construct enhanced/signalized crosswalks to park entrances for easier and safer pedestrian access.	Yes	Yes	No	Yes	Yes	Yes	Yes
Create Americans with Disabilities Act (ADA)–accessible pathways providing waterfront access and safe interactions with highly trafficked routes such as the Class 1 bicycle path.	Yes	Yes	No	Yes	Yes	No	Partially (retention of the Boatyard Office building in its current location would require revisions to site access from Innes and may impact the ADA pathway.)
BUILD							
Revitalize a prime but underutilized southeastern waterfront site with a range of uses designed to increase housing at a range of affordability levels and provide increased business and employment opportunities.	Yes	Yes	No	Yes	Partially (this alternative would include approximately half the housing, business, and employment opportunities as either the proposed project or the variant)	Yes	Yes

Project Sponsors' Objectives	Proposed Project	Variant	No Project	Code Compliant Alternative	Reduced Development Alternative	Full Preservation Alternative	Partial Preservation Alternative
Construct high-quality housing with sufficient density to contribute to active uses on the project site while offering a mix of unit types, sizes, and affordability to accommodate a range of potential residents.	Yes	Yes	No	Yes	Partially (this alternative would include approximately half the housing as the proposed project	Yes	Yes
Provide sufficient mixed-use development capacity (in terms of gross floor area and residential unit count) with a range of flexible uses that can respond to market demands and attract the private capital necessary to build out the proposed project in a timely fashion and financially support an array of public benefits, including public open space, a permanent maintenance and operations tax district, community job training and small business development opportunities, public transportation improvements and affordable housing.	Yes	Yes	No	Partially (this alternative would include substantially less open space than either the proposed project or the variant, with no Big Green)	Partially (with approximately half the housing and employment at the 700 Innes property, it is unknown whether this alternative would be able to attract the capital necessary to build out the project in a timely fashion; also, this alternative would include less open space, with no Big Green)	Yes	Yes
Pursue a balanced mix of residential, retail, and office space, as well as R&D space, to support a daytime population adequate to create a viable, vibrant small-scale neighborhood retail district.	Yes	Yes	No	Yes	Partially (with less housing, retail, office space, and R&D space at the 700 Innes property, it is unknown whether this alternative would be able to support a viable district)	Yes	Yes
Preserve the shoreline areas of the project site for public park and public open space use.	Yes	Yes	Partially (the 900 Innes property would not be accessible)	Partially; with no Big Green, less of a connection through the site to the shoreline	Partially; with no Big Green, less of a connection through the site to the shoreline	Yes	Yes

Project Sponsors' Objectives	Proposed Project	Variant	No Project	Code Compliant Alternative	Reduced Development Alternative	Full Preservation Alternative	Partial Preservation Alternative
Incorporate environmental sustainability concepts and practices into the project, including stormwater treatment swales and bioretention areas, improved and new wetlands, green building design, and construction practices.	Yes	Yes	No	No (the Big Green would not be developed and these facilities would not be provided)	No (the Big Green would not be developed and these facilities would not be provided)	Yes	Yes

Notes: Bay = San Francisco Bay; Bay Trail = San Francisco Bay Trail; City = City and County of San Francisco; R&D = research and development; RPD = San Francisco Recreation and Parks Department
Source: Compiled by AECOM in 2017

4.9 ALTERNATIVES CONSIDERED AND REJECTED

Section 15126.6(c) of the State CEQA Guidelines provides that an EIR should "identify any alternatives that were considered by the lead agency but rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination." The screening process for identifying viable EIR alternatives included consideration of the following criteria: ability to meet the project objectives; potential ability to substantially lessen or avoid environmental effects associated with the proposed project or the variant; and potential feasibility. The discussion below provides the reasons for eliminating these alternatives from detailed consideration in the EIR.

Several alternatives were considered but eliminated through the planning process that resulted in the alternatives evaluated in the EIR. A brief summary is provided below.

4.9.1 Leave In-Water Structures in Place

An alternative that would not include any in-water redevelopment was explored. This alternative would leave all current piers, piles, and riprap structures in their current condition (including those treated with creosote and/or in a dilapidated, unsafe condition). This alternative would also limit the ability to clean up the site with regard to hazardous materials, as many of the contaminated elements are at the shoreline edge or in the Bay. Without removal and remediation of harmful elements, portions of the properties would be harmful to the public and the Bay ecosystem and unsafe for development and use. Such areas on land and in water would need to be fenced off from the public. In addition, the residential and commercial uses may not be compatible without proper cleanup of the site. Thus, an alternative to leave in-water structures in place has been eliminated from further consideration and is not evaluated in the EIR because it fails to meet basic project objectives described above regarding, creating a safe environment for park users, public access to the Bay and prioritizing environmental cleanup to promote public health, safety, and welfare. In addition, by not addressing the edge of the Bay adjacent to new development, this alternative would not include landscape that would be adaptive and resilient alongside anticipated sea-level rise or conserve and strengthen natural resources.

4.9.2 100 Percent Affordable Housing

An alternative to use the entire project site for affordable residential housing was explored; however, the cost to conduct hazardous materials cleanup[5] and develop the land entirely with affordable housing residential uses does not make this alternative economically feasible. The property is located on real estate that is one of the last remaining waterfront properties in San Francisco. Constructing 100 percent affordable housing on the entire site would not be financially feasible or practical at this location and does not meet the project objectives related to provision of open space/park uses. To construct affordable housing on the 700 Innes property, all funds otherwise available for public benefits would be directed back into filling the gap for construction of these homes; therefore, no funds would be available to improve or build any new parks or open space, provide any transportation improvements, or subsidize any new art installations. This alternative would not meet some of the objectives described above such as including high-quality housing with sufficient density to contribute to 18-hour activity on the project site while offering a mix of unit types, sizes. It would also not provide sufficient mixed-use development capacity with a range of flexible uses that can respond to market demands and attract the private capital necessary to build out the proposed project in a timely fashion and financially support an array of public benefits, including public open space, a permanent maintenance and operations tax district, community job training and small business development opportunities, public transportation improvements and affordable housing. Thus, a 100 percent affordable housing alternative has been eliminated from further consideration and is not evaluated in the EIR.

4.9.3 No Brownfield Redevelopment

An alternative that would not involve any hazardous materials cleanup of the sites that are contaminated was considered. The cost to clean up the site is high and cleanup can take years to accomplish with limited funds. Without removal and remediation of harmful elements, portions of the properties would be harmful and unsafe for development. Therefore, use of the site would be limited and not practical for residential, commercial and recreational use. Some of the project objectives above would not be met including creating a neighborhood center that stimulates meaningful and inclusive local, citywide, and regional community engagement and creating a safe environment for park users, public access to the Bay and prioritizing environmental cleanup to promote public health, safety, and welfare would not be possible. In addition the opportunity to improve the open space along the Bay would be lost and a seamless park user experience along India Basin that ensures a high level of waterfront and recreation access for neighborhood users could not be achieved including connectivity to the Blue Greenway/Bay Trail. Because this alternative does not meet the project objectives, a no brownfield redevelopment alternative has been eliminated from further consideration and is not evaluated in the EIR.

4.9.4 100 Percent Open Space/Park Use

An alternative was explored in which the entire site could be used for open space and park purposes that would be owned and operated by RPD. This alternative was considered and eliminated because the funds were not available to develop the entire site as open space/park. The cost of waterfront land in San Francisco is at a premium and the cost to clean up hazardous materials is also very high; therefore, without financial resources from a private developer, this alternative is not practical. Some of the project objectives would not be met as described above

[5] The amount and type of hazardous materials cleanup required for residential uses is more extensive and costly than the amount and type of hazardous materials cleanup required for recreational/open space uses.

including revitalizing a prime but underutilized southeastern waterfront site with a range of uses designed to increase housing at a range of affordability levels and providing increased business and employment opportunities and pursuing a balanced mix of residential, retail, and office space, as well as R&D space to support a viable, vibrant small-scale neighborhood retail district. In addition, several other objectives such as constructing high-quality housing with sufficient density while offering a mix of unit types, sizes, and affordability to accommodate a range of potential residents, and providing sufficient mixed-use development capacity with a range of flexible uses that can respond to market demands and attract the private capital necessary to build out the project site. As such, a 100 percent open space/park use alternative has been eliminated from further consideration and is not evaluated in the EIR.

4.10 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

State CEQA Guidelines Section 15126.6(e)(2) requires identification of an environmentally superior alternative. If the No Project Alternative is environmentally superior, CEQA requires selection of the "environmentally superior alternative other than the No Project Alternative" from among the proposed project and the alternatives evaluated.

The No Project Alternative is considered the overall environmentally superior alternative because the impacts associated with implementation of the proposed project would not occur under the No Project Alternative. However, the No Project Alternative would not meet any of the project objectives.

To identify the environmentally superior alternative in accordance with the State CEQA Guidelines, Table 4-2 presents a comparison of the impacts related to the alternatives. As shown in Table 4-2, the Reduced Development Alternative is the environmentally superior alternative because it would have a lower impact level for most of the topics. Because of the substantially lower number of residential units and the decrease in the gsf of commercial, office, R&D, institutional/educational, and open space/recreation uses, this alternative would lessen (but not avoid) most of the significant adverse impacts reducing them to less than significant. However the significant impacts identified for the proposed project and the variant related to the topics of noise, air quality, transportation and circulation, and wind would still remain significant. They would not be reduced to a LTS level because the amount of development on the site still would result in a significant impact. Mitigation measure would be introduced to improve environmental impacts.

As shown in Table 4-3, the Reduced Development Alternative would partially meet the two project sponsors' objectives. Similar to the proposed project or the variant, the Reduced Development Alternative would provide public open spaces, housing, R&D, commercial/retail, and recreational opportunities and would include restoration and remediation of the project site.

4.11 REFERENCES

San Francisco, City and County of (San Francisco). 2017a (August). *India Basin Alternative Analysis – Transportation and Circulation.* San Francisco, CA. Case Number: 2014.2541E. Prepared for San Francisco Planning Department by Fehr & Peers, San Francisco, CA.

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Lau, Fan. Water Resources Specialist, San Francisco Public Utilities Commission (SFPUC), San Francisco, CA. August 21, 2017—Personal Communication (telephone call) with Elliott Schwimmer of AECOM regarding SFPUC's comments on the India Basin Mixed-Use Project's Screencheck Draft EIR.

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5.0 OTHER CEQA CONSIDERATIONS

5.1 SIGNIFICANT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED IF THE PROJECT IS IMPLEMENTED

Based on the environmental analyses in this EIR, the City has determined that the proposed project and variant in conjunction with cumulative development in southeastern San Francisco would result in the project-level and cumulative significant and unavoidable impacts listed below.

Cultural Resources Impacts:

- Project-level vernacular cultural landscape impacts related to CRHR eligibility of the India Basin Scow Schooner Boatyard due to uncertainty associated with ability to retain the Boatyard Office building.

Transportation and Circulation Impacts:

- Project-level transportation impacts related to loading demand during the peak hour of loading activities and resulting hazardous traffic conditions or significant delays affecting transit, bicycles, or pedestrians.
- Cumulative transportation impacts related to transit delay due to increased round-trip travel time.

Noise Impacts:

- Project-level ambient noise impacts during operation on sensitive receptors located off site along roadways.
- Cumulative noise impacts on sensitive receptors located off site along roadways.

Air Quality Impacts:

- Project-level emissions of criteria air pollutants and precursors during construction, operation, and overlapping construction and operational activities.
- Project-level emissions that could expose sensitive receptors to substantial pollutant concentrations.
- Cumulative regional air quality and health risk impacts.

Wind Impacts:

- Project-level wind impacts that would affect public areas.

5.2 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA and the State CEQA Guidelines (Section 151826[c]) require that an EIR address "significant irreversible environmental changes which would be involved in the Project, should it be implemented."

If the proposed project or variant is implemented, the development would involve the use of nonrenewable resources during its construction phase. Construction would include the use of building materials, such as petroleum-based products and metals that cannot reasonably be recreated. Construction also would involve

significant consumption of energy, usually petroleum-based fuels that deplete supplies of nonrenewable resources. Construction of structures and infrastructure would consume energy and water; however, because of its temporary and one-time nature, construction under the proposed project or variant would not represent a significant irreversible use of resources.

Once construction is complete, the land uses associated with the proposed project or variant would use some nonrenewable fuels to heat and light structures and consume water. Development elements would be built to current codes, including the California Green Building Standards Code, which requires insulation and support designs that minimize wasteful energy consumption. Specific aspects of the proposed project or variant would be as energy efficient as possible, as the RPD development would be built to meet Leadership in Energy and Environmental Design (LEED) Gold certification standards and the BUILD development would be built to meet LEED Silver certification standards. Finally, because the land uses associated with the proposed project or variant would consume energy for heat and light and water for irrigation and plumbing in an efficient manner (per compliance with California Green Building Standards Code and LEED Gold and Silver certification standards), operation under the proposed project or variant would represent a minimal use in resources, and thus would not represent a significant irreversible use of resources.

5.3 GROWTH-INDUCING IMPACTS

Section 15126.2(d) of the State CEQA Guidelines requires that an EIR discuss the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Typical growth-inducing factors might be the extension of urban services or transportation infrastructure to a previously unserved or underserved area, or the removal of major barriers to development. This section evaluates the project's potential to create such growth inducements. Not all aspects of growth inducements are negative; rather, negative impacts associated with growth inducement occur only where the projected growth would cause adverse environmental impacts.

Growth-inducing impacts fall into two general categories: direct or indirect. Direct growth-inducing impacts are generally associated with providing urban services to an undeveloped area. Indirect, or secondary growth-inducing impacts consist of growth induced in the region by additional demands for housing, goods, and services associated with population increase caused by or attracted to, a new project.

The State CEQA Guidelines, as interpreted by the City, state that a significant growth-inducing impact may result if the proposed project would:

1. induce substantial population growth in an area (for example, by proposing new homes and commercial or industrial businesses beyond the land use density/intensity envisioned in the community plan);
2. substantially alter the planned location, distribution, density, or growth rate of the population of an area; or
3. include extensions of roads or other infrastructure not assumed in the community plan or adopted capital improvements project list, when such infrastructure exceeds the needs of the project and could accommodate future developments.

The project site is located in a partially developed area of San Francisco. Implementing the proposed project or variant would directly induce growth in the City, but not in a manner that is beyond the Citywide land use densities/intensities envisioned in the *San Francisco General Plan* and the *Bayview Hunters Point Area Plan* for

this area of San Francisco. According to the U.S. Census Bureau's American Community Survey (U.S. Census Bureau, 2014), as of 2014, the City's population was 829,072 people. According to the Association of Bay Area Governments (ABAG), the population of the County of San Francisco is expected to increase by approximately 152,728 people from the 2014 population estimates by 2030 (ABAG, 2013, as cited in San Francisco, 2015a), resulting in a total anticipated population of 981,800 by 2030. Implementing the proposed project would involve constructing up to 1,240 residential units, while implementing the variant would involve constructing up to 500 residential units. This would increase the population of the project site and this area of the City by approximately 3,401 or 1,371 residents, respectively (Bean, pers. comm., 2016). The population growth that could be accommodated by the proposed project or variant would be consistent with growth projections for the City as projected by ABAG (2013). The ABAG projections illustrate how the City will accommodate growth if policies consistent with the vision of the draft *Plan Bay Area* (ABAG and MTC, 2017) are adopted.

In addition to residential units, direct growth from the proposed project or variant would include retail and service commercial facilities, public institutional facilities, office/research and development space, and recreational facilities, as well as improvements to City roadways near the project site. This growth would add 929 jobs under the proposed project or 3,535 jobs under the variant. Infrastructure and services would be expanded to serve the proposed project and variant, without significant excess capacity that might encourage additional growth beyond that already planned for in the *Bayview Hunters Point Area Plan*. As a result, the proposed project or variant would create minimal to no indirect growth that would be inconsistent with ABAG's projections for the City and County of San Francisco.

The project site currently consists of primarily vacant, undeveloped land; see Chapter 2.0, "Project Description," for more details regarding the existing project site setting. Implementing the proposed project or variant would not require the extension of electrical, natural gas, or water utility infrastructure, but would require connections to existing utilities infrastructure on and adjacent to the project site. Because the project site is surrounded by existing residential development, a proposed and existing park, and an existing electrical substation, such connections would not induce growth in other areas. Therefore, neither the proposed project nor the variant would include any significant infrastructure expansion that would facilitate growth in other areas of San Francisco. In addition, both the proposed project and the variant would be compatible with the surrounding residential uses and would not pressure adjacent properties to redevelop with new or different land uses. As a result, it is not anticipated that nearby residents would relocate.

The proposed project and variant would also not significantly and adversely affect the permanent jobs/housing balance. As discussed above, either the proposed project or the variant would create nonresidential development and jobs, and could create housing demand above what would otherwise occur in the City. However, the proposed project and variant would also include up to 1,240 new residential units and up to 3,401 new residents. New residents would be expected to have existing jobs in the greater San Francisco Bay Area. Further, housing included as part of the proposed project or variant would help the City achieve a more even jobs/housing balance by providing much-needed housing.

The direct population growth created by implementing the proposed project or variant would still be consistent with ABAG's future-growth projections and the City's planned future for this area of the City. In an attempt to further refine broad policies in the *Bayview Hunters Point Area Plan*, the San Francisco Planning Department, working with the San Francisco Redevelopment Agency, prepared a draft subarea plan to the *Bayview Hunters*

Point Area Plan known as *India Basin Shoreline Sub-Area Plan: A Subarea Plan of the Bayview Hunters Point Area Plan* (Sub-Area Plan) (San Francisco, 2009). The draft Sub-Area Plan continued the work of the community revitalization concept plan prepared by the Bayview Hunters Point Project Area Committee and published by the San Francisco Redevelopment Agency in 2002. The City has not finalized and adopted a subarea plan for the India Basin Shoreline Area. Nevertheless, the draft Sub-Area Plan outlines a community vision for the area, which includes a shoreline-accessible recreation zone at the location of the proposed India Basin Shoreline Park, 900 Innes, and India Basin Open Space properties, and a waterfront mixed-use district at the location of the proposed 900 Innes and 700 Innes properties.

Development of cumulative projects in the City and County of San Francisco, as identified in Table 3-1 in Section 3.0.3, "Format of the Environmental Analysis," would result in 16,313 residential housing units, 270,700 gross square feet (gsf) of retail space, 75,000 gsf of community or institutional space, and 7,150,000 gsf of office space. In combination with the proposed project or the variant, this projected population and employment growth in this portion of the City would help the City meet its share of the Regional Housing Needs Assessment. For example, the supply of housing under the cumulative projects scenario would be between 54 and 57 percent of the Regional Housing Needs Assessment target for the City by 2022.

Furthermore, neither the proposed project nor the variant would result in any indirect growth or negatively alter the existing jobs/housing balance, nor would they be inconsistent with ABAG's growth projections for the City, the *Bayview Hunters Point Area Plan*, or the Sub-Area Plan. Therefore, implementation of the proposed project or variant would have a *less-than-significant* growth-inducing impact. No mitigation measures are necessary.

5.4 SOCIOECONOMIC CONSIDERATIONS UNDER CEQA

CEQA requires review of the effects of a project that are related to a physical change to the environment. Social or economic impacts alone are not changes in physical conditions. Therefore, the State CEQA Guidelines provide that social or economic impacts may not be treated as significant effects on the environment.[1] Evidence of social or economic impacts (e.g., property values, rent levels, neighborhood demographics) that do not contribute to, or are not caused by, physical impacts on the environment is not substantial evidence of a significant effect on the environment. However, a social or economic change related to a physical change may be considered in determining whether a physical change is significant.

Additionally, an EIR or other CEQA document must consider the reasonably foreseeable indirect environmental consequences or physical changes resulting from a project's economic or social changes.[2] In short, social and economic effects are only relevant under CEQA if they would result in or are caused by an adverse physical impact on the environment. The public's concerns regarding socioeconomic issues that may be associated with the proposed project, including gentrification, displacement, and housing affordability, are briefly acknowledged here. City decision-makers may consider these and other issues in their deliberations on the proposed project and variant.

Concerns have been raised in general throughout the City regarding the loss of middle-income jobs and affordable housing. These socioeconomic effects are not considered environmental effects unless they are shown to result in

[1] State CEQA Guidelines Sections 15358(b), 15064(e), and 15382.

[2] State CEQA Guidelines Sections 15064(d) and 15064(e).

physical impacts on the environment and must be linked to the action undergoing CEQA review. The following discussion addresses these socioeconomic concerns.

By accommodating demand for jobs and housing consistent with regional growth projections, and in particular by increasing the supply of both market-rate and affordable housing, the proposed project or variant would provide some relief to San Francisco's housing market pressures. However, the effect that development under the proposed project or variant would have on housing affordability is a matter of considerable controversy. Although there is general consensus that the high costs of market-rate housing and the limited supply of affordable housing in San Francisco are causing displacement of lower income residents, opinions differ on the underlying causes.

In September 2015, the City Office of the Controller, Office of Economic Analysis, published a report addressing the effects of temporary and permanent moratoria on new market-rate housing projects in San Francisco's Mission District (San Francisco, 2015b).

The report concluded that constraining the supply of market-rate housing units through a moratorium would result in higher housing prices. With fewer available units, both buyers and renters would engage in bidding wars and drive housing prices upward. Because market-rate housing developers are required to provide a certain percentage of affordable housing units in compliance with the City's inclusionary housing program, a temporary moratorium on new market-rate housing projects would delay the production of these affordable housing units, while a permanent moratorium would result in no new affordable housing units under this program. The report concluded that a moratorium on new market-rate housing projects would not entirely eliminate the potential for the displacement of existing businesses and residents, because other types of development projects (affordable housing, commercial, production/distribution/repair) could similarly displace existing businesses and residents.

CEQA prohibits the finding of significant impacts that are not based on substantial evidence of adverse physical changes to the environment. As described above, these social and economic concerns regarding affordable housing are being addressed in the City's planning and policy development processes. There is no evidence that the proposed project or variant would result in potential social and economic effects that would result in significant effects on the physical environment. Changes to the physical environment that would result from the proposed project or variant are addressed in the appropriate environmental topics in this EIR and in the accompanying Initial Study (Appendix A).

5.5 REFERENCES

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[1] Although other local, regional, State, and federal agencies are involved in the separate permitting processes related to the project, this list of agencies is limited to those that provided input and review related to data included in the environmental impact report.

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