DRAFT ENVIRONMENTAL IMPACT REPORT

75 HOWARD STREET PROJECT

CITY AND COUNTY OF SAN FRANCISCO
PLANNING DEPARTMENT: CASE NO. 2011.1122E

STATE CLEARINGHOUSE NO. 2012122022

DRAFT EIR PUBLICATION DATE: JULY 31, 2013

DRAFT EIR PUBLIC HEARING DATE: SEPTEMBER 12, 2013

DRAFT EIR PUBLIC COMMENT PERIOD: AUGUST 1, 2013 - SEPTEMBER 16, 2013

Written comments should be sent to:

Environmental Review Officer
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103

SEAL OF THE CITY AND COUNTY OF SAN FRANCISCO

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TO: Distribution List for the 75 Howard Street Project Draft EIR

FROM: Sarah B. Jones, Acting Environmental Review Officer

SUBJECT: Request for the Final Environmental Impact Report for the 75 Howard Street Project (Planning Department File No. 2011.1122E)

This is the Draft of the Environmental Impact Report (EIR) for the 75 Howard Street 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.

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ABAG	Association of Bay Area Governments
AC Transit	Alameda-Contra Costa Transit
ACL	absolute cumulative limit
ADA	Americans with Disabilities Act
ADRP	archeological data recovery plan
AMP	archaeological monitoring program
AMSL	above mean sea level
APG	Adaptation Planning Guide
ARB	California Air Resources Board
ARDTP	Archaeological Research Design and Treatment Plan
ATP	archaeological testing plan
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BCDC	San Francisco Bay Conservation and Development Commission
bgs	below ground surface
BMPs	Best Management Practices
B.P.	Before Present
CAAQS	California ambient air quality standards
Caltrans	California Department of Transportation
CAT	California Climate Action Team
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
cm	centimeters
CO	carbon monoxide
CO-CAT	Coastal and Ocean Working Group of the California Climate Action Team
CRHR	California Register of Historical Resources
CSO	combined sewer overflow
dB	decibel
dBA	A-weighted decibel
DBI	San Francisco Department of Building Inspection
DPH	San Francisco Department of Public Health
DPM	diesel particulate matter
DPW	Department of Public Works
EIR	Environmental Impact Report
ERO	Environmental Review Officer
FAR	floor area ratio
FARR	Final Archaeological Resources Report
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FIRM	Flood Insurance Rate Maps
ft.	feet
FTA	Federal Transit Administration
GGT	Golden Gate Transit
GHG	greenhouse gas
GIS	geographic information system
GPS	Global Positioning System

gsf	gross square feet
HCM	*2000 Highway Capacity Manual*
I-280	Interstate 280
I-80	Interstate 80
in/sec PPV	inch per second peak particle velocity
IPCC	Intergovernmental Panel on Climate Change
lb	pound
LEED	Leadership in Energy and Environmental Design
LID	Low Impact Design
LOS	Level of Service
Lv	vibration levels
MBTA	Migratory Bird Treaty Act
mgd	million gallons per day
MLD	most likely descendant
MLP	maximum load point
mm/yr	millimeters/year
MMRP	Mitigation Monitoring and Reporting Program
MTBE	methyl tertiary-butyl ether
MTC	Metropolitan Transportation Commission
Muni	San Francisco Municipal Railway
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NAVD88	North American Vertical Datum of 1988 reference
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NFIP	National Flood Insurance Program
ng/m^3	nanograms per cubic meter
NGVD	National Geodetic Vertical Datum
NOAA	National Oceanic and Atmospheric Administration
NOP/IS	Notice of Preparation/Initial Study
NO_2	nitrogen dioxide
NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSR	New Source Review
NWIC	California Archaeological Site Survey Northwest Information Center
OHP	California Office of Historic Preservation
PDA	Priority Development Area
PM	particulate matter
PM_{10}	particulate matter of 10 microns in diameter or less
$PM_{2.5}$	particulate matter of 2.5 microns in diameter or less
POPOs	privately owned, publicly accessible open spaces
ppb	parts per billion
ppm	parts per million
PPV	peak particle velocity
PRMMP	Paleontological Resources Monitoring and Mitigation Program
RMS	root mean square
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SamTrans	San Mateo County Transit

SB 352	Senate Bill 352
SFBAAB	San Francisco Bay Area Air Basin
SFCD	San Francisco City Datum
SFCTA	San Francisco County Transportation Authority
SFFD	San Francisco Fire Department
sfh	square-foot-hours
SMO	Stormwater Management Ordinance
SFMTA	San Francisco Municipal Transportation Agency
SFPD	San Francisco Police Department
SFPUC	San Francisco Public Utilities Commission
SO_2	sulfur dioxide
sq. ft.	square feet
SSC	Species of Special Concern
SSMP	Sewer System Master Plan
STC	sound transmission class
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAAS	theoretical annual available sunlight
TACs	toxic air contaminants
TASC	Transportation Advisory Staff Committee
TBACT	Best Available Control Technology for Toxics
TCDP	*Transit Center District Plan*
TCP	Traffic Control Plan
TEP	Transit Effectiveness Project
TIS	*Transportation Impact Study*
2010 CAP	*Bay Area 2010 Clean Air Plan*
TWL	total water levels
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VdB	decibel notation
VDECS	Verified Diesel Emissions Control Strategy
WETA	Water Emergency Transportation Authority
WHO	World Health Organization
$\mu g/m^3$	micrograms per cubic meter

SUMMARY

This Summary chapter 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 chapter briefly summarizes the 75 Howard Street Project (referred to in this Environmental Impact Report [EIR] as “the proposed project”) and two variants to the proposed project – the Public Parking Variant and the Residential/Hotel Mixed Use Variant. Following the synopsis of the proposed project and its project variants, a summary table presents the environmental impacts of the proposed project and its project variants identified in the EIR by topic and mitigation and improvement measures identified to reduce or lessen significant impacts. Significant impacts identified in the Notice of Preparation/Initial Study are listed in a separate summary table with the mitigation measures that would reduce significant impacts to less-than-significant levels. Following these summary tables is a description of the alternatives to the proposed project that are addressed in this EIR and a table comparing the impacts of those alternatives with the proposed project and project variants. The final subsection in this chapter is a summary of environmental issues to be resolved and areas of known controversy.

Table S.1: Summary of Impacts of Proposed Project Identified in the EIR, beginning on p. S.5, provides an overview of the following:

- Environmental impacts with the potential to occur as a result of the proposed project and project variants;
- The level of significance of the environmental impacts before implementation of any applicable mitigation measures;
- Mitigation measures that would avoid or reduce significant environmental impacts;
- Improvement measures that would reduce less-than-significant impacts; and
- The level of significance for each impact after the mitigation measures are implemented.

S.1. PROJECT SYNOPSIS

The project site is located on the south side of Howard Street at the intersection of Howard and Steuart streets, in San Francisco’s Financial District, and within the *Transit Center District Plan* area. The project site consists of three lots and a portion of a street right-of-way: Assessor’s Block 3741/Lot 31, which is owned by PPF Paramount, 75 Howard Garage, L.P. (the project sponsor); Assessor’s Block 3741/Lot 35 (known as Parcel 3), which is owned by the Gap, Inc.; and Assessor’s Block 3742/Lot 12 and a portion of the Steuart Street right-of-way south of Howard Street, which is owned by the City and County of San Francisco under the jurisdiction of the Department of Public Works (DPW). Block 3741/Lot 31, together with Parcel 3, include approximately 20,931 square feet and comprise the proposed 75 Howard Street building site, which is currently developed with the existing 75 Howard Garage, a 550-space, 91-foot-tall, seven-story commercial parking garage structure built in 1976.

The proposed project consists of the demolition of the existing 75 Howard Garage and construction, in its place, of an approximately 31-story, 348-foot-tall, 432,253-gross-square-foot (gsf) residential, high-rise tower containing 186 market rate units and approximately 5,658 gsf of retail use. The proposed project would contain 172 accessory parking spaces for residential units, 2 parking spaces assigned for commercial uses, and 1 car-share space, for a total of 175 parking spaces located in a 26,701-gsf parking garage located on two below-grade levels accessed from Howard Street. The proposed project also includes landscaping and paving improvements, resulting in a new 4,780-sq.-ft. landscaped, publicly accessible open space at Block 3742/Lot 12 and the portion of the Steuart Street right-of-way south of Howard Street. On-street parking along the segment of Steuart Street south of Howard Street would be eliminated. This segment of Steuart Street would be narrowed, and the turnaround bulb at the southern terminus of Steuart Street would be reconfigured and incorporated into the design of the open space area.

In addition to the proposed project, the project sponsor has developed two variants – the Public Parking Variant and the Residential/Hotel Mixed Use Variant. The proposed Public Parking Variant would provide an additional 91 non-accessory public off-street parking spaces, and two additional car-share parking spaces for a total of 268 parking spaces, to partially offset the 550 public spaces lost by demolition of the 75 Howard Garage. All 268 parking spaces would be located in stacked spaces on Basement Level 2 within the proposed 26,701-gsf parking garage. The proposed Residential/Hotel Mixed Use Variant would provide a mix of residential units and hotel rooms within the high-rise tower. Hotel rooms would be located on floors 3 through 7 and floors 10 through 12, and residential units would be located on floors 13 through 31. This variant would also include space on floors 8 and 9 for hotel registration, a hotel restaurant, spa services, and other hotel amenity space. Under this variant, approximately 109 residential units and 82 hotel rooms with associated hotel amenity space would be constructed. As under the proposed project, the Residential/Hotel Mixed Use Variant would include a lobby, restaurant, and amenity space on the first and second floors of the high-rise tower. Parking under this variant would include a total of 268 stacked parking spaces on Basement Level 2 (the same total number of parking spaces as under the Public Parking Variant) within the 26,701-gsf parking garage area.

S.2. SUMMARY OF IMPACTS AND MITIGATION MEASURES

The Planning Department published a Notice of Preparation/Initial Study on December 12, 2012, announcing its intent to prepare and distribute a focused EIR (the NOP/IS is presented as Appendix A to this EIR). Topics analyzed in the EIR are Land Use and Land Use Planning (Conflicts with Adopted Plans and Land Use Character only); Aesthetics; Cultural and Paleontological Resources (Archaeological Resources only); Transportation and Circulation;

Noise; Air Quality; Wind and Shadow (Shadow only); Utilities and Service Systems (Wastewater Treatment Facilities and Stormwater Drainage Facilities and Odor Issues from Infrastructure only); Biological Resources (Bird Migration and Local Movement only); and Hydrology and Water Quality (Sea Level Rise only).

All impacts of the proposed project and its variants and associated mitigation measures and improvement measures identified in this EIR are summarized in Table S.1. These impacts are listed in the same order as they appear in the text of Chapter 4, Environmental Setting, Impacts, and Mitigation, of this EIR. For the topics evaluated in the EIR, the levels of significance of impacts are identified as:

- **No Impact** – No adverse changes (or impacts) to the environment are expected.
- **Less Than Significant** – Impact that does not exceed the defined significance criteria or would be eliminated or reduced to a less-than-significant level through compliance with existing local, State, and federal laws and regulations.
- **Less Than Significant with Mitigation** – Impact that is reduced to a less-than-significant level through implementation of the identified mitigation measures.
- **Significant and Unavoidable with Mitigation** – Impact that exceeds the defined significance criteria and can be reduced through compliance with existing local, State, and federal laws and regulations and/or implementation of all feasible mitigation measures, but cannot be reduced to a less-than-significant level.
- **Significant and Unavoidable –** Impact that exceeds the defined significance criteria and cannot be eliminated or reduced to a less-than-significant level through compliance with existing local, State, and federal laws and regulations and for which there are no feasible mitigation measures.

Where applicable, this table identifies project revisions or conditions, expressed as mitigation measures, which 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 "Impact Significance With Mitigation." All mitigation measures and improvement measures that are applicable to the proposed project are also applicable to each of the project variants.

This table should not be relied upon for a thorough understanding of the proposed project and its impacts and mitigation needs, but is presented for the reader as an overview of project impacts, mitigation measures, and improvement measures. Please see the relevant environmental topic sections in Chapter 4, Environmental Setting, Impacts, and Mitigation, and in the NOP/IS, Section E. Evaluation of Environmental Effects (Appendix A), for a thorough discussion and analysis of the impacts of the proposed project and its project variants, and the mitigation measures identified to address those impacts.

As described below in Table S.1, this EIR identifies six significant and unavoidable impacts (conflicts with the adopted height limit; impairs a scenic vista; shadows public open spaces and sidewalks; cumulatively contributes to shadows on public open spaces and sidewalks; cumulatively contributes to unacceptable traffic level of service at Spear and Howard streets; and sea-level-rise-induced flooding). Potentially significant project level impacts (disturbance of archeological resources; accidental discovery of human remains; construction noise and vibration; interior and exterior noise; construction emissions; toxic air contaminants; and birdlife, bird movement, and migration) are identified with mitigation measures that would reduce impacts to less-than-significant levels. As described below in Table S.2, the Initial Study identifies two potentially significant impacts (paleontological resources; hazardous materials) and the mitigation measures that would reduce those impacts to less-than-significant levels.

Table S.1: Summary of Impacts of Proposed Project Identified in the EIR

Impact	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Legend: NI = No Impact; LS = Less than Significant; S = Significant; SU = Significant and unavoidable impact; SUM = Significant and unavoidable impact with mitigation; NA = Not Applicable			
Land Use and Land Use Planning			
LU-1: The proposed project or variants would conflict with an 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.	S	No feasible mitigation available.	SU
LU-2: The proposed project or variants would not have a substantial impact on the existing character of the vicinity.	LS	None required.	LS
C-LU-1: The proposed project, in combination with past, present, or reasonably foreseeable future projects, would not contribute considerably to significant cumulative land use impacts related to (a) conflicting with applicable land use plans, policies, or regulations of an agency with jurisdiction over the project adopted for the purpose of ***cont'd.***	LS	None required.	LS

Impact	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
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avoiding or mitigating an environmental effect, or (b) substantially impacting the existing character of the site vicinity.			
Aesthetics			
AE-1: The proposed project and project variants would have a substantial adverse effect on a scenic vista.	S	No feasible mitigation available.	SU
AE-2: The proposed project and project variants would not have a substantial adverse effect on a scenic resource.	LS	None required.	LS
AE-3: The proposed project and project variants would not have a substantial adverse effect on the visual character or quality of the site and its surroundings.	LS	None required.	LS
C-AE-1: The proposed project and project variants, in combination with past, present and reasonably foreseeable future projects in the project vicinity, would not make a cumulatively considerable contribution to a significant impact related to aesthetics.	LS	None required.	LS

Impact	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
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Cultural and Paleontological Resources			
CP-1: Construction activities for the proposed project and project variants would cause a substantial adverse change in the significance of archaeological resources, if such resources are present within the project site. ***cont'd.***	S	**M-CP-1a: Archaeological Testing, Monitoring, Data Recovery and Reporting** Based on a reasonable presumption that archaeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources. The project sponsor shall retain the services of an archaeological consultant from the pool of qualified archaeological consultants maintained by the Planning Department archaeologist. The archaeological consultant shall undertake an archaeological testing program as specified herein. In addition, the consultant shall be available to conduct an archaeological monitoring and/or data recovery program if required pursuant to this measure. The archaeological consultant's work shall be conducted in accordance with this measure at the direction of the Environmental Review Officer (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. Archaeological monitoring and/or data recovery programs required by this measure could suspend construction of the project for up to a maximum of four weeks. At the direction of the ERO, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means to reduce to a less than significant level potential effects on a significant archaeological resource as defined in CEQA Guidelines Sect. 15064.5 (a) and (c). <u>Consultation with Descendant Communities</u> On discovery of an archaeological site associated with descendant Native Americans or the Overseas Chinese an appropriate representative of the descendant group and the ERO shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archaeological field investigations of the site and to consult with ERO regarding appropriate archaeological treatment of the site, of recovered data from the site, and, if applicable, any interpretative treatment of the associated archaeological site. A copy of the Final Archaeological Resources Report shall be provided to the representative of the descendant group.	LS

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cont'd.		<u>Archaeological Testing Program</u> The archaeological consultant shall prepare and submit to the ERO for review and approval an archaeological testing plan (ATP). The archaeological testing program shall be conducted in accordance with the approved ATP. The ATP shall identify the property types of the expected archaeological resource(s) that potentially could be adversely affected by the proposed project, the testing method to be used, and the locations recommended for testing. The purpose of the archaeological testing program will be to determine to the extent possible the presence or absence of archaeological resources and to identify and to evaluate whether any archaeological resource encountered on the site constitutes an historical resource under CEQA. At the completion of the archaeological testing program, the archaeological consultant shall submit a written report of the findings to the ERO. If based on the archaeological testing program the archaeological consultant finds that significant archaeological resources may be present, the ERO in consultation with the archaeological consultant shall determine if additional measures are warranted. Additional measures that may be undertaken include additional archaeological testing, archaeological monitoring, and/or an archaeological data recovery program. If the ERO determines that a significant archaeological resource is present and that the resource could be adversely affected by the proposed project, at the discretion of the project sponsor either: A) The proposed project shall be re-designed so as to avoid any adverse effect on the significant archaeological resource; or B) A data recovery program shall be implemented, unless the ERO determines that the archaeological resource is of greater interpretive than research significance and that interpretive use of the resource is feasible. <u>Archaeological Monitoring Program</u> If the ERO in consultation with the archaeological consultant determines that an archaeological monitoring program (AMP) shall be implemented the archaeological monitoring program shall minimally include the following provisions:	

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cont'd.		• The archaeological consultant, project sponsor, and ERO shall meet and consult on the scope of the AMP reasonably prior to any project-related soils disturbing activities commencing. The ERO in consultation with the archaeological consultant shall determine what project activities shall be archaeologically monitored. In most cases, any soils- disturbing activities, such as demolition, foundation removal, excavation, grading, utilities installation, foundation work, driving of piles (foundation, shoring, etc.), site remediation, etc., shall require archaeological monitoring because of the risk these activities pose to potential archaeological resources and to their depositional context; • The archaeological consultant shall advise all project contractors to be on the alert for evidence of the presence of the expected resource(s), of how to identify the evidence of the expected resource(s), and of the appropriate protocol in the event of apparent discovery of an archaeological resource; • The archaeological monitor(s) shall be present on the project site according to a schedule agreed upon by the archaeological consultant and the ERO until the ERO has, in consultation with project archaeological consultant, determined that project construction activities could have no effects on significant archaeological deposits; • The archaeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis; • If an intact archaeological deposit is encountered, all soils-disturbing activities in the vicinity of the deposit shall cease. The archaeological monitor shall be empowered to temporarily redirect demolition/excavation/pile driving/construction activities and equipment until the deposit is evaluated. If in the case of pile driving activity (foundation, shoring, etc.), the archaeological monitor has cause to believe that the pile driving activity may affect an archaeological resource, the pile driving activity shall be terminated until an appropriate evaluation of the resource has been made in consultation with the ERO. The archaeological consultant shall immediately notify the ERO of the encountered archaeological deposit. The archaeological consultant shall make a reasonable effort to assess the identity,	

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cont'd.		integrity, and significance of the encountered archaeological deposit, and present the findings of this assessment to the ERO. Whether or not significant archaeological resources are encountered, the archaeological consultant shall submit a written report of the findings of the monitoring program to the ERO. <u>Archaeological Data Recovery Program</u> If the ERO, in consultation with the archaeological consultant, determines that archaeological data recovery programs shall be implemented, the archaeological data recovery program shall be conducted in accord with an archaeological data recovery plan (ADRP). The archaeological consultant, project sponsor, and ERO shall meet and consult on the scope of the ADRP prior to preparation of a draft ADRP. The archaeological consultant shall submit a draft ADRP to the ERO. The ADRP shall identify how the proposed data recovery program will preserve the significant information the archaeological resource is expected to contain. That is, the ADRP will identify what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical. The scope of the ADRP shall include the following elements: • *Field Methods and Procedures*. Descriptions of proposed field strategies, procedures, and operations. • *Cataloguing and Laboratory Analysis*. Description of selected cataloguing system and artifact analysis procedures. • *Discard and Deaccession Policy*. Description of and rationale for field and post-field discard and deaccession policies.	

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cont'd.		• *Interpretive Program*. Consideration of an on-site/off-site public interpretive program during the course of the archaeological data recovery program. • *Security Measures*. Recommended security measures to protect the archaeological resource from vandalism, looting, and non-intentionally damaging activities. • *Final Report*. Description of proposed report format and distribution of results. • *Curation*. Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities. <u>Human Remains and Associated or Unassociated Funerary Objects</u> 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 in the event of the Coroner's determination that the human remains are Native American remains, notification of the California State Native American Heritage Commission (NAHC) who shall appoint a Most Likely Descendant (MLD) (Pub. Res. Code Sec. 5097.98). The archaeological consultant, project sponsor, and MLD shall make all reasonable efforts to develop an agreement for the treatment of, with appropriate dignity, human remains and associated or unassociated funerary objects (CEQA Guidelines. Sec. 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. <u>Final Archaeological Resources Report</u> The archaeological consultant shall submit a Draft Final Archaeological Resources Report (FARR) to the ERO that evaluates the historical significance of any discovered archaeological resource and describes the archaeological and historical research methods employed in the archaeological testing/monitoring/data recovery program(s) undertaken.	

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cont'd.		Information that may put at risk any archaeological resource shall be provided in a separate removable insert within the final report. Once approved by the ERO, copies of the FARR shall be distributed as follows: California Archaeological Site Survey Northwest Information Center (NWIC) shall receive one (1) copy and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The Environmental Planning division of the Planning Department shall receive one bound, one unbound and one unlocked, searchable PDF copy on CD of the FARR along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest in or the high interpretive value of the resource, the ERO may require a different final report content, format, and distribution than that presented above. **M-CP-1b: Interpretation** Based on a reasonable presumption that archaeological resources may be present within the project site, and to the extent that that the potential significance of some such resources is premised on CRHR Criteria 1 (Events), 2 (Persons), and/or 3 (Design/Construction), the following measure shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources. The project sponsor shall implement an approved program for interpretation of resources. The project sponsor shall retain the services of a qualified archaeological consultant having expertise in California urban historical and marine archaeology. The archaeological consultant shall develop a feasible, resource-specific program for post-recovery interpretation of resources. The particular program for interpretation of artifacts that are encountered within the project site will depend upon the results of the data recovery program and will be the subject of continued discussion between the ERO, consulting archaeologist, and the project sponsor. Such a program may include, but is not limited to, any of the following (as outlined in the ARDTP): surface commemoration of the original location of resources; display of resources and associated artifacts (which may offer an underground view to the public); display of interpretive materials such as graphics,	

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cont'd.		photographs, video, models, and public art; and academic and popular publication of the results of the data recovery. The archaeological consultant's work shall be conducted at the direction of the ERO, and in consultation with the project sponsor. All plans and recommendations for interpretation by the consultant 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. **M-CP-1c: Accidental Discovery** The following mitigation measure is required to avoid any potential adverse effect from the proposed project on accidentally discovered buried or submerged historical resources as defined in CEQA Guidelines Section 15064.5(a)(c). The project sponsor shall distribute the Planning Department archaeological resource "ALERT" sheet to the project prime contractor; to any project subcontractor (including demolition, excavation, grading, foundation, pile driving, etc. firms); or utilities firm involved in soils disturbing activities within the project site. Prior to any soils disturbing activities being undertaken, each contractor is responsible for ensuring that the "ALERT" sheet is circulated to all field personnel including, machine operators, field crew, pile drivers, supervisory personnel, etc. The project sponsor shall provide the Environmental Review Officer (ERO) with a signed affidavit from the responsible parties (prime contractor, subcontractor(s), and utilities firm) to the ERO confirming that all field personnel have received copies of the Alert Sheet. Should any indication of an archaeological resource be encountered during any soils disturbing activity of the project, the project Head Foreman and/or project sponsor shall immediately notify the ERO and shall immediately suspend any soils disturbing activities in the vicinity of the discovery until the ERO has determined what additional measures should be undertaken. If the ERO determines that an archaeological resource may be present within the project site, the project sponsor shall retain the services of an archaeological consultant from the pool of qualified archaeological consultants maintained by the Planning Department archaeologist. The archaeological consultant shall advise the ERO as to whether the discovery is an archaeological resource, retains sufficient integrity, and is of potential	

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		scientific/historical/cultural significance. If an archaeological resource is present, the archaeological consultant shall identify and evaluate the archaeological resource. The archaeological consultant shall make a recommendation as to what action, if any, is warranted. Based on this information, the ERO may require, if warranted, specific additional measures to be implemented by the project sponsor. Measures might include: preservation in situ of the archaeological resource; an archaeological monitoring program; or an archaeological testing program. If an archaeological monitoring program or archaeological testing program is required, it shall be consistent with the Environmental Planning (EP) division guidelines for such programs. The ERO may also require that the project sponsor immediately implement a site security program if the archaeological resource is at risk from vandalism, looting, or other damaging actions. The project archaeological consultant shall submit a Final Archaeological Resources Report (FARR) to the ERO that evaluates the historical significance of any discovered archaeological resource and describing the archaeological and historical research methods employed in the archaeological monitoring/data recovery program(s) undertaken. Information that may put at risk any archaeological resource shall be provided in a separate removable insert within the final report. Copies of the Draft FARR shall be sent to the ERO for review and approval. Once approved by the ERO, copies of the FARR shall be distributed as follows: California Archaeological Site Survey Northwest Information Center (NWIC) shall receive one (1) copy and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The Environmental Planning division of the Planning Department shall receive one bound copy, one unbound copy and one unlocked, searchable PDF copy on CD three copies of the FARR along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest or interpretive value, the ERO may require a different final report content, format, and distribution than that presented above.	

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CP-2: Construction activities for the proposed project and project variants would cause a substantial adverse change in the significance of human remains, if such resources are present within the project site.	S	Implement **M-CP-1a: Archaeological Testing, Monitoring, Data Recovery and Reporting** and **M-CP-1c: Accidental Discovery**, above.	LS
C-CP-1: Disturbance of archaeological resources, if encountered during construction of the proposed project and project variants, in combination with other past, present, and future reasonably foreseeable projects, would make a cumulatively considerable contribution to a significant cumulative impact on archaeological resources.	S	Implement **M-CP-1a: Archaeological Testing, Monitoring, Data Recovery and Reporting**, **M-CP-1b: Interpretation**, and **M-CP-1c: Accidental Discovery**, above.	LS
Transportation and Circulation			
TR-1: The proposed project and its variants would not cause a substantial increase in traffic that would cause the level of service to decline from LOS D or better to LOS E or F, or from LOS E to F at the nine study intersections in the project vicinity.	LS	None required.	LS

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TR-2: The proposed project and its variants would not cause a substantial increase in transit demand that could not be accommodated by adjacent transit capacity; nor would the proposed project or variants cause a substantial increase in delays or costs such that significant adverse impacts in transit service levels could occur.	LS	**I-TR-A: Transit Information for Residents** To encourage the use of transit to/from the project site, the project sponsor should provide a transportation insert in the new resident's move-in packet that would provide information on available transit service (nearby lines, schedules and fares), information on where Clipper Cards could be purchased, and information on the 511 Regional Rideshare Program. **I-TR-B: Alternative Transportation Modes for Hotel Guests** To encourage the use of alternative transportation modes, the hotel operator would provide an option for hotel guests registering online to purchase one, three, or seven-day Muni Passports or pre-loaded Clipper Cards, and would have Muni Passports and pre-loaded Clipper Cards available for purchase at the hotel. The hotel operator would provide information on the hotel website about how to access the hotel and nearby attractions via transit, walking, and bicycling.	LS
TR-3: The proposed project and its variants 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. ***cont'd.***	LS	**I-TR-C: Driveway Operations Plan** The owner / operator of the proposed project shall implement and adhere to all aspects of the *Driveway Operations Plan*, presented in the 75 Howard Street Project Transportation Study. The *Driveway Operations Plan* shall be a living document for the life of the project driveway, recorded with the Planning Department as part of the project case file. All updates to the *Driveway Operations Plan* shall be reviewed and approved by the Director of Planning, or his or her designee. Upon the request of the Director of Planning, or his or her designee, the owner / operator shall submit to the Department evidence of compliance with the *Driveway Operations Plan*, including but not limited to, records of loading dock activity and security camera footage. If the Planning Director, or his or her designee, suspects that the facility owner / operator is not adhering to the *Driveway Operations Plan*, the Planning Department shall notify the property owner in writing. If after 90 days since written notification, the Department determines that the owner / operator is still not adhering to the *Driveway Operations Plan*, the driveway shall be considered in violation of the Condition of Approval.	LS

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cont'd.		**I-TR-D: Vehicle Queues and Pedestrian Conflicts** It shall be the responsibility of the owner / operator of the proposed project to ensure that vehicle queues do not block any portion of the sidewalk or roadway of Howard Street, including any portion of any travel lanes or bike lanes. The owner / operator shall also ensure that no substantial pedestrian conflict as defined below is created at the project driveway. A vehicle queue is defined as one or more stopped vehicles destined to the project garage blocking any portion of the Howard Street sidewalk or roadway for a consecutive period of three minutes or longer on a daily or weekly basis, or for more than five (5) percent of any 60-minute period. Queues could be caused by unconstrained parking demand exceeding parking space or valet/mechanical parking system capacity; vehicles waiting for safe gaps in high volumes of pedestrian traffic; car or truck congestion within the parking garage or loading area; or a combination of these or other factors. A substantial pedestrian conflict is defined as a condition where drivers of inbound and / or outbound vehicles, frustrated by the lack of safe gaps in pedestrian traffic, unsafely merge their vehicle across the sidewalk while pedestrians are present and force pedestrians to stop or change direction to avoid contact with the vehicle, and / or contact between pedestrians and the vehicle would occur. If vehicle queues or substantial conflicts occur, the owner / operator of the facility shall employ abatement methods as needed to abate the queue and / or conflict. Appropriate abatement methods would vary depending on the characteristics and causes of the queue and conflict. 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 additional valet attendants or improved mechanical parking system; use of off-site parking facilities or shared parking with nearby uses; travel demand management strategies such as additional bicycle parking or resident/visitor shuttles; parking demand management strategies such as time-of-day parking surcharges; and / or limiting hours of access to the project driveway during periods of peak pedestrian traffic.	

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		If the Planning Director, or his or her designee, suspects that vehicle queues or a substantial conflict are present, the Planning Department shall notify the property owner in writing. The owner / operator shall hire a qualified transportation consultant to evaluate the conditions at the site for no less than seven days. The consultant shall submit a report to the Department documenting conditions. Upon review of the report, the Department shall determine whether or not queues and / or a substantial conflict exists, and shall notify the garage owner / operator of the determination in writing. If the Department determines that queues or a substantial conflict do exist, upon notification, the facility owner / operator shall have 90 days from the date of the written determination to carry out abatement measures. If after 90 days the Department determines that vehicle queues and / or a substantial conflict are still present or that the owner / operator has been unsuccessful at abating the identified vehicle queues or substantial conflicts, the hours of inbound and / or outbound access of the project driveway shall be limited during peak hours. The hours and directionality of the access limitations shall be determined by the Planning Department, communicated to the owner / operator in writing, and recorded in an updated *Driveway Operations Plan*. The owner / operator shall be responsible for limiting the hours of project driveway access as specified by the Planning Department. **I-TR-E: Installation of Pedestrian Alerting Devices** As an improvement measure to minimize conflicts between pedestrians and vehicles in front of the proposed project, a mirror and an audible and visual device would be installed at the garage entrance to automatically alert pedestrians when a vehicle is exiting the facility.	
TR-4: The proposed project and its variants would not create potentially hazardous conditions for bicyclists, or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas. ***cont'd.***	LS	Implement **I-TR-D: Vehicle Queues and Pedestrian Conflicts**, above **I-TR-F: Installation of Bicycle Racks on the Steuart Street Plaza** As an improvement measure to accommodate hotel and restaurant/retail visitors arriving by bicycle, the project sponsor would coordinate the installation of bicycle racks on the Steuart Street plaza with the San Francisco Municipal Transportation Agency. The project sponsor	LS

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		would work with SFMTA to establish the appropriate number and best location of the bicycle racks. **I-TR-G: Provision of Bicycle Signage and Information** As an improvement measure to facilitate bicycle travel the project sponsor will add appropriate signage and information in/near bicycle parking areas describing access to local bicycle routes and entries/exits to and from the bicycle parking area. **I-TR-H: Bicycle Availability to Hotel Guests** As an improvement measure to encourage bicycling to local destinations by hotel guests, the hotel operator will make bicycles available for use by hotel guests. Information about the program characteristics and requirements will be provided on the hotel website. The hotel operator will also provide information to hotel guests about purchasing a short-term membership in the City's bicycle share program, if implemented.	
TR-5: The loading demand of the proposed project and variants during the peak hour of loading activities would be accommodated within the proposed on-site loading facilities or within convenient on-street loading zones, and would not create potentially hazardous traffic conditions or significant delays involving traffic, transit, bicycles, or pedestrians. ***cont'd.***	LS	Implement **I-TR-C: Driveway Operations Plan**, above **I-TR-I: Sidewalk Widening** To improve pedestrian conditions in the area and to facilitate pedestrian movement in front of the project site, the project sponsor would work with SF Planning, SFMTA, and DPW to consider the potential construction of a wider sidewalk on the south side of Howard Street. The south sidewalk would be widened by approximately 7 feet, from the an existing width of about 13.5 feet to approximately 21.5 feet, starting at the west edge of the project site and extending east through the proposed Steuart Street Plaza, and onto The Embarcadero. The project sponsor would be required to fund the design and construction of this improvement. To facilitate passenger drop offs and pick ups, the existing 16-foot-wide sidewalk would not be widened for an approximate length of 35 feet at the proposed curbside white zone in front of the restaurant entrance near Steuart Street. Thus, the sidewalk widening would extended for a total distance of approximately 273 feet, 115 ft. from the west edge to Steuart Street,	LS

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		excluding the proposed passenger zone, 76 feet through the proposed Steuart Street Plaza, and 82 feet to The Embarcadero. This improvement measure would require that the proposed 24-foot wide curb cut that provides access into the Basement Level 1 parking garage and loading docks be widened to about 26 feet, in order to facilitate truck turning movements in and out of the building. This improvement measure would also require the additional elimination of four automobile and two motorcycle metered spaces on the south side of Howard Street (two automobile spaces in front of the project site, and two automobile and two motorcycle spaces west of Steuart Street), resulting in the elimination of a total of 15 automobile and two motorcycle metered spaces by the proposed project and the two variants. The increase in parking utilization created by the elimination of these on-street spaces would add to the expected parking deficits in the area during the midday period, but would be expected to be accommodated by other existing on-street spaces in the area during the evening period. The parking deficits associated with the proposed project and Variants would not create a significant parking impact. **I-TR-J: Reservation of Curb Parking for Residential Move-In and Move-Out** The project sponsor shall ensure that parking spaces on Howard Street, adjacent to the project site, are reserved as needed through the SFMTA by calling the San Francisco Customer Service Center (311) prior to move-in and move-out activities. This would reduce the potential for double parking on Howard Street during move-in and move-out activities. The project sponsor could also require tenants to schedule and coordinate move-in and move-out activities with building management to space out loading activities.	
TR-6: Construction and operation of the proposed project or its variants would not result in inadequate emergency access.	LS	None required.	LS

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TR-7: Construction and operation of the proposed project or its variants would not have a significant effect on the environment as they would not result in a substantial parking deficit that could create hazardous conditions or significant delays affecting traffic, transit, bicycles or pedestrians nor would the proposed project or its variants exhibit particular characteristics that would demonstrably render use of other modes infeasible.	LS	**I-TR-K: Installation of Electronic "Parking Full" Sign** As an improvement measure to minimize traffic congestion and queuing on Howard Street, an electronic sign that can be operated from inside the garage to indicate when the garage is full would be installed at the project garage entrance.	LS
TR-8: Construction of the proposed project and its variants would not result in significant transportation impacts. ***cont'd.***	LS	**I-TR-L: Expanded Traffic Control Plan for Construction** To reduce potential conflicts between construction activities and pedestrians, transit and vehicles at the project site, the project sponsor and project contractor would be required to prepare a Traffic Control Plan (TCP) for the project construction period. In addition to the standard elements of the TCP such as coordination with the San Francisco Municipal Transportation Agency, Department of Public Works, San Francisco Fire Department, etc., and the mandatory compliance with the *San Francisco Regulations for Working in San Francisco Streets* (the "Blue Book"), the expanded TCP could include: • Implementation of any necessary lane closures during times that avoid the a.m. and p.m. peak commute periods, • Stationing of uniformed off-duty San Francisco Police officers at various locations to facilitate the movement of pedestrians, bicyclists and transit vehicles • Scheduling of construction truck trips during hours of the day other than the peak morning and evening commute periods, and	LS

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		• Development of a construction activities plan so that certain activities such as pile driving do not disturb the Muni Metro tunnel located west of the project site. **I-TR-M: Carpool and Transit Access for Construction Workers** As an improvement measure to minimize parking demand and vehicle trips associated with construction workers, the construction contractor would include methods to encourage carpooling and transit access to the project site by construction workers as part of a Construction Management Plan. **I-TR-N: Project Construction Updates for Adjacent Businesses and Residents** As an improvement measure to minimize construction impacts on access to nearby locations, the project sponsor would provide nearby residences and adjacent businesses with regularly-updated information regarding project construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), travel lane closures, parking lane and sidewalk closures. A web site could be created by project sponsor that would provide current construction information of interest to neighbors, as well as contact information for specific construction inquiries or concerns.	
C-TR-1: The proposed project would contribute considerably to reasonably foreseeable future cumulative traffic increases that would cause levels of service to deteriorate to unacceptable levels at the intersection of Spear and Howard streets.	S	**M-C-TR-1: Modifications to the Intersection of Spear and Howard Streets** If changes to the current configuration of Steuart Street were to be implemented as part of the TCDP Public Realm Plan, configuration of the northbound and southbound approaches along Spear Street shall be modified to incorporate left-turn-only lanes and minor adjustments to the traffic signal timings at the intersection of Spear and Howard streets.	SUM
C-TR-2: The proposed project would not contribute considerably to reasonably foreseeable future cumulative increases in transit ***cont'd.***	LS	None required.	LS

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ridership that would cause ridership to exceed capacity standards.			
C-TR-3: Construction impacts of the proposed project or its variants would not result in a considerable contribution to a significant cumulative impact when combined with construction of other reasonably foreseeable future projects in the vicinity of the project site.	LS	None required	LS
Noise			
NO-1: Construction of the proposed project and project variants would generate noise levels in excess of standards established in the *San Francisco General Plan* or Noise Ordinance and would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. ***cont'd.***	S	**M-NO-1a: Noise Control Measures During Pile Driving [TCDP EIR M-NO-2a]** A set of site-specific noise attenuation measures shall be completed under the supervision of a qualified acoustical consultant. These attenuation measures shall include as many of the following control strategies, and any other effective strategies, as feasible: • The project sponsor shall require the construction contractor to erect temporary plywood noise barriers along the boundaries of the project site to shield potential sensitive receptors and reduce noise levels; • The project sponsor shall require the construction contractor to implement "quiet" pile-driving technology (such as predrilling of piles, sonic pile drivers, and the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions; • The project sponsor shall require the construction contractor to monitor the effectiveness of noise attenuation measures by taking noise measurement; and	LS

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cont'd.		• The project sponsor shall require that the construction contractor limit pile driving activity to result in the least disturbance to neighboring uses. **M-NO-1b: General Construction Noise Control Measures [TCDP EIR M-NO-2b]** To ensure that project noise from construction activities is minimized to the maximum extent feasible, the project sponsor shall undertake the following: • The project sponsor shall require the general contractor to ensure that equipment and trucks used for project construction utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible). • The project sponsor shall require the general contractor to locate stationary noise sources (such as compressors) as far from adjacent or nearby sensitive receptors as possible, to muffle such noise sources, and to construct barriers around such sources and/or the construction site, which could reduce construction noise by as much as five dBA. To further reduce noise, the contractor shall locate stationary equipment in pit areas or excavated areas, if feasible. • The project sponsor shall require the general contractor to use impact tools (e.g., jack hammers, pavement breakers, and rock drills) that are hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used, along with external noise jackets on the tools, which could reduce noise levels by as much as 10 dBA. • The project sponsor shall include noise control requirements in specifications provided to construction contractors. Such requirements could include, but not be limited to, performing all work in a manner that minimizes noise to the extent feasible; use of equipment with effective mufflers; undertaking the most noisy activities during times of least disturbance to surrounding residents and occupants, as feasible; and selecting haul routes that avoid residential buildings inasmuch as such routes are otherwise feasible.	

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		• Prior to the issuance of the building permit, along with the submission of construction documents, the project sponsor shall submit to the Planning Department and Department of Building Inspection (DBI) a list of measures to respond to and track complaints pertaining to construction noise. These measures shall include (1) a procedure and phone numbers for notifying DBI, the Department of Public Health, and the Police Department (during regular construction hours and off-hours); (2) a sign posted on-site describing noise complaint procedures and a complaint hotline number that shall be answered at all times during construction; (3) designation of an on-site construction complaint and enforcement manager for the project; and (4) notification of neighboring residents and non-residential building managers within 300 feet of the project construction area at least 30 days in advance of extreme noise generating activities (defined as activities generating noise levels of 90 dBA or greater) about the estimated duration of the activity.	
NO-2: Construction of the proposed project and project variants would result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.	S	Implement **M-NO-1a: Noise Control Measures During Pile Driving [TCDP EIR M-NO-2a]**, above.	LS
NO-3: Operation of the proposed project and project variants would generate noise levels in excess of standards established in the *San Francisco General Plan* or Noise Ordinance and would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	S	**M-NO-3: Interior Mechanical Equipment [from TCDP EIR M-NO-1e]** The project sponsor shall require that effects of mechanical equipment noise on adjacent and nearby noise-sensitive uses be evaluated by a qualified acoustical consultant and that control of mechanical noise, as specified by the acoustical consultant, be incorporated into the final project design of new buildings to achieve the maximum feasible reduction of building equipment noise, consistent with *Building Code* and Noise Ordinance requirements and CEQA thresholds, such as through the use of fully noise-insulated enclosures around rooftop equipment and/or incorporation of mechanical equipment into intermediate building floor(s).	LS

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NO-4: The proposed project's new residential uses and open spaces and project variants would not be substantially affected by existing noise levels.	LS	None required.	LS
NO-5: The proposed project and project variants would not expose people to excessive groundborne vibration or groundborne noise levels and the proposed project's new residential or hotel uses would not be substantially affected by existing vibration levels.	LS	None required.	LS
C-NO-1: Construction of the proposed project and project variants, in combination with other past, present, and reasonably foreseeable future projects in the project vicinity, would result in a cumulatively considerable contribution to significant temporary or periodic cumulative increases in ambient noise or vibration levels in the project vicinity above levels existing without the proposed project.	S	Implement **M-NO-1a: Noise Control Measures During Pile Driving [TCDP EIR M-NO-2a]** and **M-NO-1b: General Construction Noise Control Measures [TCDP EIR M-NO-2b],** above. **M-C-NO-1a: Cumulative Construction Noise Control Measures [TCDP EIR M-C-NO]** The project sponsor shall cooperate with and participate in any City-sponsored construction noise control program for the Transit Center District Plan area or other City-sponsored areawide program developed to reduce potential effects of construction noise in the project vicinity. Elements of such a program could include a community liaison program to inform residents and building occupants of upcoming construction activities, staggering of construction schedules so that particularly noisy phases of work do not overlap at nearby project sites, and, potentially, noise and/or vibration monitoring during construction activities that are anticipated to be particularly disruptive.	LS

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C-NO-2: Operation of the proposed project and project variants in combination with other past, present, and reasonably foreseeable future projects in the project vicinity would not result in a cumulatively considerable contribution to significant cumulative permanent increases in ambient noise levels in the project vicinity above levels existing without the project.	LS	None required.	LS
Air Quality			
AQ-1: The proposed project's and project variants' construction activities would generate fugitive dust and criteria air pollutants, but would not violate an air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants.	LS	None required.	LS
AQ-2: The proposed project's and project variants' construction activities would generate toxic air contaminants, including diesel particulate matter, which would expose sensitive receptors to ***cont'd.***	S	**M-AQ-2 – Construction Emissions Minimization [TCDP EIR M-AQ-5]** **A.** *Construction Emissions Minimization Plan.* Prior to issuance of a construction permit, the project sponsor shall submit a Construction Emissions Minimization Plan (Plan) to the Environmental Review Officer (ERO) for review and approval by an Environmental Planning Air Quality Specialist. The Plan shall detail project compliance with the following requirements:	LS

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substantial pollutant concentrations. ***cont'd.***		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 are available, portable diesel engines shall be prohibited; b) All off-road equipment shall have: i. Engines that meet or exceed either U.S. Environmental Protection Agency (USEPA) or California Air Resources Board (ARB) Tier 2 off-road emission standards, *and* ii. Engines that are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy (VDECS). c) Exceptions: i. Exceptions to A(1)(a) *may* be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that an alternative source of power is limited or infeasible at the project site and that the requirements of this exception provision apply. Under this circumstance, the sponsor shall submit documentation of compliance with A(1)(b) for onsite power generation. ii. Exceptions to A(1)(b)(ii) *may* be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that a particular piece of off-road equipment with an ARB Level 3 VDECS is: (1) technically not feasible, (2) would not produce desired emissions reductions due to expected operating modes, (3) installing the control device would create a safety hazard or impaired visibility for the operator, or (4) there is a compelling emergency need to use off-road equipment that are not retrofitted with an ARB Level 3 VDECS and the sponsor has submitted documentation to the ERO that the requirements of this exception provision apply. If granted	

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cont'd.		an exception to A(1)(b)(ii), the project sponsor must comply with the requirements of A(1)(c)(iii). iii. If an exception is granted pursuant to A(1)(c)(ii), the project sponsor shall provide the next cleanest piece of off-road equipment as provided by the step down schedules in Table 4.G.6.	

Table 4.G.6 – Off-Road Equipment Compliance Step-down Schedule

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

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.

* Alternative fuels are not a VDECS.

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cont'd.		2. The project sponsor shall require the idling time for off-road and on-road equipment be limited to no more than *two* minutes, except as provided in exceptions to the applicable State regulations regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, Chinese) in designated queuing areas and at the construction site to remind operators of the two minute idling limit. 3. The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications. 4. The Plan shall include estimates of the construction timeline by phase with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information may include, but is not limited to: equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel 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 Plan shall be kept on-site and available for review by any persons requesting it and a legible sign shall be posted at the perimeter of the construction site indicating to the public the basic requirements of the Plan and a way to request a copy of the Plan. The project sponsor shall provide copies of Plan to members of the public as requested. **B.** *Reporting*. Monthly reports shall be submitted to the ERO indicating the construction phase and off-road equipment information used during each phase including the information required in A(4). In addition, for off-road equipment using alternative fuels, reporting shall include the actual amount of alternative fuel used. Within six months of the completion of construction activities, the project sponsor shall submit to the ERO a final report summarizing construction activities. The final report shall indicate the start	

Impact	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Legend: NI = No Impact; LS = Less than Significant; S = Significant; SU = Significant and unavoidable impact; SUM = Significant and unavoidable impact with mitigation; NA = Not Applicable			
		and end dates and duration of each construction phase. For each phase, the report shall include detailed information required in A(4). In addition, for off-road equipment using alternative fuels, reporting shall include the actual amount of alternative fuel used. **C.** *Certification Statement and On-site Requirements.* Prior to the commencement of construction activities, the project sponsor must certify (1) compliance with the Plan, and (2) all applicable requirements of the Plan have been incorporated into contract specifications.	
AQ-3: During project operations, the proposed project and project variants would result in emissions of criteria air pollutants, but not at levels that would violate an air quality standard, contribute to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants.	LS	None required.	LS
AQ-4: The proposed project and project variants would generate toxic air contaminants, including diesel particulate matter, and would expose sensitive receptors to substantial air pollutant concentrations. ***cont'd.***	S	**M-AQ-4a: Best Available Control Technology for Diesel Generators [TCDP EIR M-AQ-3]** All diesel generators shall have engines that (1) meet Tier 4 Final or Tier 4 Interim emission standards, or (2) meet Tier 2 emission standards and are equipped with a California Air Resources Board (ARB) Level 3 Verified Diesel Emissions Control Strategy (VDECS). **M-AQ-4b: Air Filtration Measures [TCDP EIR M-AQ-2]** *Air Filtration and Ventilation Requirements for Sensitive Land Uses*. Prior to receipt of any building permit, the project sponsor shall submit a ventilation plan for the proposed building(s). The ventilation plan shall show that the building ventilation system removes at least 80 percent of the outdoor $PM_{2.5}$ concentrations from habitable areas and be designed by an engineer certified by ASHRAE [the American Society of Heating, Refrigeration and Air	LS

Impact	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
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		Conditioning Engineers], who shall provide a written report documenting that the system meets the 80 percent performance standard identified in this measure and offers the best available technology to minimize outdoor to indoor transmission of air pollution. *Maintenance Plan.* Prior to receipt of any building permit, the project sponsor shall present a plan that ensures ongoing maintenance for the ventilation and filtration systems. *Disclosure to buyers and renters.* The project sponsor shall also ensure the disclosure to buyers (and renters) that the building is located in an area with existing sources of air pollution and as such, the building includes an air filtration and ventilation system designed to remove 80 percent of outdoor particulate matter and shall inform occupants of the proper use of the installed air filtration system.	
AQ-5: Construction and operation of the proposed project and project variants would not conflict with, or obstruct implementation of, the *Bay Area 2010 Clean Air Plan*, the applicable air quality plan.	LS	None required.	LS
C-AQ-1: Construction and operation of the proposed project and project variants, in combination with past, present, and reasonably foreseeable future development in the project area, would contribute to cumulative air quality impacts.	S	Implement **M-AQ-2: Construction Emissions Minimization [TCDP EIR M-AQ-5]**, **M-AQ-4a: Best Available Control Technology for Diesel Generators [TCDP EIR M-AQ-3]**, and **M-AQ-4b: Air Filtration Measures [TCDP EIR M-AQ-2**, above.	LS

Impact	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Legend: NI = No Impact; LS = Less than Significant; S = Significant; SU = Significant and unavoidable impact; SUM = Significant and unavoidable impact with mitigation; NA = Not Applicable			
Wind and Shadow			
WS-1: The proposed project or variants would create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas.	S	No feasible mitigation available.	SU
C-WS-1: The proposed project or variants, in combination with past, present, and reasonably foreseeable future projects in the project vicinity, would create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas, resulting in a significant cumulative shadow impact. The proposed project or variants would make a cumulatively considerable contribution to this significant cumulative shadow impact.	S	No feasible mitigation available.	SU
Utilities and Service Systems			
UT-1: The proposed project and project variants would not require or result in the construction of new wastewater or stormwater drainage facilities or in the expansion of existing facilities, the construction of which could cause significant environmental effects.	LS	None required.	LS

Impact	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Legend: NI = No Impact; LS = Less than Significant; S = Significant; SU = Significant and unavoidable impact; SUM = Significant and unavoidable impact with mitigation; NA = Not Applicable			
C-UT-1: Construction of the proposed project and project variants, in combination with other past, present and reasonably foreseeable future projects, would not result in a cumulatively considerable contribution to a significant cumulative utilities and service systems impact.	LS	None required.	LS
Biological Resources			
BI-1: Construction of the new high-rise tower under the proposed project and project variants would adversely impact birdlife, bird movement, and migration. ***cont'd.***	S	**M-BI-1a: Design Standards to Render Building Less Hazardous to Birds** The proposed project and project variants shall conform with the locational standards of Planning Code Section 139, *Standards for Bird-Safe Buildings*, specific only to the provisions applicable to locational hazards as described in Planning Code Section 139. Therefore: • Glazing as a percentage of the façade: Bird-Safe Glazing Treatment is required such that the Bird Collision Zone [the building façade from grade and extending upwards for 60 feet, and glass façades directly adjacent to landscaped roofs 2 acres or larger and extending upwards 60 feet from the level of the subject roof] facing the San Francisco Bay consists of no more than 10 percent untreated glazing. Building owners would concentrate permitted transparent glazing on the ground floor and lobby entrances to enhance visual interest for pedestrians. • Bird Safe Glazing Treatments: these include fritting, permanent stencils, frosted glass, exterior screens, physical grids placed on the exterior of glazing or UV patterns visible to birds. Vertical elements of the pattern shall be at least ¼-inch wide with a maximum spacing of 4 inches, and horizontal elements shall be at least 1/8-inch wide with a maximum spacing of 2 inches. Equivalent treatments recommended by a qualified	LS

Impact	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Legend: NI = No Impact; LS = Less than Significant; S = Significant; SU = Significant and unavoidable impact; SUM = Significant and unavoidable impact with mitigation; NA = Not Applicable			
cont'd.		biologist may be used if approved by the Zoning Administrator. No glazing shall have a "Reflectivity Out" coefficient greater than 30 percent. • Minimal lighting (limited to pedestrian safety needs) shall be used. Lighting shall be shielded. No uplighting should be used. No event searchlights should be permitted. • No horizontal axis windmills or vertical axis wind generators that do not appear solid shall be used. **M-BI-1b: Night Lighting Minimization [TCDP EIR I-BI-2]** In compliance with the voluntary San Francisco Lights Out Program, the proposed project and variants would implement bird-safe building operations to prevent and minimize birdstrike impacts, including but not limited to the following measures: • Reduce building lighting from exterior sources by: o Minimizing amount and visual impact of perimeter lighting and façade uplighting and avoid up-lighting of rooftop antennae and other tall equipment, as well as of any decorative features; o Installing motion-sensor lighting; o Utilizing minimum wattage fixtures to achieve required lighting levels. • Reduce building lighting from interior sources by: o Dimming lights in lobbies, perimeter circulation areas, and atria; o Turning off all unnecessary lighting by 11:00 p.m. through sunrise, especially during peak migration periods (mid-March to early June and late August through late October); o Utilizing automatic controls (motion sensors, photo-sensors, etc.) to shut off lights in the evening when no one is present;	

Impact	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
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		o Encouraging the use of localized task lighting to reduce the need for more extensive overhead lighting; o Scheduling nightly maintenance to conclude by 11:00 p.m.; o Educating building residents and other users about the dangers of night lighting to birds. **I-BI-A: Tenant Education** The project sponsor would provide their tenants with a copy of the City's *Standards for Bird-Safe Buildings*. This is required to educate the building's occupants about the risks to birds of nighttime lighting.	
BI-2: Construction of the new high-rise tower under the proposed project and project variants would not interfere with the movement of or have a substantial adverse effect on native resident bats.	LS	None required.	LS
C-BI-1: The proposed project and project variants, in combination with reasonably foreseeable future development, would result in a considerable contribution to significant cumulative impacts related to avian wildlife.	S	Implement **M-BI-1a: Design Standards to Render Building Less Hazardous to Birds** and **M-BI-1b: Night Lighting Minimization [TCDP EIR I-BI-2]**.	LS

Impact	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Legend: NI = No Impact; LS = Less than Significant; S = Significant; SU = Significant and unavoidable impact; SUM = Significant and unavoidable impact with mitigation; NA = Not Applicable			
Hydrology and Water Quality			
HY-1: The proposed project and project variants would not expose people or structures to a significant risk of inundation by seiche, tsunami, or mudflow.	LS	None required	LS
HY-2: The proposed project and project variants would expose people or structures to increased risk of flooding due to climate-induced sea level rise. **.**	S	**M-HY-2: Emergency Plan** The project sponsor, in conjunction with the building manager, shall prepare an initial Emergency Plan that shall include at a minimum: monitoring by the building manager of agency forecasts of tsunamis and floods, methods for notifying residents and businesses of such risks, and evacuation plans. The plan shall be prepared prior to occupancy of any part of the proposed project. The building manager shall maintain and update the Emergency Plan annually. The building manager shall provide educational meetings for residents and businesses at least three times per year and conduct drills regarding the Emergency Plan at least once per year.	SUM
C-HY-1: The proposed project and project variants would not result in a significant cumulative impact related to increased risk of flooding due to climate-induced sea level rise.	LS	None required	LS

Table S.2: Summary of Significant Impacts of Proposed Project Identified in the Initial Study

Impact	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Legend: NI = No Impact; LS = Less than Significant; S = Significant; SU = Significant and unavoidable adverse impact, no feasible mitigation; NA = Not Applicable			
Cultural and Paleontological Resources			
CP-3: Construction activities of the proposed project or project variants could affect unique geologic features or unique paleontological resources, if present within the project site. ***cont'd.***	S	**M-CP-3: Paleontological Resources Monitoring and Mitigation Program.** The project sponsor shall retain the services of a qualified paleontological consultant having expertise in California paleontology to design and implement a Paleontological Resources Monitoring and Mitigation Program. The PRMMP shall include a description of when and where construction monitoring would be required; emergency discovery procedures; sampling and data recovery procedures; procedure for the preparation, identification, analysis, and curation of fossil specimens and data recovered; preconstruction coordination procedures; and procedures for reporting the results of the monitoring program. The PRMMP shall be consistent with the Society for Vertebrate Paleontology Standard Guidelines for the mitigation of construction-related adverse impacts to paleontological resources and the requirements of the designated repository for any fossils collected. During construction, earth-moving activities shall be monitored by a qualified paleontological consultant having expertise in California paleontology in the areas where these activities have the potential to disturb previously undisturbed native sediment or sedimentary rocks. Monitoring need not be conducted in areas where the ground has been previously disturbed, in areas of artificial fill, in areas underlain by nonsedimentary rocks, or in areas where exposed sediment would be buried, but otherwise undisturbed. The consultant's work shall be conducted in accordance with this measure and at the direction of the City's ERO. Plans and reports prepared by the consultant 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. Paleontological monitoring and/or data recovery programs required by this measure could suspend construction of the proposed project for as short a duration as	LS

Impact	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Legend: NI = No Impact; LS = Less than Significant; S = Significant; SU = Significant and unavoidable adverse impact, no feasible mitigation; NA = Not Applicable			
		reasonably possible and in no event for more than a maximum of four weeks. At the direction of the ERO, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means to reduce potential effects on a significant paleontological resource as previously defined to a less-than-significant level.	
Wind and Shadow			
WS-1: The proposed project or project variants would not alter winds in a manner that would substantially affect public areas.	LS	**I-WS-A:** As an improvement measure to reduce wind speeds in areas of usable open space on the roof of the tower, the project sponsor shall strive to install, or cause to be installed, wind reduction measures that could include windscreens along the exposed perimeter of the roof. Additional windscreens and/or landscaping should be considered on the west and northwest sides of any seating areas.	LS
C-WS-1: The proposed project or project variants, in combination with past, present, or reasonably foreseeable future projects in the site vicinity, would not make a cumulatively considerable contribution to a significant cumulative wind impact.	LS		LS
Hazards and Hazardous Materials			
HZ-1: The proposed project or project variants would create a significant hazard to the public or the environment through either: a) the routine transport, use, or disposal of hazardous materials, or b) through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment. ***cont'd.***	S	**M-HZ-1a: Site Assessment and Corrective Action for All Sites** If potential exposure to vapors is suspected, a screening evaluation shall be conducted in accordance with guidance developed by the DTSC to estimate worst case risks to building occupants from vapor intrusion using site specific data and conservative assumptions specified in the guidance. If an unacceptable risk were indicated by this conservative analysis, then additional site data shall be collected and a site specific vapor intrusion evaluation, including fate and transport modeling, shall be required to more accurately evaluate site risks. Should the site specific evaluation identify substantial risks, then additional measures shall be required to reduce risks to	LS

Impact	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Legend: NI = No Impact; LS = Less than Significant; S = Significant; SU = Significant and unavoidable adverse impact, no feasible mitigation; NA = Not Applicable			
		acceptable levels. These measures could include remediation of site soil and/or groundwater to remove vapor sources, or, should this be infeasible, use of engineering controls such as a passive or active vent system and a membrane system to control vapor intrusion. Where engineering controls are used, a deed restriction shall be required, and shall include a description of the potential cause of vapors, a prohibition against construction without removal or treatment of contamination to approved risk-based levels, monitoring of the engineering controls to prevent vapor intrusion until risk-based cleanup levels have been met, and notification requirements to utility workers or contractors who may have contact with contaminated soil and groundwater while installing utilities or undertaking construction activities. The screening level and site-specific evaluations shall be conducted under the oversight of SFDPH and methods for compliance shall be specified in the site mitigation plan prepared in accordance with this measure, and subject to review and approval by the SFDPH. The deed restriction, if required, shall be recorded at the San Francisco Office of the Assessor-Recorder after approval by the SFDPH and DTSC. **M-HZ-1b: Hazardous Building Materials Abatement** The project sponsor of any development project in the TCDP area shall ensure that any building planned for demolition or renovation is surveyed for hazardous building materials including PCB-containing electrical equipment, fluorescent light ballasts containing PCBs or DEHP, and fluorescent light tubes containing mercury vapors. These materials shall be removed and properly disposed of prior to the start of demolition or renovation. Old light ballasts that are proposed to be removed during renovation shall be evaluated for the presence of PCBs and in the case where the presence of PCBs in the light ballast cannot be verified, they shall be assumed to contain PCBs, and handled and disposed of as such, according to applicable laws and regulations. Any other hazardous building materials identified either before or during demolition or renovation shall be abated according to Federal, State, and local laws and regulations.	

S.3. SUMMARY OF PROJECT ALTERNATIVES

Three alternatives are evaluated in this EIR: the No Project Alternative; the Code Compliant Alternative; and the Reduced Height Alternative. The three alternatives are described in detail in Chapter 6, Alternatives. Table S.3: Comparison of Project and Alternative Impacts, on p. S.45, shows a comparison of the potential environmental impacts that may result from the alternatives to those of the proposed project.

ALTERNATIVE A: NO PROJECT ALTERNATIVE

Under Alternative A, No Project, the existing conditions at the 75 Howard Street project site would not change. The existing, legally nonconforming 550-space, 91-foot-tall, eight-level commercial parking garage on the 75 Howard Street building site would be retained in its current condition. The proposed 348-foot-tall, 432,253-gsf residential high-rise tower containing 186 market rate units, approximately 5,658 gsf of retail use, and 175 below-grade parking spaces would not be constructed, nor would the proposed project variants. Assessor's Block 3742/Lot 12 would remain vacant and paved, and would continue to be owned by the City and County of San Francisco for construction staging and other temporary uses. There would be no landscape or hardscape improvements to the open space site or portions of the surrounding right-of way. The on-street parking along the segment of Steuart Street south of Howard Street would remain. There would be no changes to or narrowing of this segment of Steuart Street, and the turnaround bulb at the southern terminus of Steuart Street would not be reconfigured. Assuming that the existing physical conditions at the project site were to continue for the foreseeable future, conditions described in detail for each environmental topic in Chapter 4, Environmental Setting, Impacts, and Mitigation, and in the NOP/IS, Section E. Evaluation of Environmental Effects (see Appendix A) would remain and none of the impacts associated with the proposed project would occur.

ALTERNATIVE B: CODE COMPLIANT ALTERNATIVE

The Alternative B: Code Compliant Alternative provides an alternative that meets all applicable provisions of the Planning Code. Under this alternative, the project site would remain within the 200-S Height and Bulk District as shown on Zoning Map Sheet HT01, the 200-foot height limit specified on Map 5 (Proposed Height and Bulk Districts) in the *Downtown Area Plan* of the *General Plan*. Development under this alternative would comply with the bulk controls for the "lower tower" and "upper tower" as set forth under Planning Code Section 270(d). This alternative would not include either the Parking Variant or Residential/Hotel Mixed Use Variant analyzed for the proposed project.

Under this alternative, the existing commercial parking garage would be demolished and a new 18-story, approximately 200-foot-tall tower (plus an additional 20-foot-tall elevator/mechanical penthouse and screening) would be constructed on the 75 Howard Street building site (see Figure 6.1: Code Compliant Alternative Site Plan and Figure 6.2: Code Compliant Alternative Massing Diagrams, p. 6.13 and p. 6.14, respectively). This alternative would be 13 stories and 150 feet shorter than the tower under the proposed project. The Code Compliant Alternative would contain 169 market rate units (17 fewer units than under the proposed project) and approximately 5,900 gsf of retail use (slightly less than under the proposed project), including space for restaurant and café uses.

Under the Code Compliant Alternative, a total of 146 parking spaces (29 fewer spaces than under the proposed project) would be constructed in a 25,700-gsf parking garage located on two below-grade levels accessed from Howard Street. One parking space would be reserved for car-share vehicles, two parking spaces would be reserved for commercial uses, and 143 parking spaces would be assigned to building residents. Similar to the proposed project, none of the parking spaces would be independently accessible; all vehicles would be mechanically parked by valet in stacked spaces. Similar to the proposed project, this alternative would include two loading spaces located on Basement Level 1. This alternative would also include 55 bicycle storage spaces (9 fewer than under the proposed project) located on Basement Level 1.

The Code Compliant Alternative would not include the proposed improvements to the open space site on Assessor’s Block 3742/Lot 12. The site would remain vacant and paved with asphalt, and would continue to be owned by the City and County of San Francisco for construction staging and other temporary uses. There would be no landscape or hardscape improvements to the open space site or portions of the surrounding right-of way. Under this alternative, the on-street parking along the east-side of Steuart Street south of Howard Street would remain; however, the on-street parking along the west-side of Steuart Street adjacent to the east elevation of the proposed building would be removed for curb-side loading. No changes would occur with regard to narrowing this segment of Steuart Street, and the turnaround bulb at the southern terminus of Steuart Street would not be eliminated, as it would under the proposed project. However, the sidewalks adjacent to the building would be improved pursuant to the requirements of Planning Code Section 138.1.

ALTERNATIVE C: REDUCED HEIGHT ALTERNATIVE

Alternative C: Reduced Height Alternative provides an alternative that would reduce (but not eliminate) the land use, aesthetic and shadow impacts when compared to the proposed project. Under this alternative, the existing commercial parking garage would be demolished and a new 25-story, approximately 281-foot-tall tower (plus an additional 17-foot-tall elevator/mechanical penthouse screening) would be constructed on the 75 Howard Street building site (see Figure 6.3: Reduced Height Alternative Site Plan and Figure 6.4: Reduced Height Alternative Massing Diagrams, p. 6.32 and p. 6.33, respectively). This alternative would be 6 stories or 67 feet shorter than the tower under the proposed project. The Reduced Height Alternative would contain 172 market rate units (14 fewer units than under the proposed project) and approximately 5,900 gsf of retail use (slightly less than under the proposed project).

Under the Reduced Height Alternative, a total of 159 parking spaces (16 fewer spaces than under the proposed project) would be constructed in a 25,700-gsf parking garaged located on two below-grade levels accessed from Howard Street. One parking space would be reserved for car-share vehicles and 158 parking spaces would be assigned to building residents and commercial uses. Similar to the proposed project, none of the parking spaces would be independently accessible; all vehicles would be mechanically parked by valet in stacked spaces. Similar to the proposed project, this alternative would include two loading spaces located on Basement Level 1. This alternative would also include 56-bicycle storage spaces (8 fewer than under the proposed project) located on Basement Level 1. The Reduced Height Alternative would include landscaping and paving improvements, resulting in a new 4,780-sq.-ft. landscaped, publicly accessible open space at Block 3742/Lot 12 and the portion of the Steuart Street right-of-way south of Howard Street. As under the proposed project, on-street parking along the segment of Steuart Street south of Howard Street would be eliminated. This segment of Steuart Street would be narrowed, and the turnaround bulb at the southern terminus of Steuart Street would be reconfigured.

This alternative would comply with the lower tower bulk controls, but it would not comply with the upper tower bulk control that establishes a maximum diagonal building dimension of 160 feet. The tower portion of this alternative would have a maximum diagonal building dimension of 170 feet. In addition, this alternative would not comply with the volume reduction bulk control for the upper tower, which requires that the average floor size of the upper tower be reduced as set forth in Planning Code Section 270(d)(3)(B). Based on an average lower tower floor size of 13,850 sq. ft., the upper tower would have to be reduced by 15 percent (i.e., the average upper tower floor size cannot exceed 11,772 sq. ft.). The upper tower (floors 16 and above) of this alternative would have an average floor size of approximately 13,850 sq. ft. This alternative would require bulk exceptions pursuant to Planning Code Sections 270, 272, and 309.

Table S.3: Comparison of Significant Impacts of Project to Impacts of Alternatives

	Proposed Project	No Project Alternative	Code Compliant Alternative	Reduced Height Alternative
Legend: NI = No Impact; LS = Less than Significant; S = Significant; SU = Significant and unavoidable; SUM = Significant and unavoidable impact with mitigation; NA = Not Applicable				
Description				
High-Rise Tower Height	348 ft	-	200 ft	281 ft
Number of Stories	31	-	18	25
Number of Residential Units	186 units	-	169 units	172 units
GSF by Use				
Residential	285,498 gsf	None	233,530 gsf	280,430 gsf
Retail	5,658 gsf	None	5,900 gsf	5,900 gsf
Parking	26,701 gsf	166,483 gsf	25,700 gsf	25,700 gsf
Other [a]	114,396 gsf	None	91,070 gsf	95,820 gsf
Total GSF	***432,253 gsf***	***166,483 gsf***	***356,200 gsf***	***407,850 gsf***
Open Space Site	Yes	No	No	Yes
Parking				
Public parking Spaces	-	540	-	-
Residential Spaces [b]	172	-	143	156
Commercial Spaces	2	-	2	2
Car-share Spaces [c]	1	-	1	1
Total Parking Spaces	**175**	**540**	**146**	**159**
Bicycle Parking Spaces	64	-	55	56
Loading				
Off-street spaces	2	-	2	2
On-street loading zones	2	-	1	2
Ability to Meet Project Sponsor's Objectives				
	Yes	No	Some	Most
Land Use and Land Use Planning				
Plan, policy, or regulation conflict	**LU-1**: The proposed project or variants would conflict with an 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. (SU)	Not applicable	Less than the proposed project. (LS)	Less than the proposed project. (SU)

	Proposed Project	No Project Alternative	Code Compliant Alternative	Reduced Height Alternative
Legend: NI = No Impact; LS = Less than Significant; S = Significant; SU = Significant and unavoidable; SUM = Significant and unavoidable impact with mitigation; NA = Not Applicable				
Aesthetics				
Scenic Vista	**AE-1**: The proposed project and project variants would have a substantial adverse effect on a scenic vista. (SU)	Not applicable	Less than the proposed project. (LS)	Similar to but less than the proposed project. (SU)
Transportation and Circulation				
Cumulative traffic – intersection operations	**C-TR-1**: The proposed project would contribute considerably to reasonably forseeable future cumulative traffic increases that would cause levels of service to deteriorate to unacceptable levels at the intersection of Spear and Howard Streets. (SUM)	Not applicable	Similar to but less than the proposed project. (SUM)	Similar to but less than the proposed project. (SUM)
Shadow				
Shadows	**WS-1**: The proposed project or variants would create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas. (SU)	Not applicable	Similar to but less than the proposed project. (SU)	Similar to but slightly less than the proposed project. (SU)
Cumulative shadows	**C-WS-1**: The proposed project or variants, in combination with past, present, and reasonably foreseeable future projects in the project vicinity, would create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas, resulting in a significant cumulative shadow impact. The proposed project or variants would make a cumulatively considerable contribution to this significant cumulative shadow impact. (SU)	Not applicable	Similar to but less than the proposed project. (SU)	Similar to but slightly less than the proposed project. (SU)
Hydrology and Water Quality				
Sea level rise	**HY-2**: The proposed project and project variants would expose people or structures to increased risk of flooding due to climate-induced sea level rise. (SUM)	Existing flooding risks due to sea level rise would remain on the project site.	Similar to the proposed project. (SUM)	Similar to the proposed project. (SUM)

	Proposed Project	No Project Alternative	Code Compliant Alternative	Reduced Height Alternative

Legend: NI = No Impact; LS = Less than Significant; S = Significant; SU = Significant and unavoidable; SUM = Significant and unavoidable impact with mitigation; NA = Not Applicable

Notes:
[a] Includes space devoted to mechanical, circulation and building support areas.
[b] Includes the maximum number of off-street parking spaces allowed as of right in the C-3 District where the proposed project is located plus accessory off-street parking spaces as determined through the Planning Code Section 309 Review process. Project sponsor has requested an increase to the maximum amount of accessory off-street parking spaces.
[c] Required per SF Planning Code Section 166.

Sources: Turnstone Consulting and Adavant Consulting, February 2013

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The EIR is required to identify the environmentally superior alternative that has the fewest significant environmental impacts from among the other alternatives evaluated. The proposed project would result in a significant and unavoidable cumulative impact related to land use and land use planning, aesthetics, transportation and circulation, shadow, and hydrology and water quality. The Code Compliant Alternative would be the environmentally superior alternative because it would result in less-than-significant impacts related to land use and land use planning and aesthetics, unlike the proposed project. The Code Compliant Alternative would still result in significant and unavoidable impacts, although to a lesser degree than the proposed project, related to cumulative transportation and circulation, shadow, and hydrology and water quality.

The Code Compliant Alternative would comply with the existing height limit for the project site, and therefore would have a shorter high-rise tower than the proposed project. This alternative would meet the policies of the *General Plan's* Urban Design Element, *Downtown Area Plan*, and *Transit Center District Plan* that call for buildings at the southeast edge of Downtown to step down in height toward the waterfront. At the lower height limit, this alternative would result in less annual net new shadow due to the reduced height of the high-rise tower, which would substantially step down toward the waterfront. The Code Compliant Alternative would comply with the existing height limit for the project site, and would result in less annual net new shadow on Rincon Park than under the proposed project. Thus, the Code Compliant Alternative would be the environmentally superior alternative.

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

An Environmental Evaluation application for the 75 Howard Street project was submitted to the Planning Department on January 13, 2012. This application was revised on April 25, 2012 to accommodate minor adjustments to the proposed project's program and design. The Planning Department prepared an Initial Study and published a Notice of Preparation of an EIR on December 12, 2012, announcing its intent to prepare and distribute a focused EIR (the NOP/IS is presented as Appendix A to this EIR). Publication of the NOP/IS initiated a 30-day public review and comment period that began on December 13, 2012, and ended on January 11, 2013. Individuals and agencies that received these notices included owners of properties within 300 feet of the project site, and potentially interested parties, including regional and state agencies. During the public review and comment period, 11 comment letters were submitted to the Planning Department by interested parties. The comment letters on the NOP/IS raised the issues listed on p. S.48.

On the basis of public comments on the NOP/IS, potential areas of controversy for the proposed project include the following:

- Project Description: Size of proposed residential units, private open space requirements, project site ownership, and accuracy of identification of surrounding building heights;
- Land Use: Potential effects on the character of the existing neighborhood, and the need for an in-depth analysis of the project's impact on land use character;
- Aesthetics: Opposition to the height of the proposed building, visual character, loss of views and consequent negative effect on property values, design and setbacks of the proposed building, potential effects of new views on property values and on privacy of neighboring homes and offices;
- Transportation and Circulation: Potential effects related to loss of parking, increased traffic congestion and auto/pedestrian/bicycle conflicts, and rerouted bus lanes;
- Air Quality: Location of the proposed project in a Department of Public Health "hot zone," and the impact of increased traffic on air quality;
- Shadow: Potential shadow impacts on public spaces;
- Recreation: Consideration of the eastern South of Market areas's open space needs, accuracy of recreation and open space data presented in Initial Study, and the need to consider surrounding uses in determining the area's recreation and open space needs;
- Public Services: Potential effects on Police Department, Fire Department, and emergency medical service response times;
- Variants: Potential effects of the Residential/Hotel Mixed Use Variant on working conditions, the broader hospitality market, and the quality of life for workers, neighbors, and other residents;
- Alternatives: Consideration of an alternative site for the proposed project.

Comments expressing support for the proposed project or opposition to it will be considered independent of the environmental review process by City decision-makers, as part of their decision to approve, modify, or disapprove the proposed project.

1. INTRODUCTION

A. PURPOSE OF THIS ENVIRONMENTAL IMPACT REPORT

This Environmental Impact Report (EIR) has been prepared by the San Francisco Planning Department (Planning Department) in the City and County of San Francisco, the Lead Agency for the proposed project, in conformance with the provisions of the California Environmental Quality Act (CEQA) and the CEQA Guidelines (California Public Resources Code Section 21000 et seq., and California Code of Regulations Title 14, Section 15000 et seq., "CEQA Guidelines"), and Chapter 31 of the San Francisco Administrative Code. The lead agency is the public agency that has the principal responsibility for carrying out or approving a project.

The proposed project considered in this EIR consists of the demolition of the existing 91-foot-tall, eight-level parking garage (75 Howard Garage), and the construction of a 31-story, 348-foot-tall, residential high-rise tower on the site, which is located on the south side of Howard Street at the intersection of Howard and Steuart streets. The proposed project also includes two variants as options that the project sponsor may choose to implement: a proposed Public Parking Variant and a proposed Residential/Hotel Mixed Use Variant.

Pursuant to CEQA Guidelines Section 15161, this is a project-level EIR, defined as an EIR that examines the physical environmental impacts of a specific development project. The project sponsor has provided sufficient information about the proposed project for a project-level analysis to be conducted. This EIR assesses potentially significant impacts in the areas of land use and land use planning, aesthetics, archaeological resources, transportation and circulation, noise, air quality, shadow, biological resources related to bird strikes, and sea level rise (discussed in hydrology and water quality). As defined in CEQA Guidelines Section 15382, a "significant effect on the environment" is:

> . . . a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

As stated in the CEQA Guidelines, an EIR is an informational document intended to inform public agency decision-makers and the public of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. CEQA requires that public agencies not approve projects until all feasible means available have been employed to substantially lessen the significant environmental effects of such projects.[1] Before any discretionary project approvals may be granted for the project, the San Francisco Planning Commission (Planning Commission) must certify the EIR as adequate, accurate, and objective. City decision-makers will use the certified EIR, along with other information and public processes, to determine whether to approve, modify, or disapprove the proposed project, and to require any feasible mitigation measures as conditions of project approval.

B. ENVIRONMENTAL REVIEW PROCESS

The environmental review process includes a number of steps: publication of a Notice of Preparation or a Notice of Preparation/Initial Study (NOP/IS), public scoping, publication of a Draft EIR for public review and comment, preparation and publication of responses to public and agency comments on the Draft EIR, and certification of the Final EIR. The environmental review process is initiated when a project sponsor files an Environmental Evaluation application.

NOTICE OF PREPARATION/INITIAL STUDY

An Environmental Evaluation application for the 75 Howard Street project was submitted to the Planning Department on January 13, 2012. This application was revised on April 25, 2012 to accommodate minor adjustments to the proposed project's program and design. The Planning Department prepared an Initial Study and published a Notice of Preparation of an EIR on December 12, 2012, announcing its intent to prepare and distribute a focused EIR (the NOP/IS is presented as Appendix A to this EIR). Publication of the NOP/IS initiated a 30-day public review and comment period that began on December 13, 2012, and ended on January 11, 2013. During the public review and comment period, 11 comment letters were submitted to the Planning Department by interested parties. The comment letters on the NOP/IS raised the following issues:

- Project Description: Size of proposed residential units, private open space requirements, project site ownership, and accuracy of identification of surrounding building heights;
- Land Use: Potential effects on the character of the existing neighborhood, and the need for an in-depth analysis of the project's impact on land use character;
- Aesthetics: Opposition to the height of the proposed building, visual character, loss of views and consequent negative effect on property values, design and setbacks of the proposed building, potential effects of new views on property values and on privacy of neighboring homes and offices;

[1] "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time taking into account economic, environmental, social, and technological factors (Public Resources Code Section 21061.1).

- Transportation and Circulation: Potential effects related to loss of parking, increased traffic congestion and auto/pedestrian/bicycle conflicts, and rerouted bus lanes;
- Air Quality: Location of the proposed project in a Department of Public Health "hot zone," and the impact of increased traffic on air quality;
- Shadow: Potential shadow impacts on public spaces;
- Recreation: Consideration of the eastern South of Market area's open space needs, accuracy of recreation and open space data presented in the Initial Study, and the need to consider surrounding uses in determining the area's recreation and open space needs;
- Public Services: Potential effects on Police Department, Fire Department, and emergency medical service response times;
- Variants: Potential effects of the Residential/Hotel Mixed Use Variant on working conditions, the broader hospitality market, and the quality of life for workers, neighbors, and other residents;
- Alternatives: Consideration of an alternative site for the proposed project.

Comments expressing support for the proposed project or opposition to it will be considered independent of the environmental review process by City decision-makers, as part of their decision to approve, modify, or disapprove the proposed project. Many comments raised issues on topics that were adequately discussed in the Initial Study, such as comments on the topics of Recreation and Open Space and Public Services. Some comments on the topic of Land Use, specifically those on the adequacy of the analysis of conflicts with existing plans and those on land use character, warrant additional discussion in the EIR; thus, conflicts with adopted plans, and land use character are discussed in EIR Chapter 4, Environmental Setting, Impacts, and Mitigation, in Section 4.A, Land Use and Land Use Planning. Other comments raise issues pertaining to the topics of Aesthetics, Transportation and Circulation, Air Quality, Shadow, and Alternatives; these comments are addressed in this EIR in Chapter 4, Sections 4.C, Aesthetics; 4.E, Transportation and Circulation; 4.G, Air Quality; and 4.H, Shadow; and in Chapter 6, Alternatives, respectively. No public agencies or organizations submitted comments to the Planning Department during the 30-day public comment period; however, a letter from the San Francisco Public Utilities Commission was submitted after the public comment period ended. This letter raised concerns about the project project's impacts on wastewater, existing utility infrastructure, and odors from existing sewer lines; these comments are addressed in this EIR in Chapter 4, Sections 4.G, Air Quality, and 4.I, Utilities and Service Systems.

Environmental Effects Found to Be Less than Significant in the Initial Study

The IS found that the following potential individual and cumulative environmental effects of the project, as fully analyzed in the IS, would be less than significant:

- Population and Housing
- Cultural and Paleontological Resources (Historic Architectural and Paleontological Resources only)
- Greenhouse Gas Emissions
- Wind and Shadow (Wind only)
- Recreation
- Public Services
- Geology and Soils
- Hazards and Hazardous Materials
- Mineral and Energy Resources
- Agricultural and Forest Resources

Environmental Effects Requiring Further Study in the EIR

The IS determined that the project analyzed in the IS may result in potentially significant environmental impacts related to the following environmental topics: Aesthetics; Cultural and Paleontological Resources (Archaeological Resources only); Transportation and Circulation; Noise, including project construction effects on existing utilities infrastructure; Air Quality; Wind and Shadow (Shadow only); Biological Resources (Bird Migration and Local Movement only); and Hydrology and Water Quality (Sea Level Rise only). These topics, along with Land Use and Land Use Planning (Conflicts with Adopted Plans and Land Use Character only), and Utilities and Service Systems (Wastewater and Stormwater Facilities and Odor Issues from Infrastructure only), as mentioned above on p. I.3, are evaluated in this EIR.

DRAFT EIR

This Draft EIR has been prepared in accordance with CEQA and the CEQA Guidelines. It provides an analysis of the project-specific physical environmental impacts of construction and operation of the proposed project, and the project's contribution to the environmental impacts from foreseeable cumulative development in the project site vicinity and City as a whole.

Copies of the Draft EIR are available at the Planning Information Counter, San Francisco Planning Department, 1660 Mission Street, 1st Floor, San Francisco, CA 94103. The Draft EIR is also available for viewing or downloading at the Planning Department website, http://tinyurl.com/sfceqadocs, by choosing the link for Negative Declarations and EIRs under "Current Documents for Public Review" and searching for Case File No. 2011.1122E. You may also request that a copy be sent to you by calling (415) 575-9095 or emailing the EIR Coordinator, Don Lewis, at don.lewis@sfgov.org. All documents referenced in this Draft EIR and the distribution list for the Draft EIR are available for review at the San Francisco Planning

Department, 1650 Mission Street, Suite 400, San Francisco, CA 94103, as part of Case File No. 2011.1122E.

How to Comment on the Draft EIR

This Draft EIR was published on July 31, 2013. There will be a public hearing before the Planning Commission during the 45-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 August 1, 2013 to September 16, 2013. The public hearing on this Draft EIR has been scheduled before the Planning Commission for September 12, 2013 in Room 400, City Hall, 1 Dr. Carlton B. Goodlett Place beginning at 12:00 p.m. or later. Please call (415) 558-6422 the week of the hearing for a recorded message giving a more specific time. In addition, members of the public are invited to submit written comments on the adequacy of the document, that is, whether this Draft EIR identifies and analyzes the possible environmental impacts and identifies appropriate mitigation measures. Comments are most helpful when they suggest specific alternatives and/or additional measures that would better mitigate significant environmental effects.

Written comments should be submitted to:

Sarah Jones, Environmental Review Officer
Re: 75 Howard Street Project Draft EIR
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103

Comments may also be submitted by email to sarah.b.jones@sfgov.org or to don.lewis@sfgov.org. Comments must be received by 5:00 p.m. on September 16, 2013.

FINAL EIR

Following the close of the Draft EIR public review and comment period, the Planning Department will prepare and publish a document entitled “Responses to Comments,” which will contain a copy of all comments on this Draft EIR and the City’s responses to those comments, along with copies of the letters received and a transcript of the Planning Commission public hearing on the Draft EIR. This Draft EIR, together with the Responses to Comments document, will be considered by the Planning Commission in an advertised public meeting, and then certified as a Final EIR, if deemed adequate.

The Planning Commission and the Board of Supervisors will use the information in the Final EIR in their deliberations on whether to approve, modify, or deny the proposed project or aspects of the proposed project. If the Planning Commission and the Board of Supervisors decide to approve the proposed project, their approval action must include findings that identify significant project-related impacts that would result; discuss mitigation measures or alternatives that have been adopted to reduce significant impacts to less-than-significant levels; determine whether mitigation measures or alternatives are within the jurisdiction of other public agencies; and explain reasons for rejecting mitigation measures or alternatives if any are infeasible for legal, social, economic, technological, or other reasons.

A Mitigation Monitoring and Reporting Program (MMRP) must be adopted by the Planning Commission and the Board of Supervisors as part of the adoption of the CEQA findings and project approvals by those bodies to the extent that mitigation measures are made part of the proposed project. The MMRP identifies the measures included in the proposed project, the entities responsible for carrying out the measures, and the timing of implementation. If significant unavoidable impacts would remain after all feasible mitigation measures are implemented, the approving body, if it elects to approve the proposed project, must adopt a statement of overriding considerations explaining how the benefits of the proposed project would outweigh the significant impacts.

C. ORGANIZATION OF THIS EIR

This EIR is organized into eight chapters and appendices, as described below.

The Summary chapter provides a concise overview of the proposed project and the necessary approvals; the environmental impacts that would result from the proposed project; mitigation measures identified to reduce or eliminate these impacts; project alternatives; and areas of known controversy and issues to be resolved.

Chapter 1, Introduction, describes the type, purpose, and function of the EIR; the environmental review process and comments received on the NOP/IS; and the organization of the EIR.

Chapter 2, Project Description, presents details about the proposed project and the approvals required to implement it.

Chapter 3, Plans and Policies, describes inconsistencies of the proposed project with applicable Federal, State, regional, and local plans and policies.

Chapter 4, Environmental Setting, Impacts, and Mitigation, addresses the following topics: Land Use and Land Use Planning (Conflicts with Adopted Plans and Land Use Character only); Aesthetics; Cultural and Paleontological Resources (Archaeological Resources only); Transportation and Circulation; Noise; Air Quality; Wind and Shadow (Shadow only); Utilities and Service Systems (Wastewater Treatment Facilities and Stormwater Drainage Facilities and Odor Issues from Infrastructure only); Biological Resources (Bird Migration and Local

Movement only); and Hydrology and Water Quality (Sea Level Rise only). Each topic section includes the environmental setting; regulatory framework; approach to analysis, when appropriate; project-specific and cumulative impacts; and mitigation measures and improvement measures, when appropriate.

Chapter 5, Other CEQA Issues, addresses potential growth-inducing impacts of the proposed project and identifies significant effects that cannot be avoided if the proposed project is implemented, as well as significant irreversible impacts of the project, and areas of known controversy and project-related issues that have not been resolved.

Chapter 6, Alternatives, presents and analyzes a range of alternatives to the proposed project. Three alternatives are described and evaluated: Alternative A: No Project Alternative, Alternative B: Code Compliant Alternative, and Alternative C: Reduced Height Alternative. This chapter identifies the environmentally superior alternative. It also discusses any alternatives considered but rejected, and gives the reasons for rejection.

Chapter 7, Report Preparers, identifies the EIR authors and the agencies, organizations, and individuals who were consulted during preparation of the Draft EIR. In addition, the project sponsor, their attorneys, and any consultants working on their behalf are listed.

Appendices contains Appendix A: Notice of Preparation/Initial Study.

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2. PROJECT DESCRIPTION

A. PROJECT OVERVIEW

PROPOSED PROJECT

The project site is located on the south side of Howard Street at the intersection of Howard and Steuart streets, in San Francisco's Financial District, and within the *Transit Center District Plan* (TCDP) area. (See Figure 2.1: Project Location.) The project site consists of three lots and a portion of street right-of-way: Assessor's Block 3741/Lot 31, which is owned by PPF Paramount, 75 Howard Garage, LLP (the project sponsor); Assessor's Block 3741/Lot 35 (known as Parcel 3), which is owned by the Gap, Inc.; and Assessor's Block 3742/Lot 12 and a portion of the Steuart Street right-of-way south of Howard Street, which is owned by the City and County of San Francisco under the jurisdiction of the Department of Public Works (DPW). Block 3741/Lot 31, together with Parcel 3, include approximately 20,931 square feet (sq. ft.) and comprise the proposed 75 Howard Street building site, which is currently developed with the existing 75 Howard Garage, a 540-space, 91-foot-tall, eight-level commercial parking garage structure built in 1976. (See Figure 2.2: Existing Site Plan.)

The proposed project consists of the demolition of the existing 75 Howard Garage and construction, in its place, of an approximately 31-story, 348-foot-tall, 432,253-gross-square-foot (gsf) residential high-rise tower containing 186 market rate units and approximately 5,658 gsf of retail use. The tower would have a 26,701-gsf parking garage located on two below-grade levels accessed from Howard Street. The garage would contain 172 accessory parking spaces for residential units, 2 parking spaces assigned for commercial uses, and 1 car-share space, for a total of 175 parking spaces. The proposed project also includes landscaping and paving improvements, resulting in a new 4,780-sq.-ft. landscaped, publicly accessible open space at Block 3742/Lot 12 and the portion of the Steuart Street right-of-way south of Howard Street. On-street parking along the segment of Steuart Street south of Howard Street would be eliminated. This segment of Steuart Street would be narrowed, and the turnaround bulb at the southern terminus of Steuart Street would be reconfigured and incorporated into the design of the open space area.

Proposed Project Variants

The proposed project also includes two variants as options that the project sponsor may choose to implement: a proposed Public Parking Variant, and a proposed Residential/Hotel Mixed Use Variant.

SOURCE: Turnstone Consulting

75 HOWARD STREET

FIGURE 2.1: PROJECT LOCATION

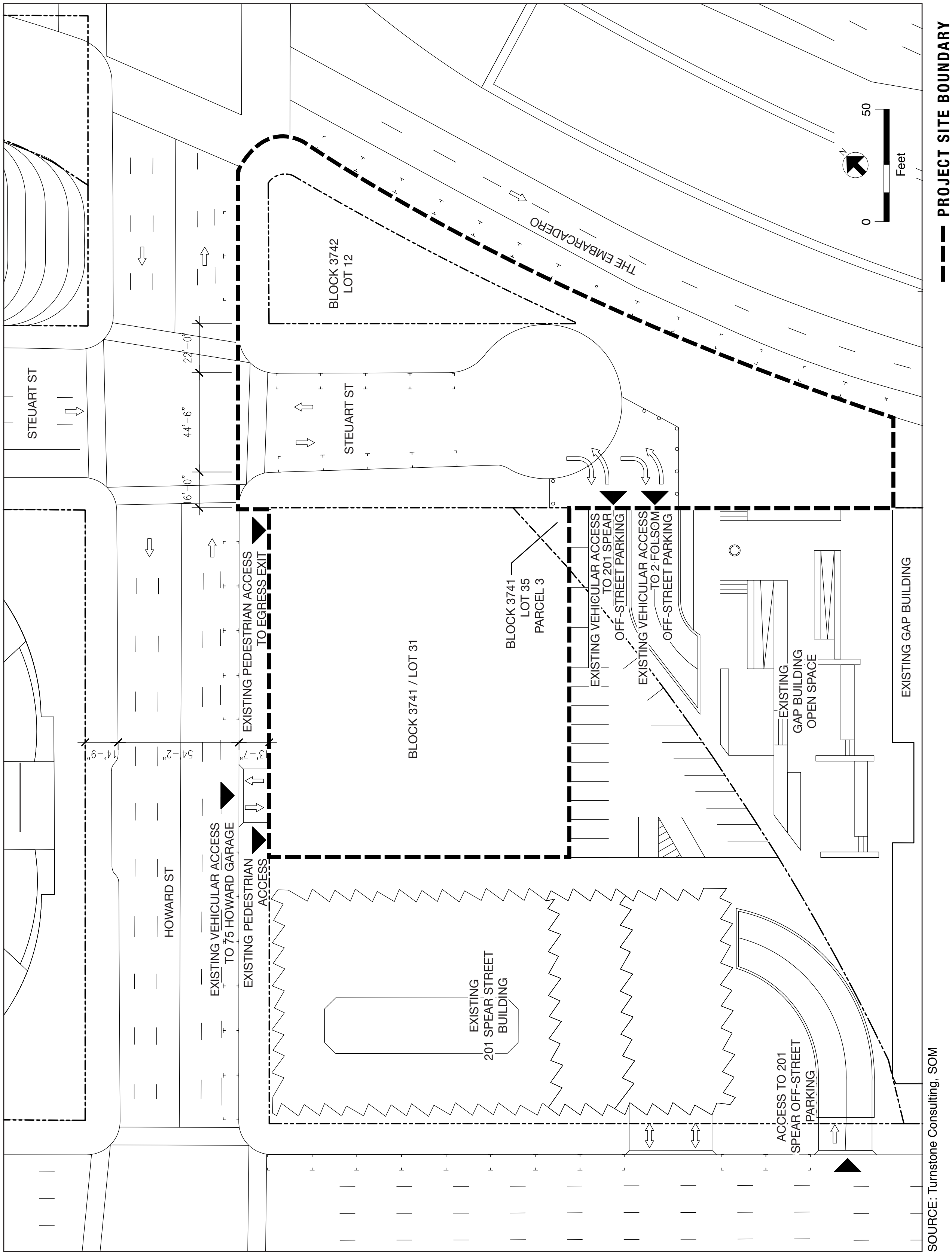

FIGURE 2.2: EXISTING SITE PLAN

Proposed Public Parking Variant

The proposed Public Parking Variant would provide an additional 91 non-accessory public off-street parking spaces, and two additional car-share parking spaces for a total of 268 parking spaces, to partially offset the 540 public spaces lost by demolition of the 75 Howard Garage. All 268 parking spaces would be located in stacked spaces on Basement Level 2 within the proposed 26,701-gsf parking garage.

Proposed Residential/Hotel Mixed Use Variant

The proposed Residential/Hotel Mixed Use Variant would provide a mix of residential units and hotel rooms within the high-rise tower. Hotel rooms would be located on floors 3 through 7 and floors 10 through 12, and residential units would be located on floors 13 through 31. This variant would also include space on floors 8 and 9 for hotel registration, a hotel restaurant, spa services, and other hotel amenity space. Under this variant, approximately 109 residential units and 82 hotel rooms with associated hotel amenity space would be constructed. As under the proposed project, the Residential/Hotel Mixed Use Variant would include a lobby, restaurant, and amenity space on the first and second floors of the high-rise tower. Parking under this variant would include a total of 268 stacked parking spaces on Basement Level 2 (the same total number of parking spaces as under the Public Parking Variant) within the 26,701-gsf parking garage area.

B. PROJECT SPONSOR'S OBJECTIVES

The project owner and sponsor of the 75 Howard Street project is the PPF Paramount Group 75 Howard Garage, LLP. The project sponsor seeks to achieve the following objectives by undertaking the proposed project:

- To improve the architectural and urban design character of the City's waterfront by replacing the existing above-grade parking garage with a high-quality residential project with ground floor retail uses and sufficient parking.
- To increase the City's supply of housing.
- To construct streetscape improvements and open space that serve neighborhood residents, and workers, and enliven pedestrian activity on the waterfront during evening and nighttime hours.
- To construct a high-quality project that includes a sufficient number of residential units to make economically feasible the demolition and replacement of the existing above-grade parking garage, produce a reasonable return on investment for the project sponsor and its investors, attract investment capital and construction financing, and generate sufficient revenue to finance the open space amenities proposed as part of the project.

C. PROJECT LOCATION

PROJECT SITE VICINITY

The project site is located on the south side of Howard Street at the intersection of Howard and Steuart streets[1] in southeastern edge of San Francisco's Financial District, near its eastern waterfront, and is within the TCDP area.[2] The project site includes the building site on the west side of Steuart Street and the open space improvement site immediately to the east of the building site. (See Figure 2.3: Proposed Site Plan.)

Immediately across Howard Street to the north of the project site is the Carmel Rincon Apartments (Rincon Towers), a 24-story, approximately 280-foot-tall (with an 18-foot-tall parapet), 320-unit residential tower, built in 1989. Its lobby entrance is located mid-block along Howard Street. The Rincon Station Post Office and a grocery are located on its ground floor along Howard Street. Immediately across Howard Street to the northeast of the project site is Bayside Plaza at 188 The Embarcadero, a seven-story, approximately 104-foot-tall office building, built in 1986.

To the east of the project site is The Embarcadero, a broad waterfront boulevard. Between the northbound and southbound lanes of The Embarcadero runs the Muni Metro rail line. The ramp and portal to the Embarcadero Muni Metro Station tunnel are located to the east of the project block between Folsom and Howard streets. Across The Embarcadero is Rincon Park, an approximately 2.7-acre waterfront open space with panoramic views of San Francisco Bay, the Bay Bridge, Yerba Buena Island and Treasure Island, and the East Bay hills beyond. At the south end of Rincon Park, south of Folsom Street, are two 2-story, approximately 24-foot-tall restaurant buildings. The Embarcadero Promenade runs along the water's edge.

Immediately south and adjacent to the project site is a small (about 25-space) surface parking lot for the 201 Spear Street Building (which fronts on Spear Street and Howard Street). This parking lot is accessed from the terminus of Steuart Street. Adjacent to the vehicular access to the surface parking lot is the vehicular access to the subsurface parking garage of 250 The Embarcadero (the

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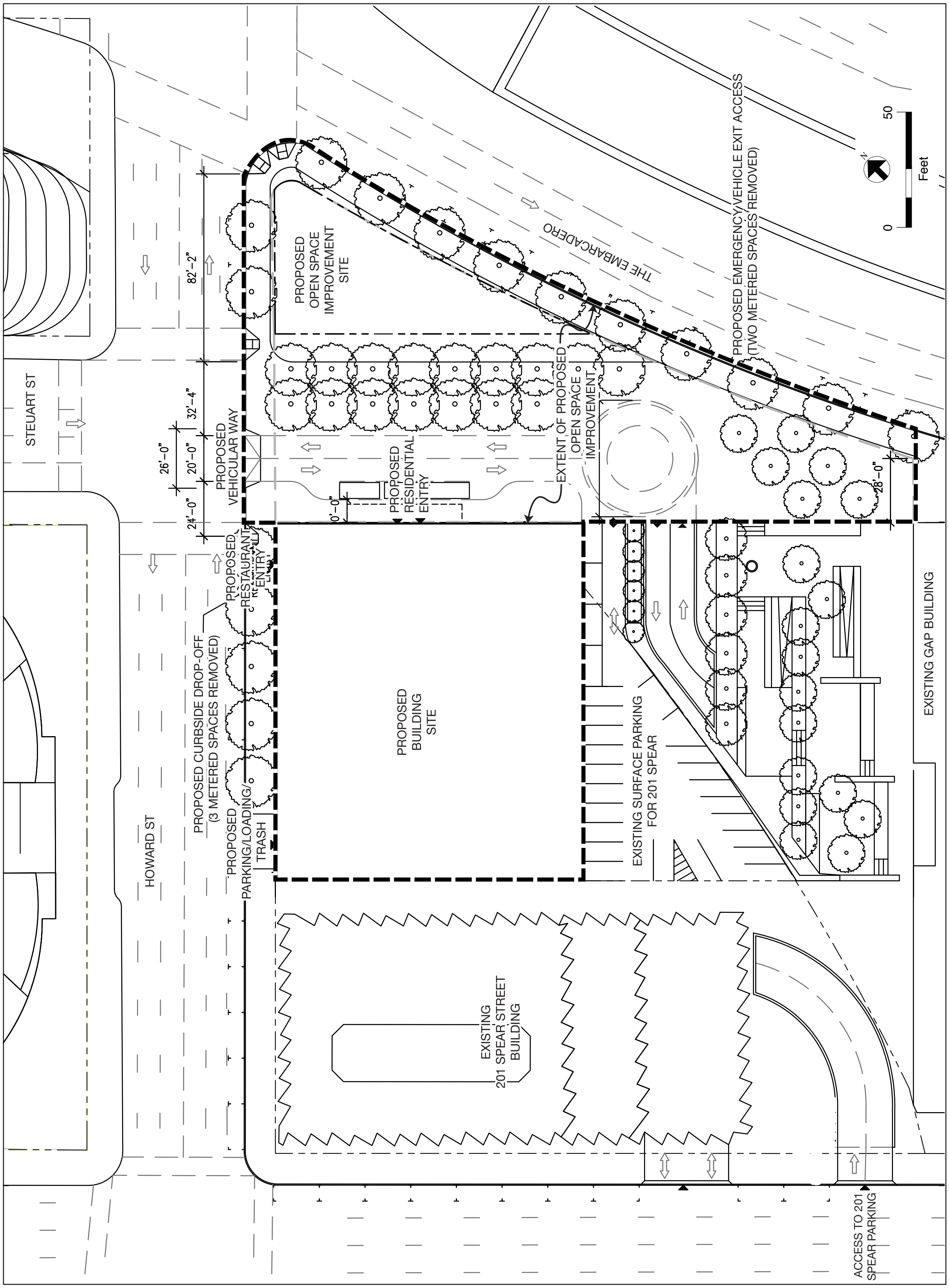
1 Howard Street is oriented in a northeast-southwest direction. However, for the purposes of this EIR, Howard Street will be referred to as running east-west. Similarly, Steuart Street is oriented in a northwest-southeast direction. This street will be referred to as running north-south. This convention for describing South of Market will also be used throughout this EIR to describe the locations of other buildings and uses relative to the project site.

2 The *Transit Center District Plan* is a comprehensive plan for the southern portion of San Francisco's Financial District. The *Transit Center District Plan* area covers an area of approximately 145 acres that is generally bounded by Market Street on the north, Steuart Street on the east, Folsom Street to the south, and a line extending mid-block between Third and New Montgomery streets on the west.



SOURCE: Turnstone Consulting, SOM

PROJECT SITE BOUNDARY

75 HOWARD STREET

FIGURE 2.3: PROPOSED SITE PLAN

Gap Building) and a publicly accessible open space on the site of the Gap Building. The Gap Building, located at the south end of the project's building site block, is a 14-story (approximately 290 feet tall) office building, built in 2001.

Immediately to the west of the project site is the 201 Spear Street Building, an 18-story office building, approximately 256 feet tall, built in 1985. The entrance lobby is located at the ground floor along Spear Street. A dry cleaner and cafés are also located within ground floor storefronts. The 201 Spear Street Building and the 75 Howard Garage on the project site are separated by a pedestrian passage from Howard Street to the 201 Spear Street Building's surface parking lot. Vehicular access to the 201 Spear Street Building's subsurface parking garage is located along Spear Street, south of the 201 Spear Street Building.

Other high-rise buildings within two blocks of the project site include the 373-foot-tall Infinity I at 301 Main Street (two blocks to the southwest), the 421-foot-tall Infinity II at 300 Spear Street (two blocks to the southwest), the approximately 400-foot-tall Steuart Tower at One Market Plaza (one and one-half blocks to the north), and the approximately 583-foot-tall Spear Tower at One Market Plaza (one and one-half blocks to the north).

PROJECT SITE

The project site consists of three lots and a portion of street right-of-way: the entirety of Assessor's Block 3741/Lot 31, a portion of Assessor's Block 3741/Lot 35, and the entirety of Assessor's Block 3742/Lot 12. The project site also includes a portion of the Steuart Street right-of-way south of Howard Street and the sidewalks adjacent to the 75 Howard Street building site and surrounding Block 3742/Lot 12.

The 75 Howard Street Building Site

The proposed residential and retail building would be located on Block 3741/Lot 31 and a portion of Parcel 3. This approximately 20,931-sq.-ft. site occupies the northeastern corner of the block bounded by Howard Street to the north, Steuart Street to the east, Folsom Street to the south, and Spear Street to the west. Block 3741/Lot 31 is generally rectangular in configuration, except that its southeast corner is chamfered (cut at about a 45 degree angle) at the lot's boundary with adjacent Block 3741/Lot 35 – a result of the former alignment of the now-demolished Embarcadero Freeway. In order to regularize the boundaries of the building site, the project sponsor would acquire an easement to an approximately 336-sq.-ft. triangular portion at the northern tip of adjacent Lot 35. This portion of Lot 35 is known as Parcel 3. Block 3741/Lot 31, together with Parcel 3, is an approximately 20,931-sq.-ft. rectangle measuring about 156 feet from east to west along Howard Street and about 134 feet from north to south along Steuart Street.

Existing 75 Howard Street Building Site Conditions

The 75 Howard Street building site (building site) is currently developed with the existing 75 Howard Garage, a 540-space commercial parking garage structure, built in 1976. The 75 Howard Garage structure occupies about 20,060 sq. ft. of its 20,595-sq.-ft. lot (about 97 percent) and is 7 stories (with 8 parking levels), and about 91 feet tall. It has eight parking levels and the top parking level is located on the roof. The existing vehicular and pedestrian ingress and egress to the 75 Howard Garage is on Howard Street. A narrow planting strip separates the parking structure's base from the Howard Street and Steuart Street sidewalks. There are five street trees (*Ficus*) along the Howard Street frontage of the building site and five street trees (*Ficus*) along its Steuart Street frontage.

The Parcel 3 portion of the building site contains a small triangular planting bed at the chamfered southeast corner of the 75 Howard Garage.

Existing 75 Howard Street Building Site Zoning and Applicable Area Plans

The portion of the site comprised of Block 3741/Lot 31 is in the Downtown Office Special Development (C-3-O(SD)) District. Planning Code Sections 215 through 227 establish the types of land uses that are allowed in the C-3-O(SD) District. Office and residential uses, as well as supporting retail and services, are principally permitted in the C-3-O(SD) District. The intensity of building development in the C-3-O District is the densest in the City, resulting in a notable skyline. Intensity and compactness in this district permits convenient travel by foot. The district is well served by City and regional transit.

Under Planning Code Section 215(b), residential use in the C-3-O District, at a density greater than 1 dwelling unit per 125 feet of lot area, requires conditional use authorization. Under Planning Code Section 123, the C-3-O(SD) District has a permitted base floor area ratio (FAR)[3] of 6 to 1, and no maximum FAR applies.

Block 3741/Lot 31 is in the 200-S Height and Bulk District, which means that building heights are limited to 200 feet. Bulk controls reduce the size of a building's floorplates as the building increases in height. Pursuant to Planning Code Section 270(d), the bulk controls in the "S" Bulk District are as follows:

- **Base.** The base is the lowest portion of the building extending vertically to a street wall height up to 1.25 times the width of the widest abutting street or 50 feet, whichever is more. There are no length or diagonal dimension limitations applicable to the base. The building base shall be delineated from the lower and upper tower and related to abutting buildings by a setback, cornice line or equivalent projection or other appropriate means.

[3] Floor area ratio is the ratio of gross floor area to lot area.

In the C-3-O(SD) District, additional requirements for building base and streetwall articulation and setbacks are described in Section 132.1.

- **Lower Tower**
  - **Dimensions.** Bulk controls for the lower tower apply to that portion of the building height above the base as shown on Chart B in Section 270. The bulk controls for the lower tower are a maximum length of 160 feet, a maximum floor size of 20,000 square feet, and a maximum diagonal dimension of 190 feet.
  - **Additional Bulk for Elevators.** Solely in order to accommodate additional elevators required by tall buildings, the lower portion (up to the height shown on Chart B) of the lower tower of a building 500 feet tall or taller may be enlarged up to a maximum length of 190 feet, a maximum diagonal dimension of 230 feet and a maximum floor size of up to 25,000 square feet without a corresponding reduction in upper floor size.
- **Upper Tower**
  - **Dimensions.** Upper tower bulk controls apply to buildings taller than 160 feet. They apply to the upper tower portion of a building up to the height shown on Chart B, which height excludes the vertical attachment and other features exempted by Section 260 and excludes the extended upper tower height exceptions provided for in Section 263.7 of this Code. The bulk controls for the upper tower are: a maximum length of 130 feet; a maximum average floor size of 12,000 square feet; a maximum floor size for any floor of 17,000 square feet; and a maximum average diagonal measure of 160 feet. In determining the average floor size of the upper tower, areas with a cross-sectional area of less than 4,000 square feet may not be counted and sculptured architectural forms that contain large volumes of space but no usable floors shall be included in average floor size calculation by computing the cross section at 12.5-foot intervals.
  - **Volume Reduction.** When the average floor size of the lower tower exceeds 5,000 square feet, the volume of the upper tower shall be reduced to a percentage of the volume that would occur if the average floor size of the lower tower were extended to the proposed building height. The percentage varies with the bulk of the lower tower and with whether or not a height extension is employed pursuant to Section 263.7 and is shown on Chart C. In achieving the required volume reduction, a setback or change in profile at a specific elevation is not required.
  - **Extensions.** Extension of the upper tower above the otherwise allowable height limits may be permitted as provided in Section 263.9.
  - **Termination of the Tower.** The top of the tower shall be amassed in a manner that will create a visually distinctive roof or other termination of the building façade. Modifications to a proposed project may be required, in the manner provided in Section 309, to achieve this purpose.

Block 3741/Lot 31 is within the *Downtown Area Plan* and the TCDP. The building site borders on, but is not within, the areas covered by the *Northeastern Waterfront Area Plan* and the Port of San Francisco *Waterfront Land Use Plan*.

Parcel 3 is in the P (Public) District and 200-S Height and Bulk District. The P District applies to land that is owned by a governmental agency and in some form of public use, including open space. It is within the areas covered by the *Northeastern Waterfront Area Plan* and the TCDP. Parcel 3 borders on, but is not within, the *Downtown Area Plan* and the Port of San Francisco *Waterfront Land Use Plan*.

The Open Space Improvement Site

The open space improvement site is a trapezoidal area immediately to the east of the building site, totaling about 29,883 sq. ft. The open space improvement site is bounded by Howard Street to the north and The Embarcadero to the east. The south boundary of the open space improvement site is defined by a line extending eastward from the northeast corner of the Gap Building, south of the building site. The west boundary is defined by the eastern lot line of the building site and that of the adjacent Lot 35 immediately to the south of the building site.

The open space improvement site includes Block 3742/Lot 12 (approximately 4,780 sq. ft.), a triangular lot at the southwest corner of Howard Street and The Embarcadero, and a portion of the Steuart Street right-of-way south of Howard Street. Block 3742/Lot 12 is owned by the City and County of San Francisco under the jurisdiction of the DPW and is currently vacant and paved with asphalt. This vacant lot is bounded on all sides by sidewalks and two street trees (Sycamore) along Howard Street and nine street trees (Sycamore) along The Embarcadero.

As shown on Figure 2.2, p. 2.3, the existing Steuart Street roadway within the proposed open space improvement site is approximately 45 feet wide. Its west sidewalk, in front of the 75 Howard Garage, is about 16 feet wide. Its east sidewalk, bordering on Block 3742/Lot 12, is about 22 feet wide. A turnaround bulb is located at the southern terminus of the Steuart Street roadway. A driveway to the surface parking lot for the 201 Spear Street building, which is located adjacent to and south of the building site, and a driveway to the subsurface parking garage of the Gap Building are accessed from the turnaround bulb. The south edge of the turnaround bulb and the south edge of the Gap Building driveway are lined with bollards to contain vehicles. However, the Steuart Street right-of-way continues southward for pedestrians to The Embarcadero. The southern portion of the open space improvement site is a paved open area that functions as an extension of The Embarcadero sidewalk in front of the Gap Building's publicly accessible open space. This area is planted with six street trees (*Ginkgo*).

Existing Open Space Improvement Site Zoning and Applicable Plans

The open space improvement site (Block 3742/Lot 12) is located in the P District, the 65-X Height and Bulk District (a maximum building height of 65 feet with no required reduction in the size of the building's floorplates as the building increases in height). Block 3742/Lot 12 is within the *Northeastern Waterfront Area Plan* and the Port of San Francisco *Waterfront Land Use Plan* (it is Seawall Lot 347-S). It borders on, but is not within, the *Downtown Area Plan* and the TCDP.

D. PROJECT CHARACTERISTICS

The proposed project consists of the demolition of the existing 75 Howard Garage on the building site and construction, in its place, of an approximately 31-story, 348-foot-tall (plus an additional eight feet for rooftop screening and mechanical enclosures), 432,253-gsf residential high-rise tower containing 186 market rate units and 5,658 gsf of retail use. The proposed project also includes landscaping and paving improvements within the 29,883-sq.-ft. open space improvement site, which would include a new 4,780-sq.-ft. landscaped privately owned publicly accessible open space.

PROPOSED USES AND ACCESS

Residential

The proposed 186 residential units would consist of approximately 16 studio units, 39 one-bedroom units, 97 two-bedroom units, 29 three-bedroom units, and 5 four-plus bedroom units. Total building space allocated to residential use (including residential units, lobby, amenities, circulation, service, mechanical, etc.) would be about 399,894 gsf.

Residential pedestrian access to the ground floor of the proposed building would be through lobby entrance doors located at the midpoint of the proposed building frontage along Steuart Street. (See Figure 2.4: Proposed Ground Floor Plan.) The proposed project includes modification of the west sidewalk along Steuart Street to create a vehicular drop-off area in front of the residential entrance. From the lobby, residents could access elevators to the upper floors, a ground floor café, a ground floor residents' lounge, and a 2,443-sq.-ft. outdoor common open space through the lounge. This common open space would slope upwards from east to west to the second floor. On the second floor, building residents would also have access to a 4,515-gsf fitness center (including a 1,910-sq.-ft. indoor pool and a 645-sq.-ft. balcony), and a 1,050-gsf meeting room. (See Figure 2.5: Proposed 2nd Floor Plan.) The 3rd through 31st floors would contain residential units, a roof garden, and building-related mechanical systems and solar collectors (on the rooftop). An additional 1,628-sq.-ft. outdoor terrace would be provided as common residential open space on the 30th floor of the proposed high-rise tower. (See Figure 2.6: Proposed 3rd through 7th Floor Plan (Typical Podium-Level Plan); Figure 2.7: Proposed 8th Floor Plan; Figure 2.8: Proposed 9th through 29th Floor Plan (Typical Tower-Level Plan); Figure 2.9: Proposed 30th Floor Plan; Figure 2.10: Proposed 31st Floor Plan; and Figure 2.11: Proposed Roof Plan.)

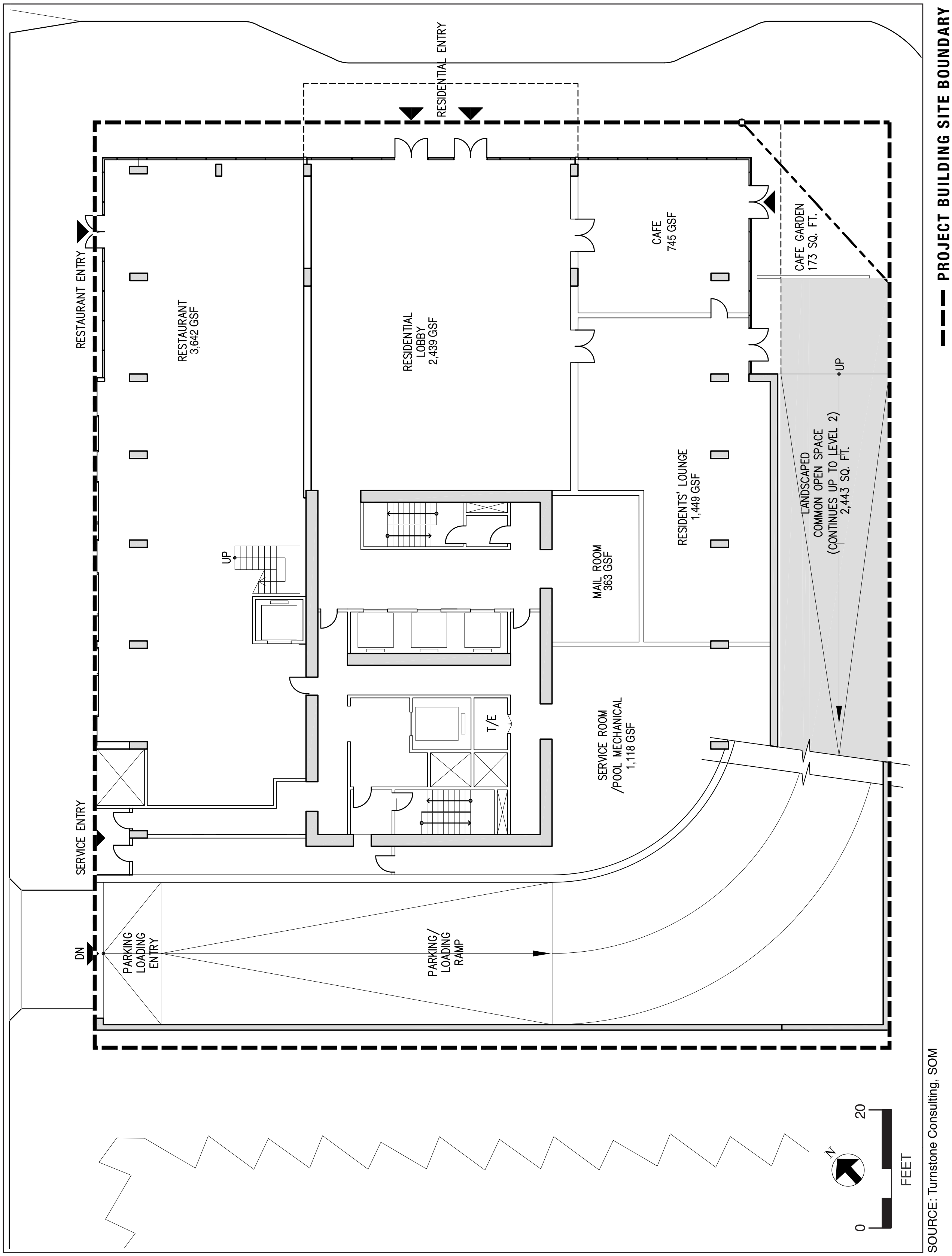


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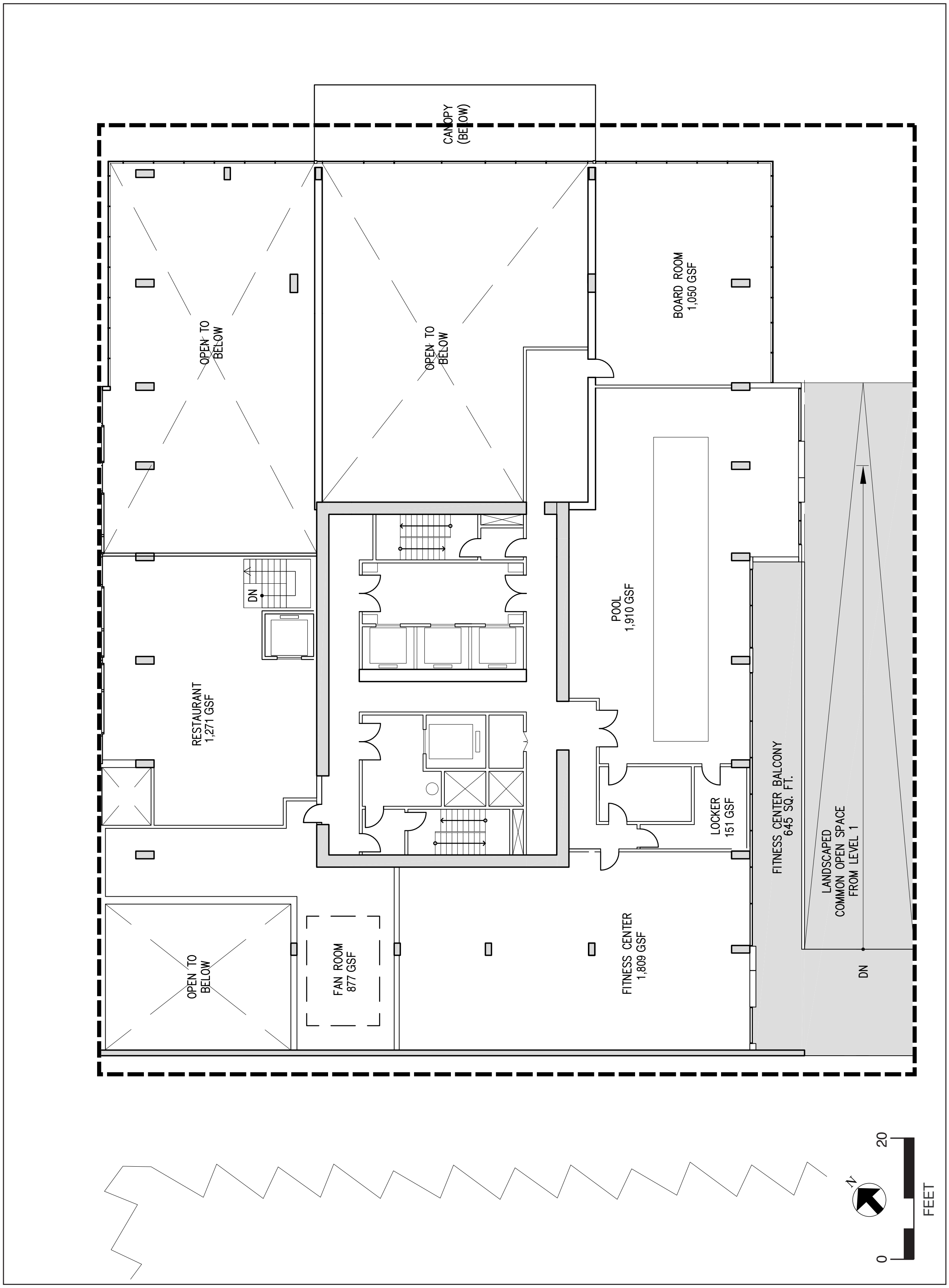
FIGURE 2.4: PROPOSED GROUND FLOOR PLAN



SOURCE: Turnstone Consulting, SOM

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PROJECT BUILDING SITE BOUNDARY

FIGURE 2.5: PROPOSED 2ND FLOOR PLAN

FIGURE 2.6: PROPOSED 3RD THROUGH 7TH FLOOR PLAN (TYPICAL PODIUM-LEVEL PLAN)

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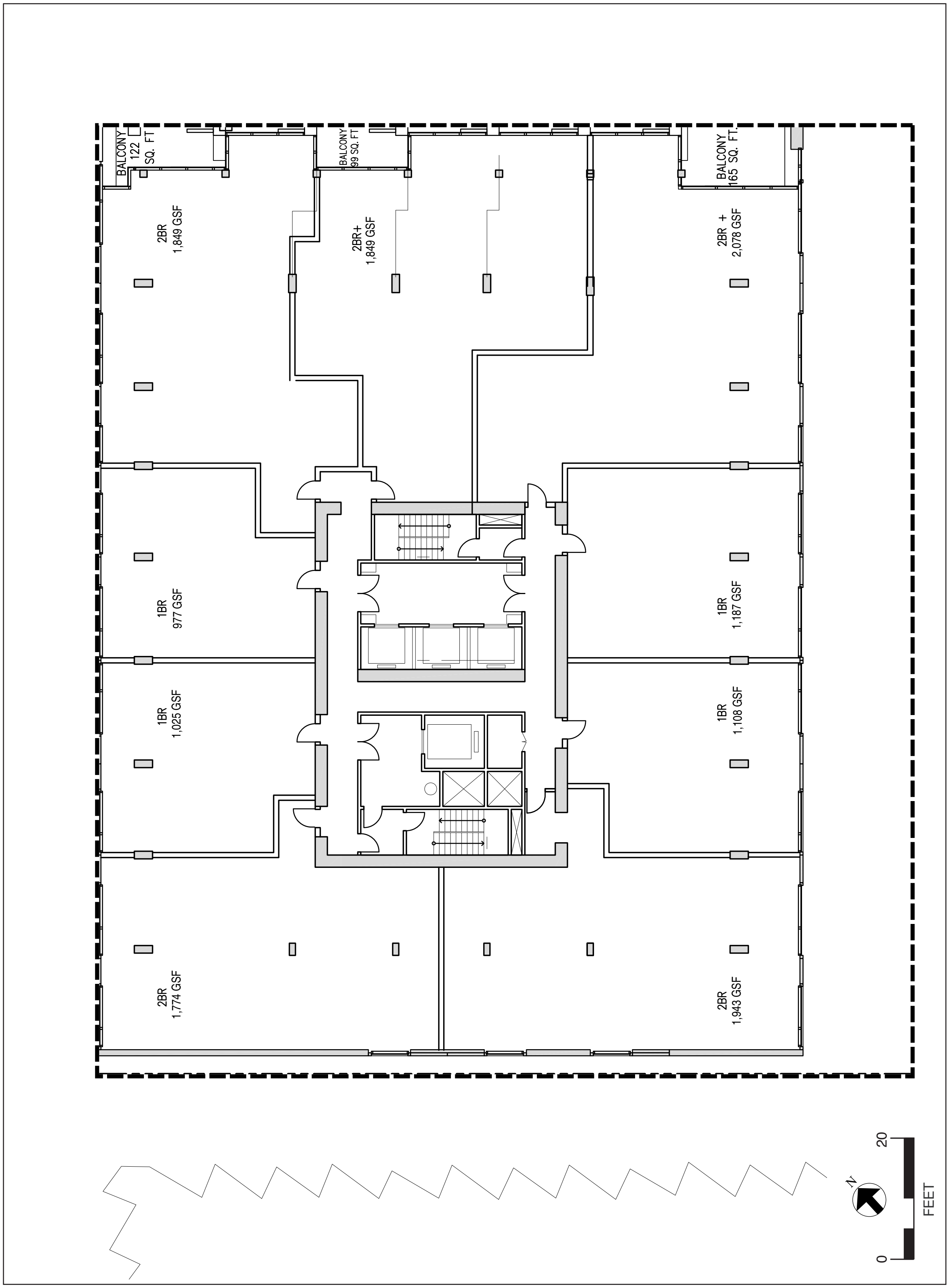

PROJECT BUILDING SITE BOUNDARY

SOURCE: Turnstone Consulting, SOM

FIGURE 2.7: PROPOSED 8TH FLOOR PLAN

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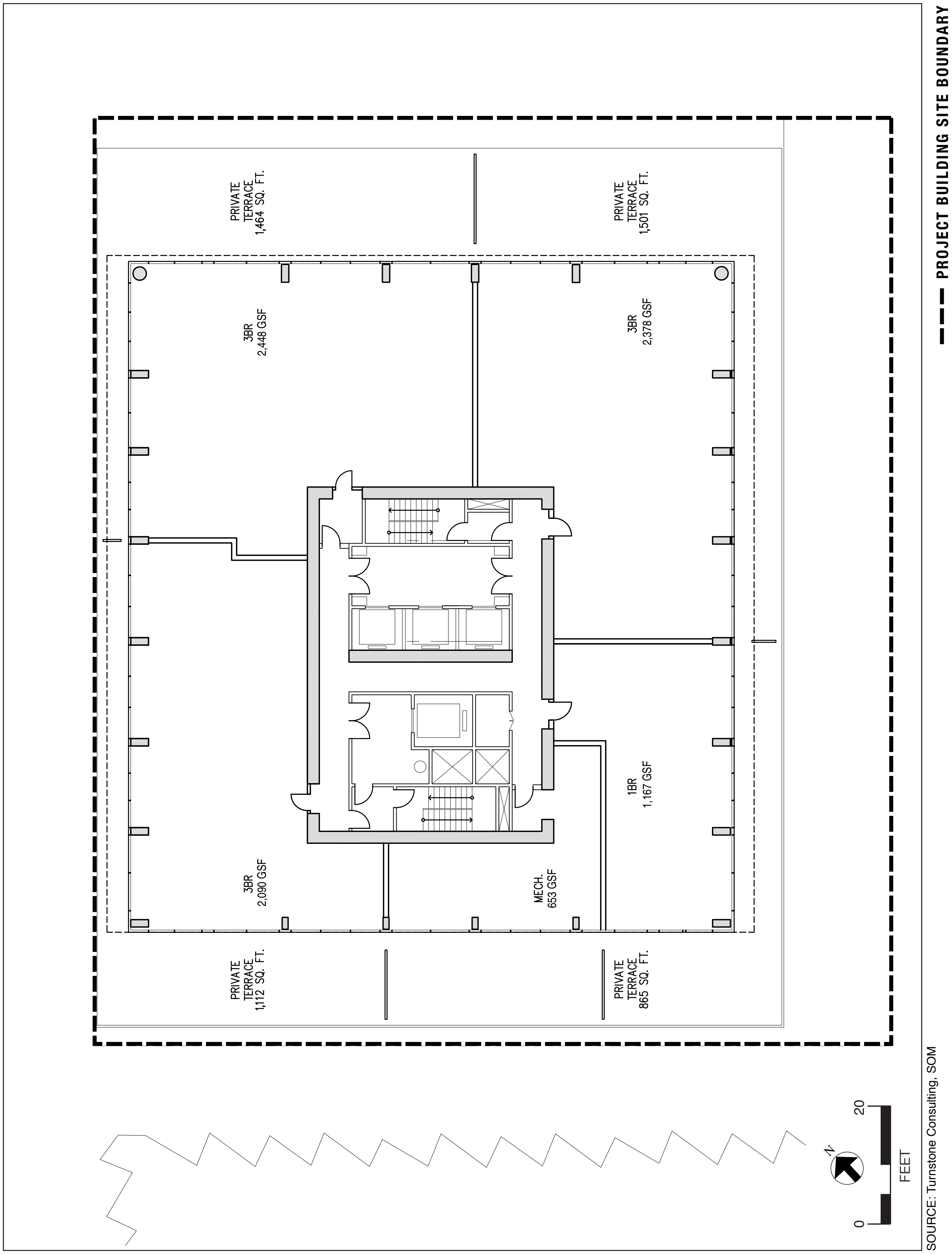
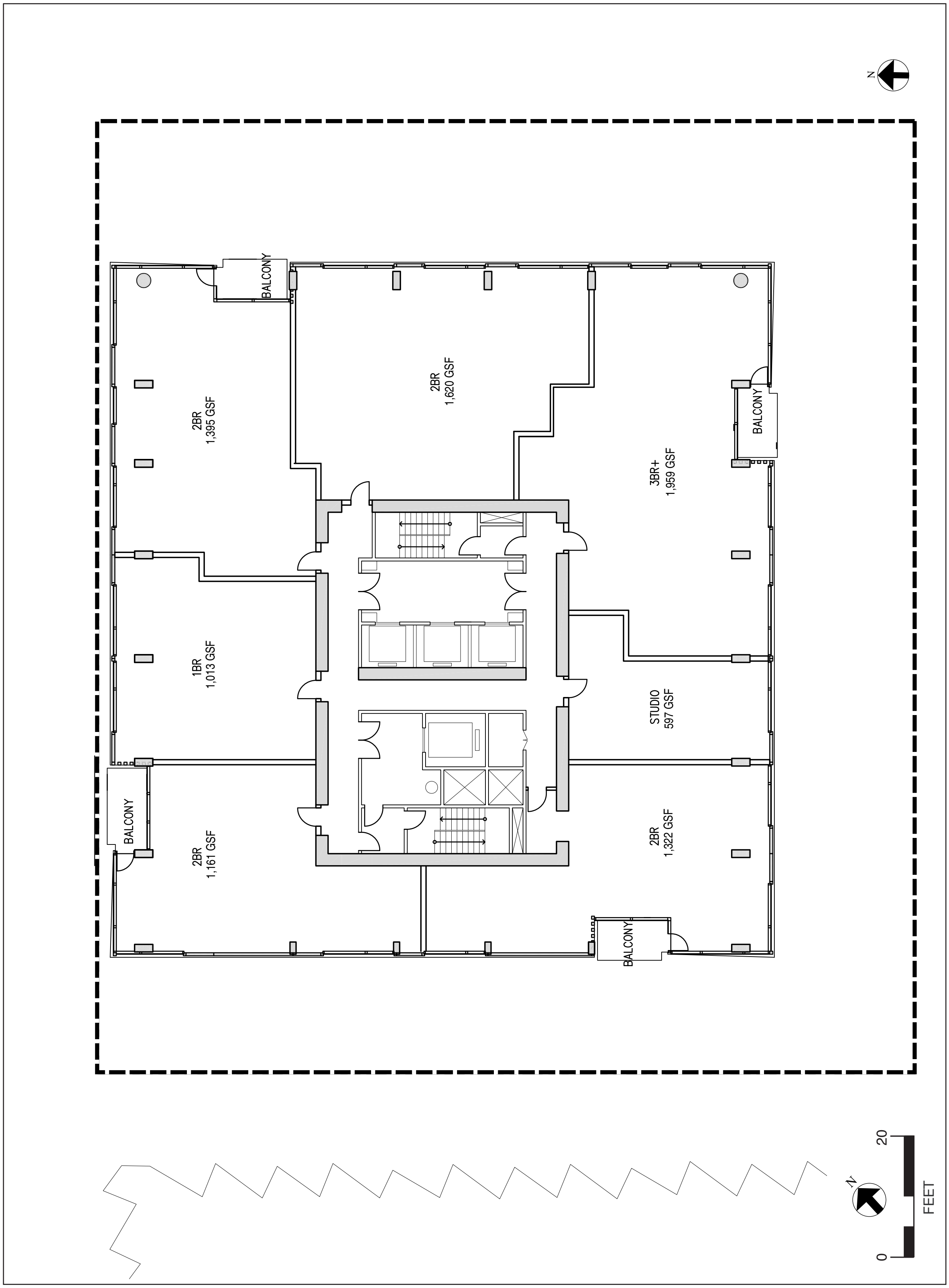


SOURCE: Turnstone Consulting, SOM



SOURCE: Turnstone Consulting, SOM

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FIGURE 2.8: PROPOSED 9TH THROUGH 29TH FLOOR PLAN (TYPICAL TOWER-LEVEL PLAN)

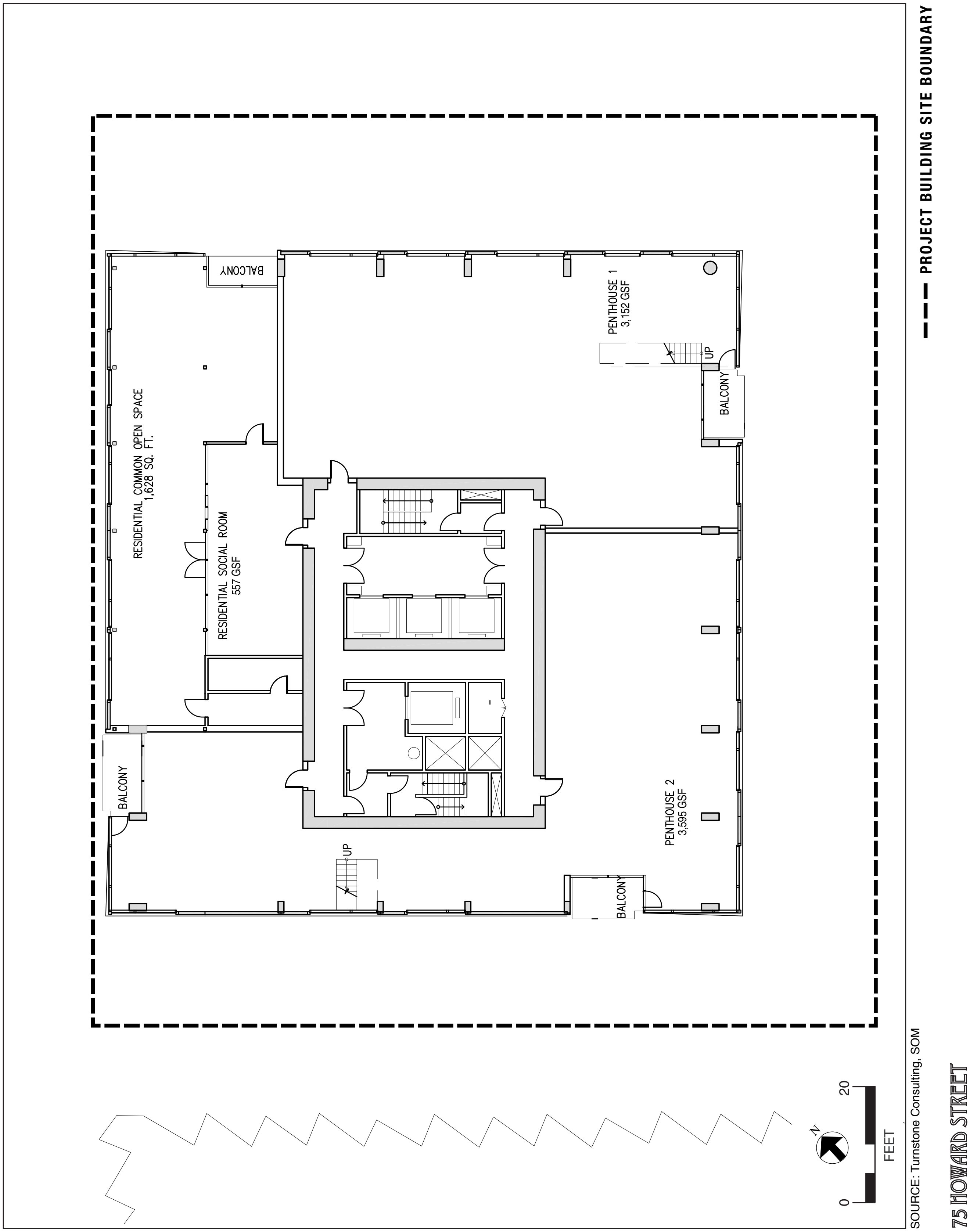
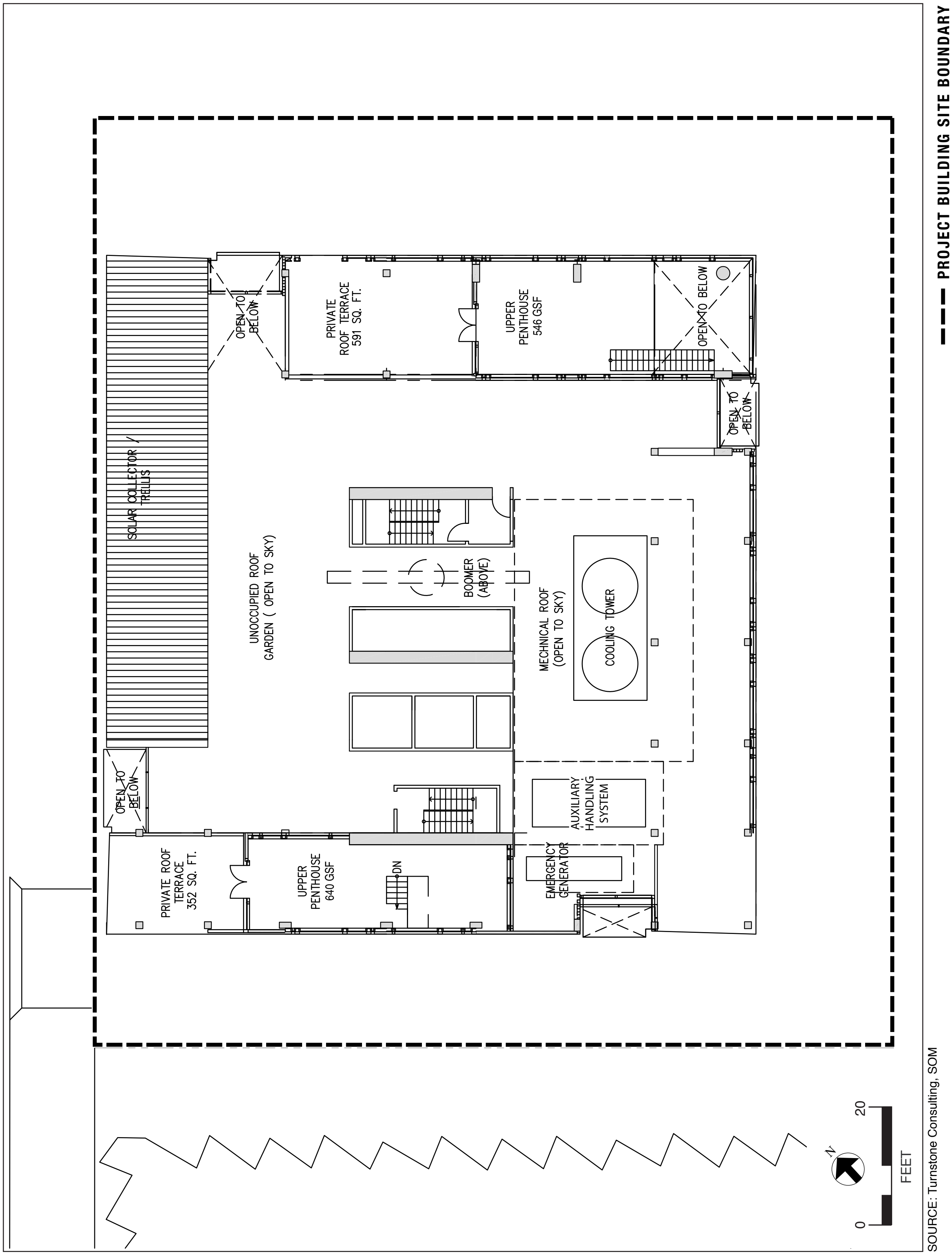


FIGURE 2.9: PROPOSED 30TH FLOOR PLAN



SOURCE: Turnstone Consulting, SOM

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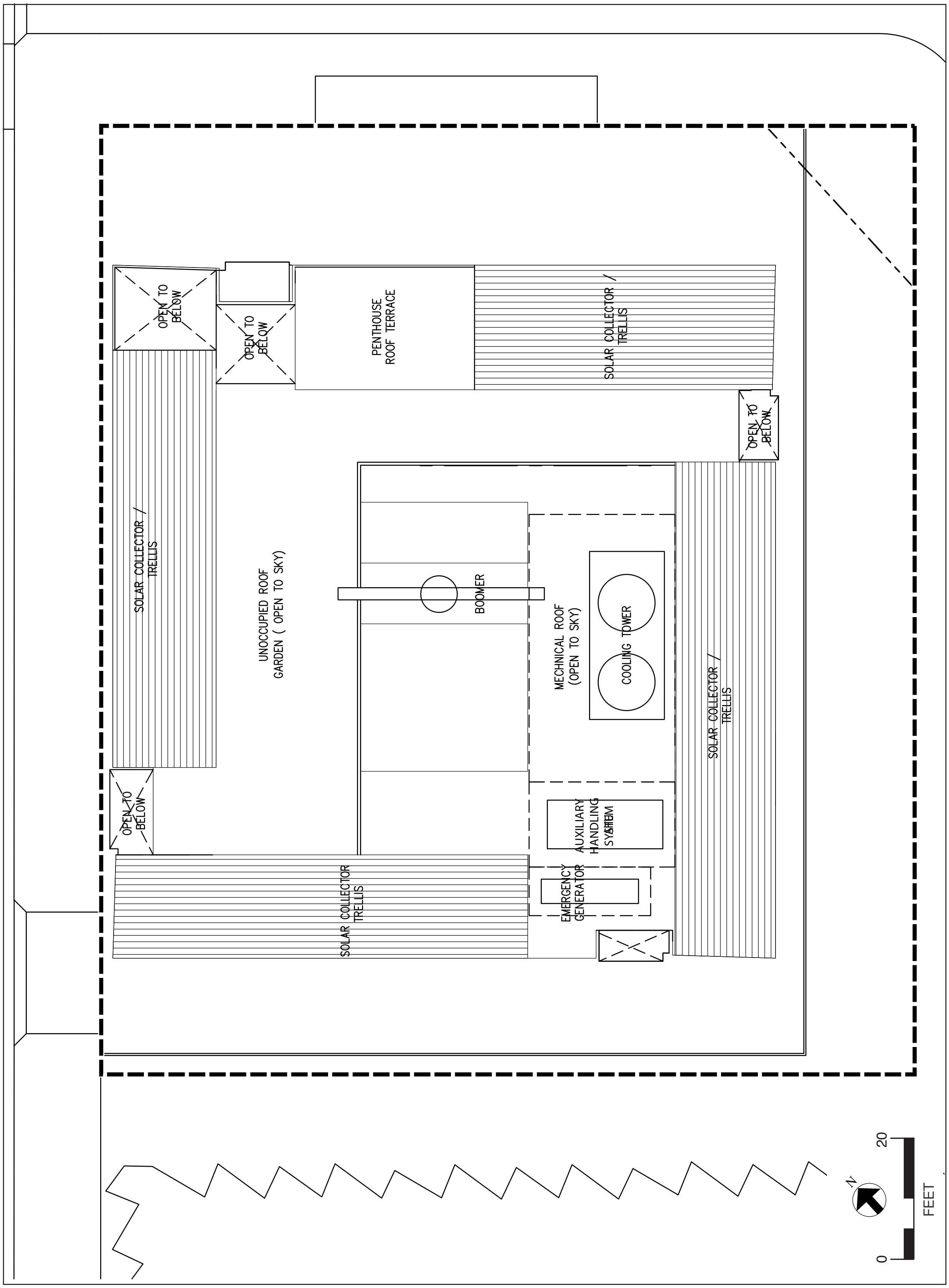
FIGURE 2.10: PROPOSED 31ST FLOOR PLAN



PROJECT BUILDING SITE BOUNDARY

SOURCE: Turnstone Consulting, SOM

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FIGURE 2.11: PROPOSED ROOF PLAN

Restaurant

About 5,658 gsf would be allocated to restaurant and café uses at the ground floor and second floor. A proposed 4,913-gsf restaurant would front Howard Street. The proposed restaurant would be entered through doors along Howard Street. Its second floor would be accessed by stairs or an elevator within the restaurant. A 745-gsf café would be located at the south side of the ground floor along Steuart Street. The proposed café would be entered from a proposed, approximately 173-sq.-ft. café garden open space along Steuart Street on the south side of the proposed building.

Parking, Loading, and Bicycle Storage

The proposed project would contain 172 accessory parking spaces for residential units, 2 parking spaces assigned for commercial uses, and 1 car-share space, for a total of 175 parking spaces located in a 26,701-gsf parking garage located on two below-grade levels. None of the parking would be independently accessible. Access into the parking garage would be through a vehicular entrance at the west end of the proposed building along Howard Street, near the same northwest corner location as the entrance to the existing 75 Howard Garage. Resident vehicles would travel down the garage ramp to the 20,500-gsf Basement Level 1, where cars would be mechanically parked by valet in stacked spaces provided on the 20,500-gsf Basement Level 2 below. (See Figure 2.12: Proposed Basement Level 1 Plan and Figure 2.13: Proposed Basement Level 2 Plan.) To retrieve their vehicles, building residents would wait on Basement Level 1 for their vehicles and exit the parking garage via the ramp. The project sponsor is currently contemplating utilizing a robotic valet system.

The proposed project would include two loading spaces. Delivery and service vehicles would travel down the garage ramp to Basement Level 1, where a loading turntable would assist delivery and service vehicles with entering the loading space and with exiting the garage via the ramp. Deliveries would reach the upper floors via a service elevator accessible from the loading dock. The proposed project would also include 64 bicycle storage spaces located on Basement Level 1. Bicyclists would access these spaces by elevator from either the residential or service entrance located at the ground floor of the high-rise tower.

PROPOSED PROJECT VARIANTS

Proposed Public Parking Variant

The proposed Public Parking Variant would be identical to the proposed project, except this variant would provide a total of 268 parking spaces (93 more than under the proposed project). Under this variant, a total of 91 non-accessory public parking spaces would be provided to partially offset the 540 public spaces lost by the proposed demolition of the 75 Howard Garage.

FIGURE 2.12: PROPOSED BASEMENT LEVEL 1 PLAN

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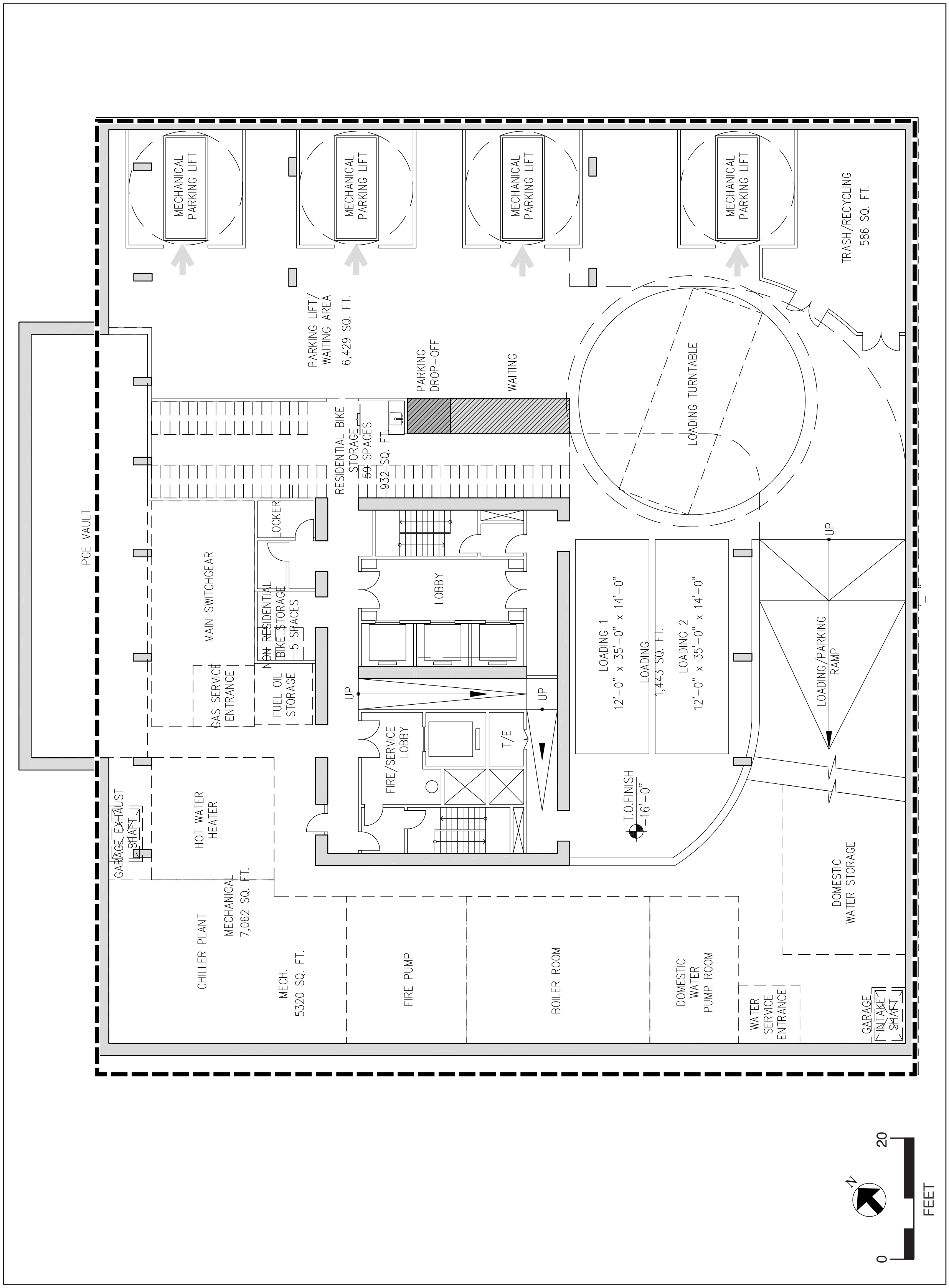

PROJECT BUILDING SITE BOUNDARY

SOURCE: Turnstone Consulting, SOM

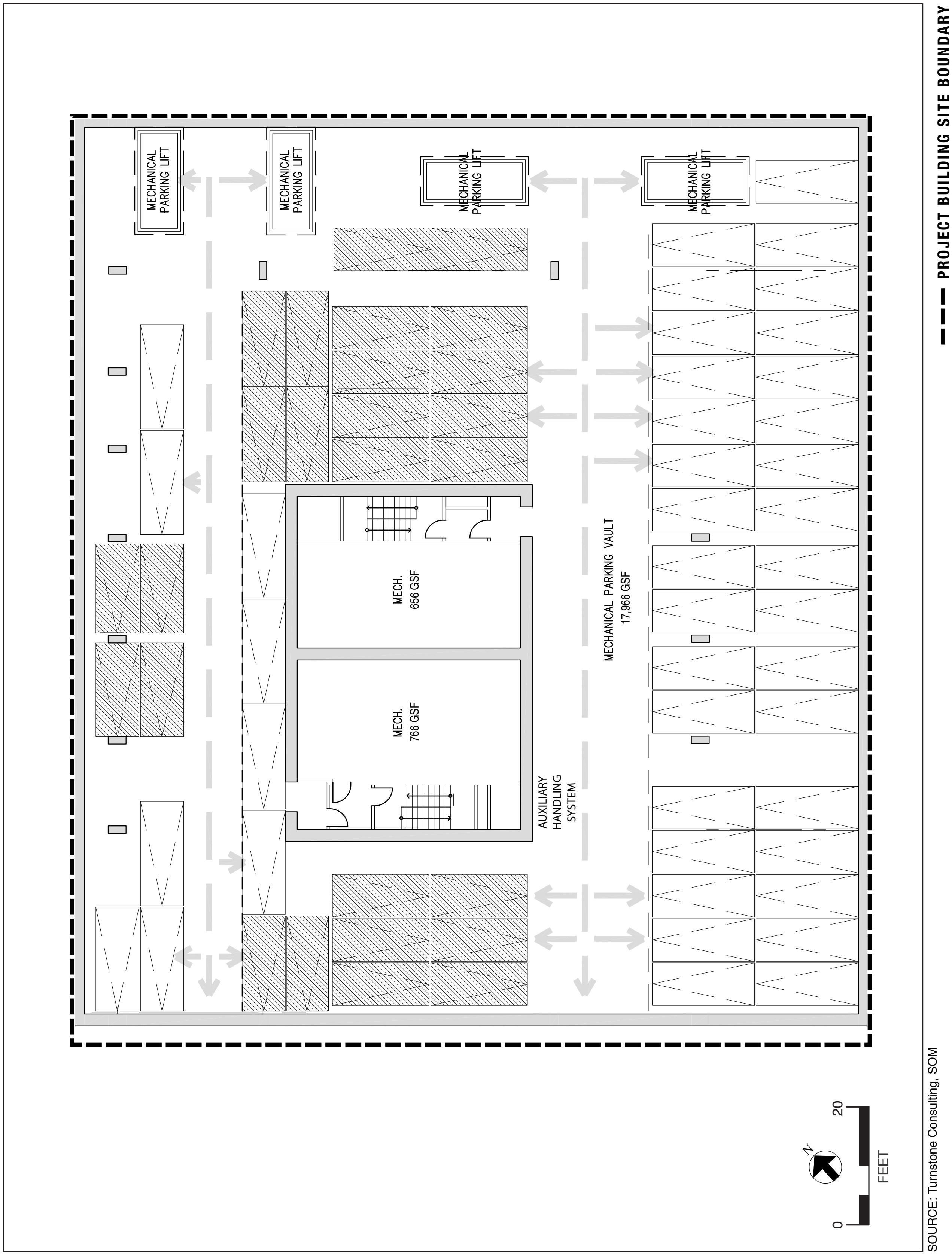

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FIGURE 2.13: PROPOSED BASEMENT LEVEL 2 PLAN

As under the proposed project, there would be 172 accessory parking spaces for residential uses, and 2 parking spaces assigned for commercial uses. The Public Parking Variant would provide a total of 3 car-share parking spaces (2 more than under the proposed project). All 268 parking spaces would be located in stacked spaces on a portion of Basement Level 2 with use of a proposed mechanical parking system. In order to accommodate the additional stacked mechanical parking spaces under this variant, Basement Level 2 would be constructed at a greater depth than under the proposed project (about 11 feet deeper) and the stacked mechanical parking spaces would be configured differently. The project sponsor is currently contemplating utilizing a robotic valet system. Non-resident vehicles would travel down the garage ramp to Basement Level 1, where cars would be mechanically parked by utilizing a robotic valet system in stacked spaces on Basement Level 2 below. Under this variant, non-resident users of the proposed parking garage would retrieve their vehicles by entering a door from Howard Street adjacent to the vehicular entrance and use the stairs or elevator to Basement Level 1, where they would wait for their vehicles to be retrieved and exit the parking garage via the ramp. All other aspects of the proposed Public Parking Variant would be the same as under the proposed project.

Proposed Residential/Hotel Mixed Use Variant

The proposed Residential/Hotel Mixed Use Variant would include approximately 109 residential units within approximately 217,020 gsf of residential space (170,161 gsf of residential space plus about 46,859 gsf of additional space for lobby, amenities, circulation, service, mechanical, etc.) and 82 hotel rooms within 145,825 gsf of hotel space (104,260 gsf of hotel space plus about 51,565 gsf of additional space for amenities, circulation, service, mechanical, etc.). The proposed height and total gsf of the high-rise tower under this variant would otherwise be the same as under the proposed project. Hotel rooms would be located on floors 3 through 7 and floors 10 through 12 of the proposed high-rise tower, while residential units would be located on floors 13 through 31. As under the proposed project, the variant would include approximately 28,408 gsf of lobby restaurant/café, and amenity space for residents on the first and second floors. Under this variant, floor 8 would be used exclusively for hotel guests and would contain a lounge, reception area, and hotel kitchen and dining. Floor 9 would provide amenity space, including spa services (approximately 8,410 gsf), which would be accessible to hotel guests and building residents, as well as the general public. Residents and hotel guests would use the same building entrance and lobby on the ground floor; however, the hotel guests would access floors 3 through 12 by a separate elevator.

The proposed Residential/Hotel Mixed Use Variant would provide a total of 268 stacked parking spaces (93 more than under the proposed project): 103 accessory parking spaces for the residential units and hotel (69 fewer spaces than under the proposed project); 7 parking spaces assigned for commercial uses (5 more than under the proposed project); 4 car-share spaces (3 more than under the proposed project); and 154 non-accessory public parking spaces to partially offset the 540 public spaces lost by the demolition of the 75 Howard Garage. Similar to the proposed Public Parking Variant, in order to accommodate the additional stacked mechanical parking spaces under the Residential/Hotel Mixed Use Variant, Basement Level 2 would be constructed at a greater depth than under the proposed project (about 11 feet deeper) and the stacked mechanical parking spaces would be configured differently. All parking would be accessed on Basement Level 1 in the same manner as the proposed project.

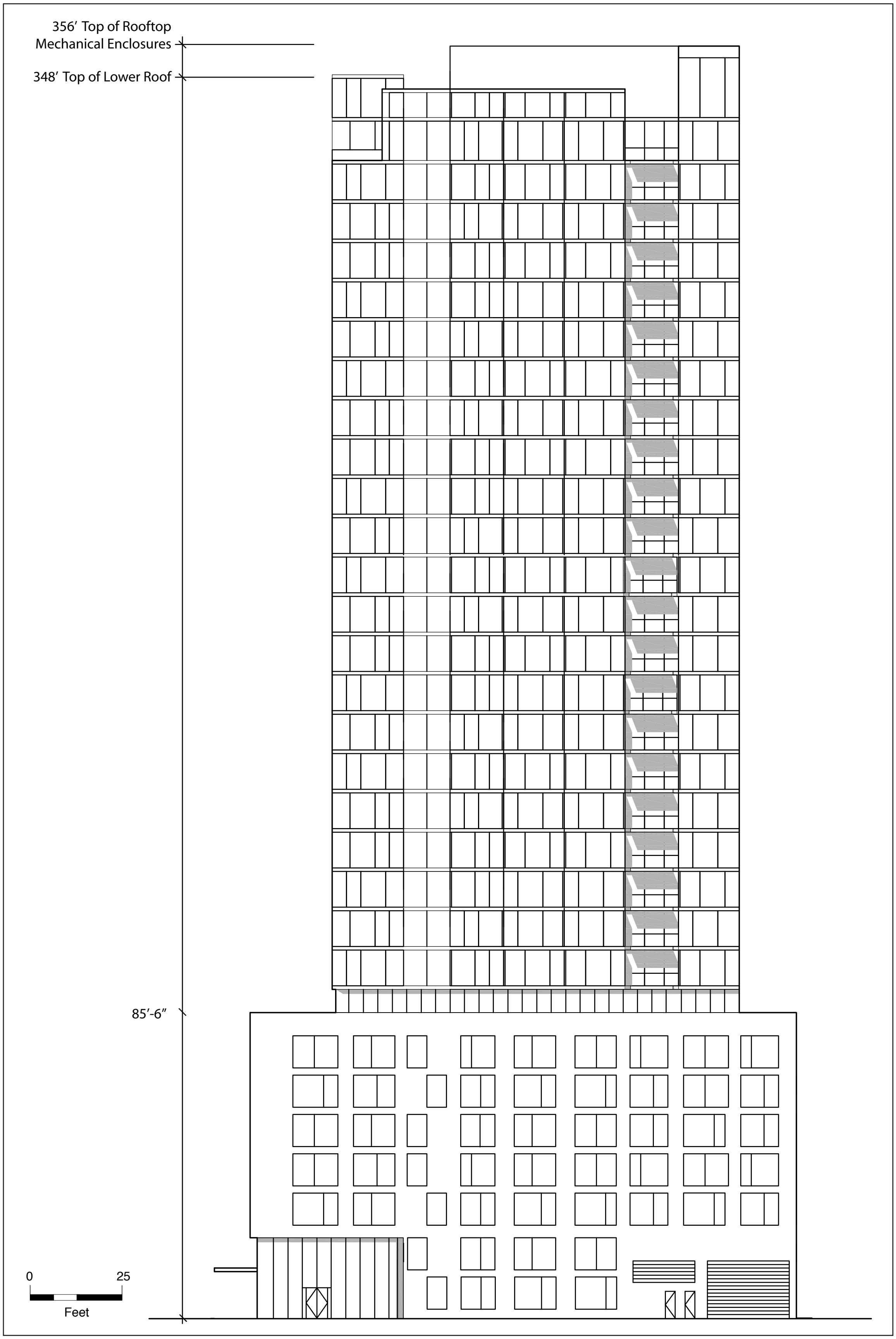
As under the proposed project, the Residential/Hotel Mixed Use Variant would include 64 bicycle storage spaces located on Basement Level 1. Forty of those bicycle spaces would be provided for the residents, and 24 spaces would be provided for visitors, employees, and hotel guests. Bicyclists would access these spaces by elevator from either the residential, hotel, or service entrances located at the ground floor of the high-rise tower.

The height, bulk, and overall design of the building would be the same as the proposed project. Unlike the proposed project, this variant would include approximately 3,153 sq. ft. of publicly accessible open space on the first and second floors of the building. This public open space would be comprised of a sloped open space on the south side of the building leading to an observation deck on the second floor of the building. As under the proposed project, an additional 1,628-sq.-ft. outdoor terrace would be provided as common residential open space on the 30th floor of the proposed high-rise tower.

PROPOSED BUILDING FORM

For both the proposed project and project variants, the proposed 31-story high-rise tower would consist of two main elements: a horizontal podium element, surmounted by a vertical tower element. (See Figure 2.14: Proposed North Elevation; Figure 2.15: Proposed East Elevation; Figure 2.16: Proposed South Elevation; and Figure 2.17: Proposed West Elevation.)

The 7-story (82-foot-tall) horizontal podium element would be built to its Howard Street (north) and Steuart Street (east) property lines, and it would be set back from the south property line by about 18 feet and from the west property line by about 3 feet. The podium element would measure about 153 feet from east to west and 116 feet from north to south. The ground and second stories would be recessed about one to six feet from the wall plane of the podium above, forming a high, continuous band of glazing at the ground floor and second floor across a portion of the north façade, all of the east façade, and part of the south façade. These setbacks are intended to define a transparent, pedestrian-oriented ground and second floor, with a horizontal podium volume above, provide additional sidewalk space along Howard Street and Steuart Street, and provide additional space for the café garden and common open space along the south façade.



SOURCE: Turnstone Consulting, SOM

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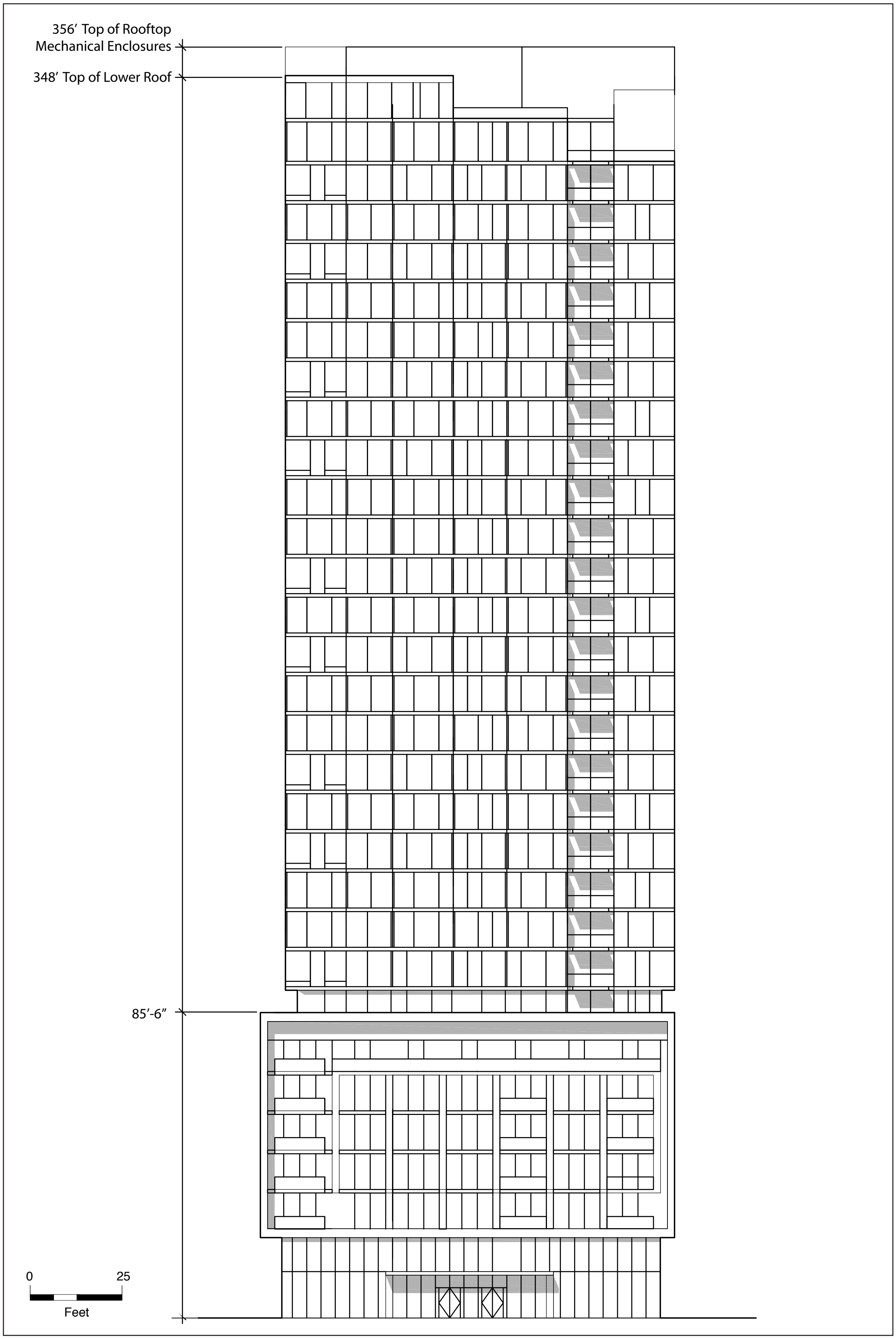
FIGURE 2.14: PROPOSED NORTH ELEVATION



SOURCE: Turnstone Consulting, SOM

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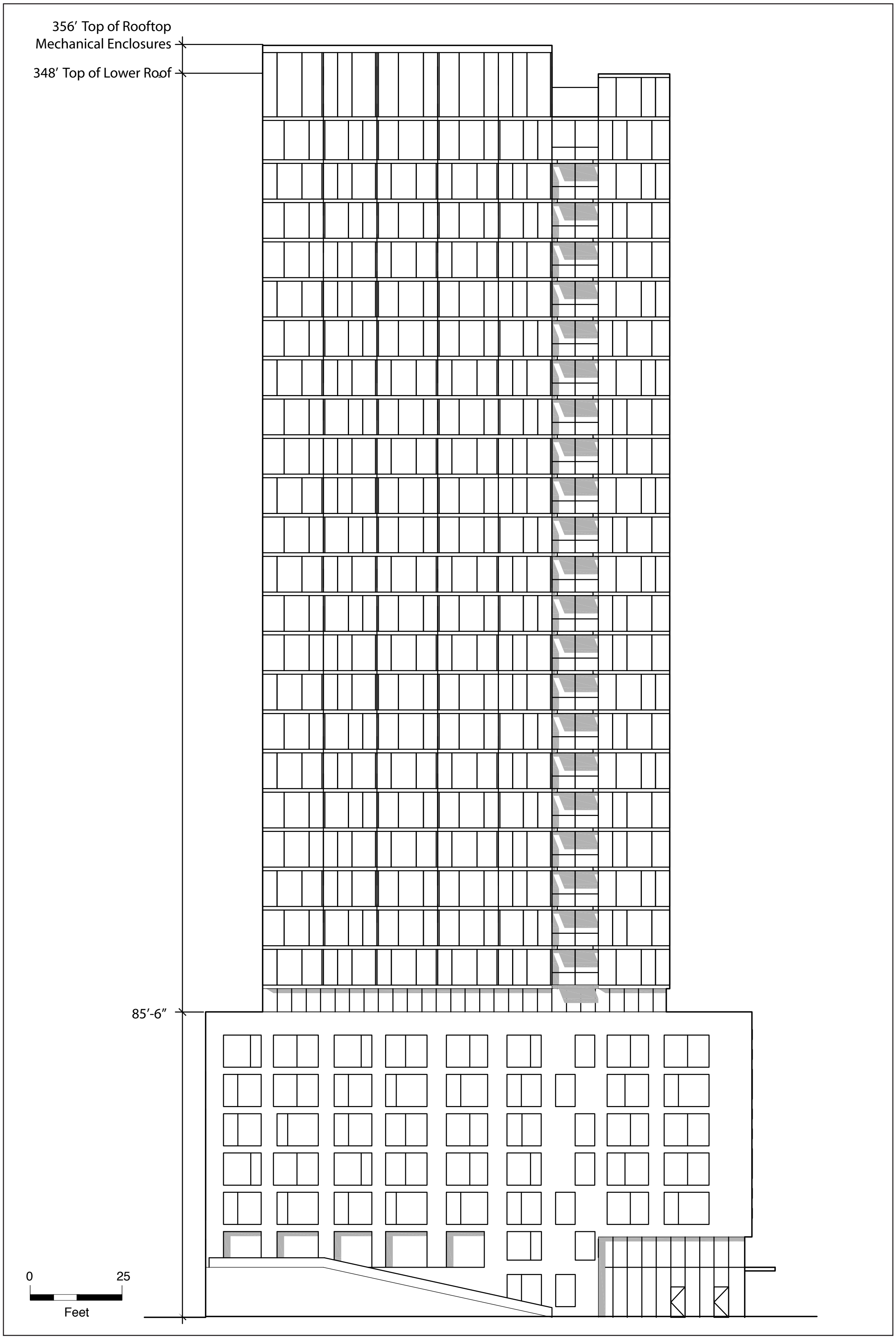
FIGURE 2.15: PROPOSED EAST ELEVATION



SOURCE: Turnstone Consulting, SOM

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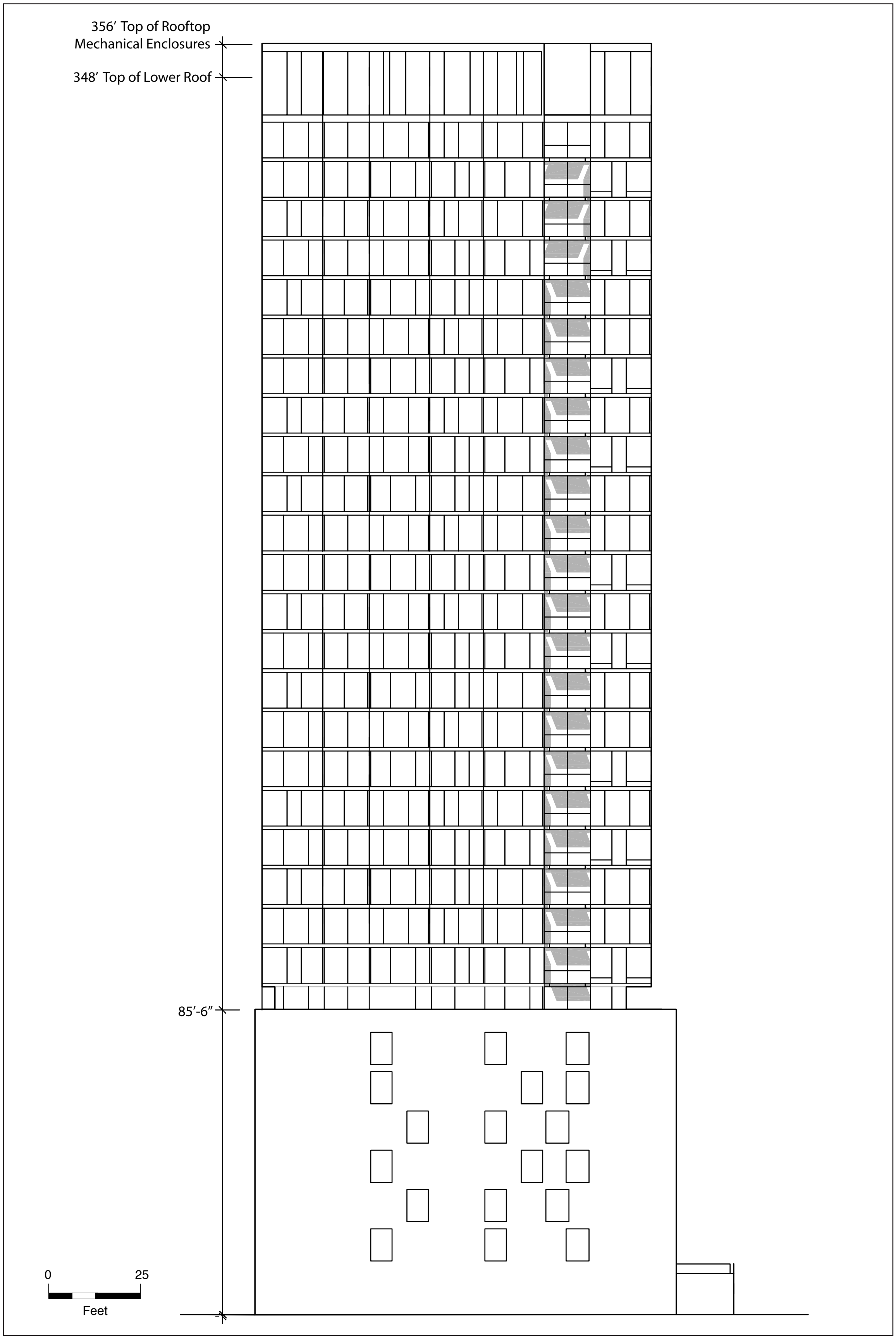
FIGURE 2.16: PROPOSED SOUTH ELEVATION



SOURCE: Turnstone Consulting, SOM

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FIGURE 2.17: PROPOSED WEST ELEVATION

The 24-story vertical tower element together with the 7-story podium would rise a total of 31 stories (348 feet tall, plus an additional 8 feet for rooftop screening and mechanical enclosures). The tower element would be nearly square in plan, measuring about 114 feet from east to west and 109 feet from north to south. It would be set back from the podium element below by about 2 feet from the podium's north façade, 23 feet from the podium's east façade, 5 feet from the podium's south façade, and 16 feet from the podium's west façade. However, floor 8 (the terrace level), the lowest floor within the tower element, would be further set back from the tower wall plane above it along the north and south façades to accentuate the transition between the podium and tower elements and to articulate each of these elements as distinct from each other. The building would likely be clad in glass and stone (granite or limestone), ranging from light to medium grey.

OPEN SPACE AND LANDSCAPING

Proposed Residential Open Space

Proposed residential open spaces would include a combination of private open space and common open space. The project would provide approximately 14,388 sq. ft. of private open space in the form of private balconies and terraces for 103 individual residential units. Each of the private open spaces would exceed the minimum requirement for private open space (36 sq. ft.) under Planning Code Section 135. Required common open space for the remaining 83 units without private open space would total approximately 3,974 sq. ft. Common open space provided as part of the proposed project would meet the minimum amount of common open space required under Planning Code Section 135, and would total about 4,716 sq. ft. in the form of a 1,628-sq.-ft. roof terrace on floor 30, a 2,443-sq.-ft. space along the south side of the building at the ground floor and sloping up to the second floor, and a 645-sq.-ft. open space on the second floor.

Proposed Publicly Accessible Open Space and Landscaping

As part of the proposed project, a new 4,780-sq.-ft. publicly accessible open space would be developed on the open space improvement site. The project would finance the installation and ongoing maintenance of the open space improvements. The open space would be bounded on all sides by sidewalks that would include landscaping and hardscape improvements; these improvements would be visually integrated with the proposed new open space. Installation of the open space improvements would require the approval of the Department of Real Estate and other

City departments with regulatory jurisdiction. The City would retain ownership of the open space improvement site.[4]

In addition to this new open space, the project would install hardscape, landscape, and pedestrian improvements to the segment of Steuart Street south of Howard Street. A total of eight on-street parking spaces along this segment of Steuart Street south of Howard Street would be eliminated. This segment of Steuart Street would be narrowed, and the turnaround bulb at the southern terminus of Steuart Street would be reconfigured and incorporated into the design of the open space area. Approval of these improvements would require either (i) a street improvement permit, (ii) an encroachment permit, or (iii) a street vacation ordinance, as determined by the Department of Public Works. These modifications to Steuart Street are intended to enhance the pedestrian accessibility, size, quality, and utility of the proposed publicly accessible open space and to link this proposed open space with the existing open space of the Gap Building. The resulting enlarged area would be landscaped and have seating and may include outdoor sculptures.

There are ten street trees (*Ficus*) immediately adjacent to the building site to the north along Howard Street) and to the east along Steuart Street (five trees), 11 street trees (Sycamore) immediately adjacent to the open space improvement site to the north along Howard Street (two trees) and to the east along The Embarcadero (nine trees), and six street trees (*Ginkgo*) in front of the adjacent Gap Building's publicly accessible open space site. All of these street trees, except for five trees along Steuart Street immediately adjacent to the building site, would remain. The proposed project or its variants would be required to comply with the provisions of the San Francisco Planning Code's Green Landscaping Ordinance, which requires projects involving the construction of a new building or relocation of an existing building within a C-3 District to install street trees. Proposed landscaping would also be required to comply with the San Francisco Public Utilities Commission (SFPUC) Pipeline Right-of-Way Requirements and with the Urban Forestry Ordinance, Article 16 of the San Francisco Public Works Code. As part of the proposed project or project variants, 16 new street trees (London Plane) would be planted along the Steuart Street right-of-way to complement and integrate with the approximately 4,780-sq.-ft. open space that would be developed on the open space improvement site under the proposed project or its variants.

4 While the San Francisco Department of Real Estate has authorized the Planning Department to analyze potential environmental impacts of the proposed construction and operation of a park, the City would not sell the property and has not authorized construction of a park.

PROJECT CONSTRUCTION

Foundation and Excavation

The proposed building would have a deep foundation consisting of driven or drilled steel piles supporting a reinforced concrete mat foundation. Up to about 400 driven or drilled piles could be anticipated. The piles would extend to a depth of up to 70 to 90 feet below the ground surface through layers of fill and Bay Mud to gain support from the layer of bedrock below.[5] It is anticipated that the depths to bedrock vary within the project site from 60 to 80 feet, sloping downward from west to east.

The proposed project would have an estimated depth of excavation for the basement garage levels and mat foundation of as much as 59 feet below the ground surface. Approximately 45,000 cubic yards of soil would be excavated and removed from the project site. Installation of the landscape and hardscape improvements to the open space improvement site could require additional excavation up to ten feet deep on portions of the improvement site and up to 5,000 cubic yards of soil that would be excavated and removed from the site. Excavation depth within the Steuart Street right-of-way would vary between 18 to 24 inches deep.

Both project variants would have an estimated depth of excavation for the basement garage levels of as much as 70 feet below the ground surface (11 feet deeper than the proposed project to accommodate space needed to install the additional stacked parking spaces) and for which approximately 54,000 cubic yards of soil (9,000 cubic yards more than the proposed project) would be excavated and removed from the project site.

Construction Phasing and Duration

Project construction would take about 30 months. Assuming construction beginning in early 2014, the residential tower could be ready for occupancy in the summer of 2016. Demolition would take about 11 weeks. Basement construction would take a total of about 19 weeks (including the following overlapping phases: 14 weeks of excavation, 5 weeks of pile driving, and about 7 weeks to construct the mat and floor slabs and basement walls). Above-ground building construction would take about 70 weeks. The construction of the open space improvement area would likely occur during the last half of the construction period for the above-ground construction.

Construction and phasing under both variants would be similar to the proposed project. However, one week would be added to the overall schedule for the project variants to accommodate

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[5] Treadwell & Rollo, *Preliminary Geotechnical Investigation Report*, December 9, 2011, p. 8. A copy of this document is available for public review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2011.1122E.

additional shoring, excavation and foundation work required for the construction of the deeper basement.

E. INTENDED USES OF THE EIR

An EIR is an informational document that is intended to inform the public and the decision-makers of the environmental consequences of a proposed project and to present information measures and feasible alternatives to avoid or reduce the environmental effects of the proposed project. It examines the potential significant physical environmental impacts that could result from the proposed project. This EIR provides the environmental information and evaluation necessary for decision-makers to adopt and implement the proposed 75 Howard Street project. This Draft EIR has been prepared by the City and County of San Francisco pursuant to the California Environmental Quality Act (California Public Resources Code Section 21000 et seq. and California Code of Regulations Title 14, sections 15000 et seq., "CEQA Guidelines").

This EIR is a project-level EIR. That is, it analyzes implementation of the proposed project at a project-specific level. Before any discretionary project approvals may be granted for the project, the San Francisco Planning Commission (Planning Commission) must certify the EIR as adequate, accurate, and objective. This Draft EIR will undergo a public comment period (from August 1, 2013 to September 16, 2013 as noted on the cover of this EIR, during which time the Planning Commission will hold a public hearing on the Draft EIR. Following the close of the public comment period, the San Francisco Planning Department (Planning Department) will prepare and publish a Responses to Comments document, containing all substantive comments received on the Draft EIR and the Planning Department's responses to those comments. It may also contain specific changes to the Draft EIR. The Draft EIR, together with the Responses to Comments document, including revisions to the Draft EIR, if any, will be considered for certification by the Planning Commission at a public hearing and certified as a Final EIR if deemed adequate, accurate, and objective. As noted, no approvals or permits may be issued prior to certification of the Final EIR.

PROJECT APPROVALS

The project requires the following project approvals. These approvals may be reviewed in conjunction with the required environmental review, but may not be granted until the required environmental review is completed.

State and Regional Approvals

- *California Department of Alcoholic Beverage Control.* If the proposed retail uses, or the tourist hotel in the Residential/Hotel Mixed Use Variant, elect to sell alcoholic beverages, liquor licenses would be required.

Actions by the Board of Supervisors

- *Planning Code Amendments for Height District Reclassification and a General Plan Amendment:* The building height of the proposed project would exceed the height limit of the existing 200-S Height and Bulk District, as well as the 200-foot height limit specified on Map 5 (Proposed Height and Bulk Districts) in the *Downtown Area Plan* of the *General Plan*. The Board of Supervisors would need to approve an amendment to the Zoning Map Height and Bulk Districts (Sheet HT01) pursuant to Planning Code Section 302, as well as a General Plan Amendment revising Map 5 pursuant to Section 340.
- *Approval of Major Encroachment Permit and Maintenance Agreement:* The Board of Supervisors would need to approve construction of open space improvements on Block 3742/Lot 12 and Steuart Street right-of-way reconfiguration and improvements.
- *Approval of General Plan Referral and Street Vacation:* The Board of Supervisors, Planning Department and Department of Public Works approval. The proposed project includes reduction of the width and/or changes to the alignment of Steuart Street along the project frontage, which could require a street vacation. If the Department of Public Works requires that a street be vacated in order for the project sponsor to install the proposed streetscape improvements, then a referral to the Planning Department would be required for a formal determination as to whether the proposed project is consistent with the objectives and policies of the *General Plan* prior to an action by the Board of Supervisors to approve a street vacation. If the Department of Public Works does not require a street vacation, and instead allows the streetscape improvements to be installed with an encroachment permit, then no action to approve a street vacation would be necessary.

Actions by the Planning Commission

- *Recommendation to the Board of Supervisors to Approve Amendments for Height District Reclassification and General Plan Amendment*.
- *Approval of General Plan Referral:* Upon referral by the Planning Department and Department of Public Works.
- *Approval of Section 309 Determination of Compliance and Request for Exceptions for the Construction of a New Building in a C-3 District*: The Planning Commission would need to determine that the project complies with Planning Code Section 309. This Section establishes a framework for review of projects within C-3 Districts to ensure conformity with the Planning Code and the *General Plan*, and modifications may be imposed on various aspects of the project to achieve this conformity. These aspects include overall building form, impacts on public views, shadows and wind levels on sidewalks and open spaces, traffic circulation, relationship of the project to the streetscape, design of open space features, improvements to adjacent sidewalks (including street trees, landscaping, paving material, and street furniture), quality of residential units, preservation of on-site and off-site historic resources, and minimizing significant adverse environmental effects.

  Through the Section 309 Review process, the following modifications from certain requirements of the Planning Code would be considered. As proposed, it appears that the project would require the following modifications:

Accessory Parking. Per Planning Code Section 151.1, within C-3 Districts, off-street accessory parking may be provided for 0.25 cars per residential unit. The project sponsor requests, by the Section 309 Review process, to provide accessory off-street parking in the following amounts: 1 car parked per each dwelling unit that has two or more bedrooms (and is greater than 1,000 sq. ft. in size), and 0.75 car parked per dwelling unit that has one or fewer bedrooms (or is otherwise smaller than 1,000 sq. ft. in size).

Rear Yard. Per Planning Code Section 134, within C-3 Districts, a rear yard must be provided that is equal to 25 percent of the lot, at the lowest level containing a dwelling unit and at each succeeding level. The project sponsor requests, by the Section 309 Review process, to provide a rear yard of approximately 18 feet in depth.

Bulk Controls. Per Section 270, Buildings within "S" bulk districts are subject to specified bulk controls for the "lower tower" and "upper tower" portions of the building. The proposed project and variants would comply with the dimensional bulk controls for the lower tower and the upper tower, but they would not comply with the bulk control for upper tower volume reduction. As such, the proposed project and project variants would require an exception to the bulk control for upper tower volume reduction pursuant to Sections 270, 272, and 309.

- *Approval of Conditional Use Authorization.* For the project variant that proposes to provide 96 non-accessory off-street parking spaces for nearby retail uses, the Planning Commission would need to grant Conditional Use authorization, pursuant to Planning Code Sections 158 and 303, for the non-accessory parking garage use proposed as part of the proposed project and project variants. The Commission would consider the specific criteria of Sections 157 and 158, in addition to the Conditional Use authorization criteria of Section 303.
- *Approval of Conditional Use Authorization*. For the Residential/Hotel Mixed Use Variant, the Planning Commission would need to grant Conditional Use authorization, pursuant to Planning Code Sections 216(b)(i) and 303, for a hotel containing fewer than 200 rooms. The Commission would consider the specific criteria of Section 303(g), in addition to the Conditional Use authorization criteria of Section 303.

Actions by the Zoning Administrator

- *Granting of Variances*. As currently proposed, the following Variances must be sought for these aspects of the project:

Exposure. Per Planning Code Section 140, at least one room of each dwelling unit must face on to a public street, rear yard, or other open area that meets minimum requirements for area and horizontal dimensions. Section 140 specifies that an open area must have a minimum horizontal dimension of 25 feet at the lowest floor containing a dwelling unit and at the floor immediately above, with an increase of 5 feet in horizontal dimension for each subsequent floor above. The project, as proposed, does not satisfy these requirements, and therefore a Variance would be required. Of the proposed 186 units, 53 units (all of which face south) would not meet the exposure requirements of Planning Code Section 140. These units would face the open space place for the Gap Inc. Headquarters and the at-grade parking lot for 201 Spear Street.

Street Frontages. Per Planning Code Section 145.1, all ground floor frontage that is not used for parking and/or loading access, building egress, and/or mechanical systems must be occupied by active uses. Section 145.1(c)(2) limits the width of parking and loading access for the project to no more than 20 feet. The proposed driveway along Howard Street measures about 26 feet wide, which exceeds the allowable width as specified by the Code.

Actions by Other City Departments

- *Approval of site permit:* Planning Department and Department of Building Inspection approval.
- *Approval of demolition, grading, and building permits:* Planning Department and Department of Building Inspection approval.
- *Approval of project compliance with the Stormwater Control Guidelines*: Department of Public Works approval.
- *Approval of a stormwater control plan:* San Francisco Public Utilities Commission approval.
- *Request for General Plan Referral and Street Vacation:* Planning Department, Department of Public Works, and Board of Supervisors approval. The proposed project includes reduction of the width and/or changes to the alignment of Steuart Street along the project frontage, which could require a street vacation. If the Department of Public Works requires that a street be vacated in order for the project sponsor to install the proposed streetscape improvements, then a referral to the Planning Department would be required for a formal determination as to whether the proposed project is consistent with the objectives and policies of the *General Plan* prior to an action by the Board of Supervisors to approve a street vacation. If the Department of Public Works does not require a street vacation, and instead allows the streetscape improvements to be installed with an encroachment permit, then no action to approve a street vacation would be necessary.
- *Approval of Major Encroachment Permit and Maintenance Agreement:* The Transportation Advisory Staff Committee, San Francisco Department of Public Works, SFMTA, San Francisco Department of Real Estate, and the San Francisco Fire Department would need to recommend approval to the Board of Supervisors for the construction of open space improvements on Block 3742/Lot 12 and reconfiguration of and improvements in the Steuart Street right-of-way.

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3. PLANS AND POLICIES

In accordance with CEQA Guidelines Section 15125(d), this chapter discusses potential conflicts between the proposed project and applicable local, regional, State, and Federal plans and policies. Policy conflicts do not, in and of themselves, indicate a significant environmental effect within the meaning of CEQA. To the extent that physical environmental impacts may result from such conflicts, such impacts are analyzed in this EIR in the specific topical sections in Chapter 4, Environmental Setting, Impacts, and Mitigation, and in Section E, Evaluation of Environmental Effects, of the Notice of Preparation/Initial Study (NOP/IS) that was published on December 12, 2012 (shown in Appendix A).

A. CONSISTENCY WITH APPLICABLE PLANS AND POLICIES

The proposed project was reviewed for inconsistencies with the following plans and policies:

- *San Francisco General Plan*
- San Francisco Planning Code
- Accountable Planning Initiative (Planning Code Section 101.1)
- *Climate Action Plan for San Francisco: Local Actions to Reduce Greenhouse Emissions*
- San Francisco Transit First Policy (City Charter, Section 8A.115)
- *San Francisco Bicycle Plan*
- *San Francisco Better Streets Plan*
- *San Francisco Sustainability Plan*
- San Francisco Congestion Management Program
- Regional Water Quality Control Board's *Water Quality Control Plan for the San Francisco Bay Basin*
- Bay Area Air Quality Management District's *Bay Area 2010 Clean Air Plan*
- Metropolitan Transportation Commission's *Transportation 2035 Plan for the San Francisco Bay Area*
- Association of Bay Area Governments' *Projections and Priorities 2009*

Potential inconsistencies with the *San Francisco General Plan*, the San Francisco Planning Code, and the Accountable Planning Initiative are discussed below.

B. SAN FRANCISCO GENERAL PLAN

The *San Francisco General Plan* (*General Plan*) is the embodiment of the City's vision for the future of San Francisco.[1] It is comprised of a series of ten elements, each of which deals with a particular topic that applies citywide: Air Quality; Arts; Commerce and Industry; Community Facilities; Community Safety; Environmental Protection; Housing; Recreation and Open Space; Transportation; and Urban Design. The *General Plan* also includes area plans, each of which focuses on a particular area of the City. The project site is in the area covered by the *Downtown Area Plan* and is more specifically located within the area covered by the *Transit Center District Plan, a Sub-Area Plan* of the *Downtown Area Plan*. In addition, the open space improvement site is within the *Northeastern Waterfront Area Plan*. Each of these elements and area plans was reviewed in relation to the proposed project and the two variants to the proposed project.

Development in San Francisco is subject to the *General Plan,* which provides general policies and objectives to guide land use decisions and contains some policies that relate to physical environmental issues. The Planning Department, the Zoning Administrator, the Planning Commission, the Board of Supervisors, and other City decision-makers will evaluate the proposed project for conformance with the objectives and policies of the *General Plan,* and will consider potential conflicts as part of the decision-making process. The consideration of *General Plan* objectives and policies is carried out independent of the environmental review process, as part of the decision to approve, modify, or disapprove a proposed project.

Conflicts with plans, policies, or regulations do not, in and of themselves, indicate a significant environmental effect within the meaning of CEQA. To the extent that physical environmental impacts may result from such conflicts, these impacts are analyzed under the relevant environmental topic in the Initial Study (Section E, Evaluation of Environmental Effects) or in the EIR (Chapter 4, Environmental Setting, Impacts, and Mitigation). The consistency of the proposed project and its variants with plans, policies, and regulations that do not relate to physical environmental issues will be considered by City decision-makers when they determine whether to approve, modify, or disapprove the proposed project.

As directed by the State CEQA Guidelines (Section 15125(d)), potential conflicts with *Downtown Area Plan* policies are discussed below. Additional *General Plan* policies with which the proposed project could conflict are discussed following the *Downtown Area Plan*. This section is not intended to provide an analysis of *General Plan* consistency: in particular, this section is not intended to, and does not, identify policies with which the proposed project would be consistent.

1 San Francisco Planning Department website, http://www.sf-planning.org/ftp/General_Plan/index.htm, accessed March 8, 2013.

Staff report(s) for Planning Commission and Board of Supervisors approval action(s) on the proposed project will contain a complete analysis of *General Plan* consistency.

Given that the project would involve the development of a residential tower that is substantially taller than permitted by height limits currently applicable to the project site, the proposed project would conflict with certain objectives and policies of the Urban Design Element, the *Downtown Area Plan*, and the *Transit Center District Plan* (TCDP), which is a subarea plan of the *Downtown Area Plan*, that speak to adverse effects of large-scale development.

The Urban Design Element addresses the physical character and order of the City and the relationship between people and their environment. Some of the objectives of the Urban Design Element that are applicable to the proposed project include emphasizing the characteristic pattern which gives the City and its neighborhoods an image, a sense of purpose, and a means of orientation; and moderating major new development to complement the City pattern, the resources to be conserved, and the neighborhood environment. The proposed project and variants, which would be approximately 348 feet tall, potentially conflicts with the following policy of the Urban Design Element:

- Policy 3.5: Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development.

As explained further in the Urban Design Element, "the heights of buildings should taper down to the shoreline of the Bay and Ocean, following the characteristic pattern and preserving topography and views." The proposed project would potentially conflict with the policy listed above, as the project would be taller than buildings located on the blocks immediately adjacent to the project site. The proposed high-rise tower would make a step up, rather than a step down, at the southeastern edge of Downtown along the waterfront. The project is generally consistent with the *General Plan*'s call to concentrate tall buildings in centers of activity such as downtown.

The *Downtown Area Plan* grew out of an awareness of the public concern over the degree of change occurring downtown and the often conflicting civic objectives between fostering a vital economy and retaining the urban patterns and structures that collectively form the physical essence of San Francisco. The *Downtown Area Plan*, which generally encompasses the Downtown Zoning Districts in the Civic Center, Union Square, Financial District, and portions of the South of Market neighborhoods, contains objectives and policies that guide land use decisions in downtown San Francisco. These objectives and policies address issues such as space for commerce, space for housing, usable open space, historic preservation, urban design, pedestrian and vehicular circulation, and seismic safety. The proposed project and variants, which would be approximately 348 feet tall, potentially conflict with the following policies of the *Downtown Area Plan*:

- Policy 13.1: Relate the height of buildings to important attributes of the city pattern and to the height and character of existing and proposed development.
- Policy 14.1: Promote building forms that will maximize the sun access to open spaces and other public areas.

The TCDP is a comprehensive plan for the southern portion of San Francisco's Financial District. The Transit Center District covers an area of approximately 145 acres that is generally bounded by Market Street on the north, Steuart Street on the east, Folsom Street on the south, and a line extending mid-block between Third and New Montgomery streets on the west. The intent of the TCDP is to focus new growth in close proximity to San Francisco's highest concentration of public transit. On July 31, 2012, the Board of Supervisors adopted the TCDP and all related ordinances necessary to implement the plan.[2] The TCDP included amendments to the *General Plan*, the Planning Code, and the Zoning Maps. These amendments include new planning policies and zoning controls to address land use, urban form (building height and design), street network modifications, public realm improvements, historic preservation, and sustainability. Full implementation of the TCDP is expected to result in approximately 7 million square feet (sq. ft.) of commercial space and 6,100 new households.[3]

The project site is in the area covered by the TCDP. Therefore, the objectives and policies of the TCDP are applicable to the proposed project and variants. One of the objectives of the TCDP is to "further the *Downtown Area Plan*, which strives to expand downtown southward into formerly industrial and low-rise areas around the Transit Center." The TCDP emphasized concentrating development, mostly office, in the immediate vicinity of the Transit Center. The project is generally consistent with the objectives and policies of the TCDP related to increasing the concentration of development in proximity to the City's greatest concentration of public transit. However, the proposed project and variants potentially conflict with the TCDP's objectives and policies related to urban form (building height and design). The proposed project and variants would not comply with the height and bulk controls for the project site, as shown in Figure 1: Proposed Height Limits, on p. 12, of the TCDP.[4] Adoption of the TCDP did not result in the reclassification of the zoning, height, or bulk controls for the project site. As discussed in Chapter 2, Project Description, pp. 2.8-2.10, the project site is in the Downtown Office Special Development District and a 200-S Height and Bulk District. At a height of 348 feet, the proposed project and variants would require a reclassification of the height limit for the project site.

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2 San Francisco Board of Supervisors, Ordinances No. 182-12, 183-12, 184-12, and 185-12, adopted July 31, 2012. These documents are available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, as part of Case File No. 2011.1122E.

3 San Francisco Planning Department, *Transit Center District Plan and Transit Tower Final Environmental Impact Report*, Cases No. 2007.0558E and 2008.0789E, certified May 24, 2012, pp. 72 and 198. These documents are available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400.

4 San Francisco Planning Department, *Transit Center District Plan*, adopted July 31, 2013, p. 12.

Project compliance with the height and bulk controls is discussed in more detail under “Height and Bulk Districts,” pp. 3.5-3.6. The proposed project and variants potentially conflict with the TCDP’s objectives and policies that call for building heights to step down from the downtown core to San Francisco Bay:

- Objective 2.5: Balance consideration of shadow impacts on key public open spaces with other major goals and objectives of the Plan, and if possible, avoid shading key public spaces during prime usage times.
    - Policy 2.5: Transition heights down to adjacent areas, with particular attention on the transitions to the southwest and west in the lower scale South of Market areas and to the waterfront to the east.

The physical environmental impacts that could result from the conflicts noted above are discussed in Section 4.A, Land Use and Land Use Planning, pp. 4.B.5-4.B.10, Section 4.C, Aesthetics, pp. 4.C.16-4.C.22, and Section 4.H, Shadow, pp. 4.H.10-4.H.30.

C. SAN FRANCISCO PLANNING CODE

The Planning Code, which incorporates by reference the City’s Zoning Map, implements the *San Francisco General Plan* and governs permitted uses, density, and configuration of buildings within the City. Permits to construct new buildings (or to alter or demolish existing ones) may not be issued unless (1) a project complies with the Planning Code, (2) allowable exceptions are granted pursuant to provisions of the Planning Code, or (3) amendments to the Planning Code are included as part of the project.

HEIGHT AND BULK DISTRICTS

The project site is in a 200-S Height and Bulk District. The maximum building height is 200 feet, and the “S” bulk controls[5] are set forth in Planning Code Section 270(d). The “S” Bulk District has specific controls for the different portions of a building (the base, the lower tower, and the upper tower). The bulk controls for the “S” Bulk District are discussed in detail in Chapter 2, Project Description, pp. 2.8-2.9. The proposed project would not comply with the height limit, and implementation of the proposed project or project variants would require the adoption of legislative amendments to reclassify the existing height limit from 200 feet to 348 feet.

[5] Bulk controls reduce the size of a building’s floorplates as the building increases in height.

Based on the proposed height reclassification to the 350-S Height and Bulk District, the lower tower bulk controls would apply above a height of approximately 103 feet, and the upper tower bulk controls would apply above a height of approximately 220 feet. There are no bulk controls for the base. The proposed project and variants would comply with the dimensional bulk controls for the lower tower (maximum length of 160 feet, maximum floor size of 20,000 sq. ft., maximum diagonal dimension of 190 feet) and the upper tower (maximum length of 130 feet, maximum average floor size of 12,000 sq. ft., maximum floor size for any floor of 17,000 sq. ft., maximum average diagonal measure of 160 feet).

The proposed project and variants would not comply with the volume reduction bulk control for the upper tower, which requires that the average floor size of the upper tower be reduced as set forth in Planning Code Section 270(d)(3)(B). Based on an average lower tower floor size of 12,000 sq. ft., the upper tower would have to be reduced by 10 percent (i.e., the average upper tower floor size cannot exceed 10,800 sq. ft.). The upper tower (floors 20 and above) of the proposed project and variants would have an average floor size of approximately 11,485 sq. ft. The existing bulk limit would not be reclassified, but the project sponsor would seek an exception from the bulk control for upper tower volume reduction pursuant to the procedures set forth in Planning Code Sections 270, 272, and 309.

The physical environmental impacts that could result from the conflicts noted above are discussed in Section 4.A, Land Use and Land Use Planning, pp. 4.B.5-4.B.10, Section 4.C, Aesthetics, pp. 4.C.16-4.C.22, and Section 4.H, Shadow, pp. 4.H.10-4.H.30.

THE 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 and established eight Priority Policies. These policies are (1) preservation and enhancement of neighborhood-serving retail uses and future opportunities for resident employment in and ownership of such businesses; (2) conservation and protection of existing housing and neighborhood character to preserve the cultural and economic diversity of neighborhoods; (3) preservation and enhancement of affordable housing; (4) discouragement of commuter automobiles that impede Muni transit service or that overburden streets or neighborhood parking; (5) protection of industrial and service land uses from commercial office development and enhancement of resident employment and business ownership; (6) maximization of earthquake preparedness; (7) preservation of landmarks and historic buildings; and (8) protection of parks and open space and their access to sunlight and vistas.

Prior to issuing a permit for any project that requires an Initial Study under CEQA, prior to issuing a permit for any demolition, conversion, or change of use, and prior to taking any action that requires a finding of consistency with the *General Plan*, the City is required to find that such project or action would be consistent with the Priority Policies. The consistency of the proposed project and variants with the environmental topics associated with the Priority Policies is discussed in Section E, Evaluation of Environmental Effects, of the Initial Study, or in Chapter 4, Environmental Setting, Impacts, and Mitigation, of this EIR, providing information for use in the case report for the proposed project. The staff reports and approval motions prepared for the decision-makers would include a comprehensive project analysis and findings regarding the consistency of the proposed project and variants with the Priority Policies.

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4. ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION

A. INTRODUCTION

This chapter of the EIR addresses the physical environmental effects of the proposed project and variants. The Planning Department distributed a Notice of Preparation/Initial Study (NOP/IS) on December 12, 2012, announcing its intent to prepare and distribute an EIR to solicit comments from the public about the scope of this EIR (the NOP/IS is shown in Appendix A).

The Initial Study determined that project-specific and cumulative impacts in certain topic areas would have no impact or less-than-significant impacts, and therefore would not be evaluated in this EIR. The topics of Population and Housing; Cultural and Paleontological Resources (Historic Architectural and Paleontological Resources only); Greenhouse Gas Emissions; Wind; Recreation; Public Services; Geology and Soils; Hazards and Hazardous Materials; Mineral and Energy Resources; and Agricultural and Forest Resources will not be discussed further in the EIR. Please refer to the Initial Study in Appendix A for a discussion of these topics.

The Initial Study determined that the proposed project or its variants could result in potentially significant impacts in the following topic areas: Land Use and Land Use Planning (Conflicts with Adopted Plans and Land Use Character only); Aesthetics; Cultural and Paleontological Resources (Archaeological Resources only); Transportation and Circulation; Noise; Air Quality; Shadow; Biological Resources (Bird Migration and Local Movement only); and Hydrology and Water Quality (Sea Level Rise only). These topics are evaluated in this EIR. The topic of Utilities and Service Systems (Wastewater Treatment Facilities and Stormwater Drainage Facilities and Odor Issues from Infrastructure only) is also evaluated in the EIR as concerns were raised after the 30-day public comment period on the NOP/IS about the proposed project's impacts on wastewater, existing utility infrastructure, and odors from existing sewer lines. Therefore, these comments are addressed in this EIR in Chapter 4, Sections 4.F, Air Quality, and 4.I, Utilities and Service Systems.

FORMAT OF THE ENVIRONMENTAL ANALYSIS

This chapter contains nine sections in addition to this Introduction, each addressing a different environmental topic. They are Section 4.B, Land Use and Land Use Planning; Section 4.C, Aesthetics; Section 4.D, Cultural and Paleontological Resources; Section 4.E, Transportation and Circulation; Section 4.F, Noise; Section 4.G, Air Quality; Section 4.H, Shadow; Section 4.I, Utilities and Service Systems; Section 4.J, Biological Resources; and Section 4.K, Hydrology and Water Quality. Each of these sections contains the following subsections: Introduction, Environmental Setting, Regulatory Framework, and Impacts and Mitigation Measures.

The Introduction subsection for each topic describes the types of impacts that are analyzed, refers the reader to the pages in the Initial Study that address the topic, and summarizes the Initial Study conclusion(s) for the topic.

The Environmental Setting subsection for each topic describes the existing conditions in the project site vicinity. For the proposed project, existing conditions are generally defined as the conditions that existed at the time that the NOP/IS was published on December 12, 2012. Existing conditions serve as the baseline for the analysis of environmental impacts that would result from implementation of the proposed project, presented under the Impacts and Mitigation Measures subsection.

The Regulatory Framework subsection describes Federal, State and local regulatory requirements that are directly applicable to the environmental topic.

The Impacts and Mitigation Measures subsection describes the physical environmental impacts of the proposed project and each variant for each topic, as well as any mitigation measures that could reduce impacts to less-than-significant levels. This subsection begins with a listing of the significance thresholds used to assess the severity of the environmental impacts for that particular topic. These thresholds are those listed in the Planning Department's Initial Study checklist. Certain environmental topic sections also include a topic-specific "Approach to Analysis," which follows the "Significance Thresholds" subsection. This discussion explains the parameters, assumptions, and data used in the analysis. (The general approach used to evaluate the environmental impacts of all topics is described under "Approach to Analysis" and "Approach to Cumulative Analysis" on pp. 4.A.3-4.A.4). This is followed by a "Project Features" discussion which summarizes aspects of the project relevant to each topic.

Under the Impact Evaluation discussion, the project-level impact analysis for each topic begins with an impact statement that reflects the significance thresholds identified in the Planning Department's Initial Study Checklist (Environmental Review Guidelines, October 5, 2012). Some significance thresholds may be combined in a single impact statement, if appropriate. Each impact statement is keyed to a subject area abbreviation (e.g., LU for Land Use) and an impact number (e.g., 1, 2, 3) for a combined alpha-numeric code (e.g., Impact LU-1, Impact LU-2, Impact LU-3). When significant impacts are identified, mitigation measures are presented to avoid, eliminate, or reduce significant adverse impacts of the project and/or one of the variants to the proposed project. Improvement measures are identified in some topic areas that would further reduce less-than-significant effects of the proposed project and/or its variants. Each mitigation measure corresponds to the impact statement with an "M" in front to signify it is a mitigation measure (e.g., Mitigation Measure M-LU-1 for a mitigation measure that corresponds to Impact LU-1). If there is more than one mitigation measure for the same impact statement, the mitigation measures are numbered with a lowercase letter suffix (e.g., Mitigation Measures

M-LU-1a and M-LU-1b). Improvement measures are numbered with an "I" to signify "improvement measure," the topic code, and a letter (e.g., I-LU-A).

Each impact statement describes the impact that would occur without mitigation. The level of significance of the impact is indicated in parentheses at the end of the impact statement based on the following terms:

- **No Impact** – No adverse changes (or impacts) to the environment are expected.
- **Less Than Significant** – Impact that does not exceed the defined significance criteria or would be eliminated or reduced to a less-than-significant level through compliance with existing local, State, and Federal laws and regulations.
- **Less Than Significant with Mitigation** – Impact that is reduced to a less-than-significant level through implementation of the identified mitigation measures.
- **Significant and Unavoidable with Mitigation** – Impact that exceeds the defined significance criteria and can be reduced through compliance with existing local, State, and Federal laws and regulations and/or implementation of all feasible mitigation measures, but cannot be reduced to a less-than-significant level.
- **Significant and Unavoidable –** Impact that exceeds the defined significance criteria and cannot be eliminated or reduced to a less-than-significant level through compliance with existing local, State, and Federal laws and regulations and for which there are no feasible mitigation measures.

Cumulative impacts of the proposed project are described in a separate subsection following the complete project-level impact analysis for each topic. Cumulative impact statements are numbered consecutively for each impact statement with a combined alpha-numeric code to signify it is a cumulative impact. For example, C-LU-1 refers to the first cumulative impact for Land Use and Land Use Planning.

APPROACH TO ANALYSIS

To evaluate these project impacts, each environmental topic in Chapter 4 of the EIR addresses impacts related to (1) the construction of a 348-foot-tall building containing residential, ground floor retail, and below-grade parking uses; (2) the development of a new publicly accessible open space on the open space improvement site on the east side of Steuart Street across from the project site; (3) the construction of a project variant that would have the same characteristics as the proposed project but with additional below-grade parking; and (4) the construction of a project variant that would have the same characteristics of the proposed project but with hotel rooms replacing some of the residential units and with additional below-grade parking.

APPROACH TO CUMULATIVE ANALYSIS

Cumulative impacts from the proposed project are analyzed for each environmental topic. In accordance with CEQA, cumulative impacts may be analyzed by applying a list-based approach (a list of past, present, and reasonably foreseeable future projects, including projects outside the control of the lead agency), a plan-based approach (a summary of projections in an adopted general plan or related planning document), or a reasonable combination of the two.[1] In general, the City and County of San Francisco uses a plan-based approach that relies on local/regional growth projections (i.e., population, jobs, and number and type of residential units). This is the approach that is used for many of the environmental topics in this EIR. However, for certain topics, consideration of a list of projects is more appropriate. The cumulative analyses in the Aesthetics, Noise, Shadow, and Biological Resources sections each use a different list of nearby projects that is appropriately tailored to the particular environmental topic based upon the potential for combined localized environmental impacts. These are described in the respective topical sections in this chapter.

[1] CEQA Guidelines, Section 15130(b)(1).

B. LAND USE AND LAND USE PLANNING

INTRODUCTION

Section B, Land Use and Land Use Planning, examines the effects of the proposed project related to land use and land use planning, discusses the effects on existing land use that would occur if the proposed project were implemented, and discusses the cumulative land use effects of the proposed project in combination with other proposed, planned or reasonably foreseeable development projects.

As described in Appendix A, the Notice of Preparation/Initial Study (NOP/IS), pp. 39-43, determined that the proposed project and project variants would not physically divide an established community; would not conflict with applicable land use plans, policies, and regulations of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect; and would not have a substantial impact on the existing character of the vicinity. Comments received during the 30-day public review period on the NOP/IS requested that the EIR provide a reevaluation of the analysis regarding conflicts with applicable plans, policies, and regulations, and an in-depth analysis of the proposed project's impacts on the land use character of the existing neighborhood. Therefore, the EIR analyzes these two subtopics under Impacts LU-1 and LU-2, respectively.

ENVIRONMENTAL SETTING

LAND USES ON THE PROJECT SITE

The 75 Howard Street building site is currently developed with a 540-space commercial parking garage that is approximately 91 feet tall. The existing garage has 7 floors with 8 levels of parking (one level of parking is on the roof). The open space improvement site (Block 3742/Lot 12) is currently vacant and paved with asphalt.

LAND USES IN THE PROJECT VICINITY

The project site is surrounded by existing high-rise buildings on the north, west, and south. This existing development contains a mix of residential, office, and ground floor retail uses. To the east of the project site is The Embarcadero, a broad waterfront boulevard. Rincon Park runs along the east side of The Embarcadero between Howard Street and Harrison Street and is bordered by Herb Caen Way, a pedestrian promenade. San Francisco Bay is east of Rincon Park and Herb Caen Way. Please see Chapter 2, Project Description, pp. 2.5-2.7, for a more detailed discussion of the existing land uses in the project vicinity.

EXISTING ZONING DISTRICTS

The project site is in two different zoning districts. The 75 Howard Street building site is in the Downtown Office Special Development (C-3-O(SD)) District where development is the densest in the City, resulting in a notable skyline. Intensity and compactness in this district permits convenient travel by foot, and this district is well served by City and regional transit. The Parcel 3 portion of the 75 Howard Street building site and the open space improvement site are located in a Public Use (P) District. This zoning designation applies to land that is owned by a governmental agency and in some form of public use, including open space.

The blocks north and west of the project block are zoned C-3-O(SD). The blocks south of the project block are zoned Downtown Support (C-3-S), Light Industrial (M-1), and Rincon Hill Downtown Residential Mixed Use (RH-DTR). To the east of the project block, Rincon Park is in a P District, and the blocks along the east side of The Embarcadero are in a Community Business (C-2) District. Other zoning districts within two blocks of the project site include Downtown Office (C-3-O) to the northeast and Transbay Downtown Residential (TB-DTR) and Residential-Commercial Combined, High Density (RC-4) to the southwest.

EXISTING HEIGHT AND BULK DISTRICTS

The project site is in two height and bulk districts. The 75 Howard Street building site is in a 200-S Height and Bulk District where the maximum building height is 200 feet, and the “S” bulk controls[2] are set forth in Planning Code Section 270(d). The “S” Bulk District has specific controls for the different portions of a building (the base, the lower tower, and the upper tower). The bulk controls for the “S” Bulk District are discussed in detail in Chapter 2, Project Description, pp. 2.8-2.10. The open space improvement site is in a 65-X Height and Bulk District (a maximum building height of 65 feet with no required reduction in the size of the building’s floorplates as the building increases in height).

The blocks northwest, north, and northeast of the project block are in 300-S, 200-S, and 84-X Height and Bulk Districts. To the east of the project block are 84-E, 84-X-2, and 40-X Height and Bulk Districts. The blocks to the south, southwest, and west of the project block are in 85/200-R, 105-X, 300-W, 400-W, and 50/85/300-TB Height and Bulk Districts. Other height and bulk districts within two blocks of the project site include 85/150-R to the southwest,

[2] Bulk controls reduce the size of a building’s floorplates as the building increases in height.

50/65/185-TB, 50/85/450-TB, 50/85/550-TB, 400-S, and OS[3] to the west and northwest, and 84-J, 150-X, and 200-S to the north (see Figure 4.B.1: Existing Height and Bulk Limits in the Project Vicinity).

REGULATORY FRAMEWORK

Chapter 3, Plans and Policies, discusses the land use regulatory framework relevant to the proposed project, including the *San Francisco General Plan (General Plan)* and the San Francisco Planning Code (Planning Code). Potential conflicts between the proposed project or variants and the following land use plans, policies, or regulations were identified:

General Plan, Urban Design Element

- Policy 3.5: Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development.

General Plan, Downtown Area Plan

- Policy 13.1: Relate the height of buildings to important attributes of the city pattern and to the height and character of existing and proposed development.
- Policy 14.1: Promote building forms that will maximize the sun access to open spaces and other public areas.

General Plan, Transit Center District Plan

- Objective 2.5: Balance consideration of shadow impacts on key public open spaces with other major goals and objectives of the Plan, and if possible, avoid shading key public spaces during prime usage times.
    - Policy 2.5: Transition heights down to adjacent areas, with particularly attention on the transitions to the southwest and west in the lower scale South of Market areas and to the waterfront to the east.

Planning Code Section 101.1, Priority Policy No. 8

- Protect parks and open space and their access to sunlight and vistas.

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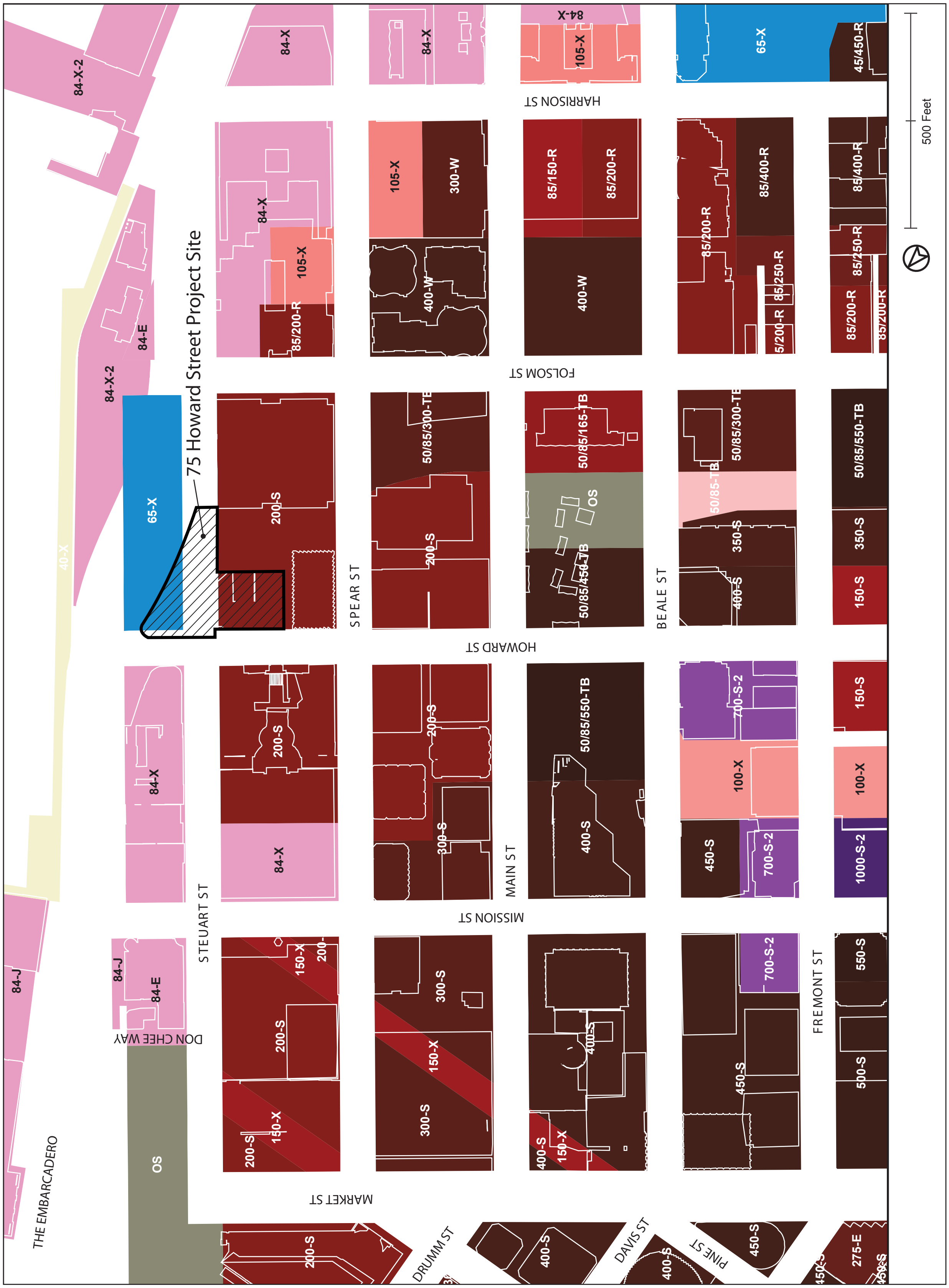
[3] The OS designation identifies an "Open Space" Height and Bulk District. The height and bulk of buildings and structures in OS Height and Bulk Districts are determined by the objectives and policies of the *San Francisco General Plan*.



SOURCE: San Francisco Planning Department

75 HOWARD STREET

FIGURE 4.B.1: EXISTING HEIGHT AND BULK LIMITS IN THE PROJECT VICINITY

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 adopted and modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the project would result in a significant land use impact. Implementation of the proposed project and project variants would have a significant effect on land use and land use planning if the project would:

B.1 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; or

B.2 Have a substantial impact upon the existing character of the vicinity.

PROJECT FEATURES

The proposed project consists of the demolition of an existing 7-story parking garage and the construction of a new 31-story, 348-foot-tall residential high-rise tower with ground floor retail and below-grade parking uses. As part of the proposed project, an approximately 4,780-square-foot publicly accessible open space would be developed on the vacant open space improvement site on the east side of Steuart Street across from the project site.

The proposed project also includes two variants as options that the project sponsor may choose to implement. The proposed Public Parking Variant would have the same characteristics as the proposed project, but it would include additional below-grade parking for the public. The Residential/Hotel Mixed Use Variant would have the same characteristics as the proposed project, but it would contain a mix of 109 residential units and 82 hotel rooms instead of 186 residential units, and additional public parking similar to the proposed Public Parking Variant.

IMPACT EVALUATION

Impact LU-1: The proposed project or variants would conflict with an 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. *(Significant and Unavoidable)*

The proposed project or its variants involve reclassifying the height limit of the project site and constructing a building up to 348 feet tall, 148 feet taller than the existing 200-foot height limit on and in the immediate vicinity of the project site. Height limits in the area surrounding the project site are intended to reflect the prevailing topography, land uses, and planning context at the time at which they were adopted (i.e. the objectives and policies of the *General Plan's* Urban Design Element, *Downtown Area Plan*, and *Transit Center District Plan* [TCDP]). The Urban Design Element establishes the overall pattern of the City's development as an important attribute of the physical environment.

The proposed project would alter the existing height limit of 200 feet as measured in the "S" Bulk Districts (see Figure 4.B.1). The height of the proposed project or variants would be inconsistent with the immediate context of development because the proposed height is approximately 68 feet taller than its immediate neighbor to the north, 58 feet taller than the immediate neighbor to the south, and 92 feet taller than the immediate neighboring building to the west. The closest buildings of similar or greater height are located within one to two blocks north and west of the project site. The proposed project or variants would be about 25 feet shorter than the Infinity I at 301 Main Street (two blocks to the southwest), about 73 feet shorter than the Infinity II at 300 Spear Street (two blocks to the southwest), about 52 feet shorter than the Steuart Tower at One Market Plaza (one and one-half blocks to the north), and about 235 feet shorter than the Spear Tower at One Market Plaza (one and one-half blocks to the north). The stated purposes of the height and bulk districts are identified in Planning Code Section 251 and include multiple considerations relevant to the physical environment of San Francisco and its neighborhoods, as follows:

(a) Relating of the height of buildings to important attributes of the City pattern and to the height and character of existing development;

(b) Relating of the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction;

(c) Promotion of building forms that will respect and improve the integrity of open spaces and other public areas;

(d) Promotion of harmony in the visual relationships and transitions between new and older buildings;

(e) Protection and improvement of important City resources and of the neighborhood environment;

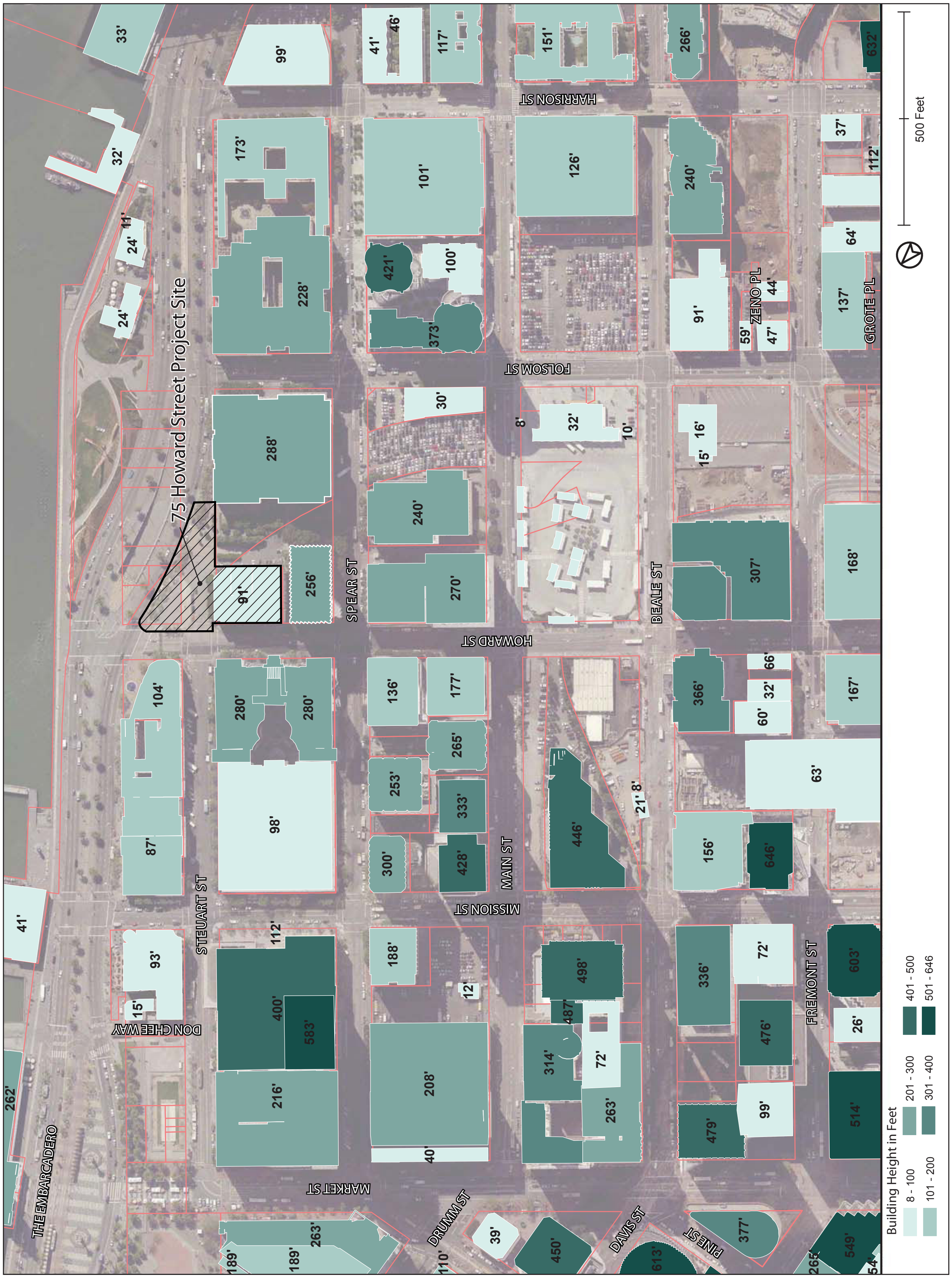
(f) Conservation of natural areas and other open spaces; and

(g) Direction of new development to locations that are appropriate in terms of land use and transportation.

Policy 13.1 of the *Downtown Area Plan* calls for relating the height of buildings to important attributes of the city pattern and to the height and character of existing and proposed development. This policy is nearly identical to Policy 3.5 of the Urban Design Element, which calls for relating the height of buildings to important attributes of the city pattern and to the height and character of existing development.

The text that follows Policy 13.1 of the *Downtown Area Plan* acknowledges the importance of avoiding visual disruption along the water, stating that the height of the downtown financial core "should taper down to the shoreline of the Bay." As with the policy itself, this explanatory text takes its cue from the Urban Design Element, which asserts, "The heights of buildings should taper down to the shoreline of the Bay and Ocean, following the characteristic pattern and preserving topography and views."

Included among the Urban Design Element's "Fundamental Principles for Major New Development" is the following: "Low buildings along the waterfront contribute to the gradual tapering of height from hilltops to water that is characteristic of San Francisco and allows views of the Ocean and the Bay." The project site is effectively on the first block along the waterfront, which has lower buildings than blocks further west and farther from the waterfront. As discussed on p. 4.B.6, the project or variants, as proposed at a height of 31 stories and 348 feet, would be taller than the buildings immediately adjacent to the project site. At a height of 348 feet, the proposed project or variants would disrupt the existing pattern of lower buildings on the first block along the waterfront that step up to taller buildings on blocks further west and farther from the waterfront. Although the proposed project or variants would be taller than the buildings immediately adjacent to the project site, there are some existing buildings in the greater two-block vicinity that are taller (see Figure 4.B.2: Existing Building Heights in the Project Vicinity). Potential sites for redevelopment that were studied in the Transit Center District Plan and Transit Tower (TCDP) EIR were those that were identified through an analysis of development potential by the Planning Department as well as those properties for which development applications were on file. Furthermore, at the request of property owners who had filed project applications with the Planning Department, certain properties within the Transit Center District were analyzed for height limit increases above and beyond those proposed by the Planning Department in a Developer Scenario Alternative in the TCDP EIR to reflect those applications. The project site was not identified through the TCDP process and EIR analysis as a likely development site due to the existing garage and its location on The Embarcadero along the waterfront. To avoid delaying the TCDP process and EIR, the property owner did not file any development application or request any rezoning during the formation of the TCDP different than what was proposed by the Planning Department as part of the TCDP. The project site and the blocks immediately north and west of it were not rezoned. The project sponsor is now seeking a height reclassification of the project site.



SOURCE: San Francisco Planning Department

75 HOWARD STREET

FIGURE 4.B.2: EXISTING BUILDING HEIGHTS IN THE PROJECT VICINITY

If the proposed height district reclassification is adopted, implementation of the proposed project would result in a development that would be 148 feet taller than what is currently permitted on the project site. The proposed height increase would allow more square footage to be developed on the project site than what could be developed under the current height limit. The physical land use impacts that would result from the development of this additional square footage are discussed under Impact LU-2, below. The physical impacts of the proposed project's or variants' height related to the topic of Aesthetics are discussed in Section 4.C, Aesthetics under Impact AE-1, pp. 4.C.18-4.C.20. The shadow impacts of the proposed project's or variants' height on outdoor recreation facilities or other public areas are discussed in Section 4.H, Shadow, under Impact WS-1, pp. 4.H.10-4.H.30.

Given that the proposed increase in the height limit on the project site is not consistent with the site's existing height zoning, the proposed project would conflict with a land use regulation adopted for the purpose of avoiding or mitigating an environmental effect (the purposes of the building height and bulk limits identified in Planning Code Section 251). Therefore, the proposed project and project variants would result in a significant and unavoidable project-level land use impact. There is no effective mitigation measure available that would avoid or substantially reduce the significant impact of the proposed project and project variants. Reduced height is addressed in the analysis of the project alternatives (see Chapter 6, Alternatives).

Impact LU-2: The proposed project or variants would not have a substantial impact on the existing character of the vicinity. *(Less than Significant)*

The proposed project or variants would introduce residential and retail, or residential/hotel and retail uses to the project site and develop a new publicly accessible open space on the east side of Steuart Street across from the proposed building site. Similar uses exist in the vicinity of the project site. The proposed residential use would be compatible with the existing residential uses at 88 Howard Street (Rincon Towers) located immediately north of the project site, and 301 Main Street/300 Spear Street (the Infinity) located two blocks to the southwest. The proposed retail use, which would include a café and restaurant, would be compatible with the existing retail uses in the area, and the proposed publicly accessible open space would be compatible with the existing open spaces and recreation facilities in the area. In addition, the potential hotel use in the Residential/Hotel Mixed Use Variant would be compatible with the existing hotels at 155 Steuart Street (Hotel Griffon) located one-half block to the northeast, 165 Steuart Street (Harbor Court Hotel) located one-half block to the northeast, and 8 Mission Street (Hotel Vitale) located one and one-half block to the northeast.

Both the project and project variants propose a 31-story, 348-foot-tall high-rise tower. As discussed in Chapter 2, Project Description, pp. 2.5-2.7, there are several high-rise buildings within one to two blocks of the project site that approach or exceed 300 feet in height, including the approximately 256-foot-tall office building at 201 Spear Street (immediately west of the project site), the approximately 280-foot-tall Rincon Towers (located immediately north of the project site), the approximately 290-foot-tall Gap Building (located at the south end of the project's building site block), the approximately 373-foot-tall Infinity I and the approximately 421-foot-tall Infinity II (both located two blocks to the southwest), the approximately 400-foot-tall Steuart Tower and the approximately 583-foot-tall Spear Tower (both located one and one-half blocks to the north). The proposed high-rise tower would be taller than some of these existing high-rise buildings, but it would be approximately 25 feet shorter than the Infinity I at 301 Main Street, about 73 feet shorter than the Infinity II at 300 Spear Street, about 52 feet shorter than the Steuart Tower at One Market Plaza, and about 235 feet shorter than the Spear Tower at One Market Plaza. Since there are already several existing high-rises in the vicinity of the project site, the addition of a 348-foot-tall tower would be consistent with the scale of some of the existing development in the general project vicinity.

For these reasons, the proposed project or project variants would not have a substantial adverse impact on the land use character of the vicinity. This impact would be less than significant, and no mitigation measures are necessary.

The visual impacts of implementing the 348-foot-tall proposed project or variants are discussed under Impact AE-3, in Section 4.C, Aesthetics, pp. 4.C.21-4.C.22.

CUMULATIVE IMPACT EVALUATION

Impact C-LU-1: The proposed project, in combination with past, present, or reasonably foreseeable future projects, would not contribute considerably to significant cumulative land use impacts related to (a) conflicting with applicable land use plans, policies, or regulations of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect, or (b) substantially impacting the existing character of the site vicinity. ***(Less than Significant)***

As discussed on p. 4.A.4, many of the environmental topics in this EIR use a plan-based approach for cumulative impacts analysis, but when appropriate, certain topics use a list-based approach. In analyzing cumulative land use impacts, it is appropriate to use a plan-based approach that also accounts for a list of reasonably foreseeable future projects in the vicinity of the project site (the area generally bounded by Market Street on the north, The Embarcadero on the east, Folsom Street on the south, and Third Street on the west). These reasonably foreseeable future projects could introduce land uses that physically affect the community in which the project site is located.

A proposed project located at 120 Howard Street, one-half block west of the project site, consists of a 3-story addition to an existing 8-story building that contains office uses, ground floor retail uses, and below-grade parking. Implementation of this project would add approximately

67,930 square feet of office space. This project has been approved.[4] The proposed high-rise building at 350 Mission Street, approximately 0.25 mile west of the project site, is a 375-foot-tall office building with ground floor retail that is currently under construction. The Planning Department is currently reviewing an application to add another 6 stories to the building, which would increase its overall height to 455 feet.[5] Other recently approved projects in the Transit Center District include 101 First Street, 41 Tehama Street, and 181 Fremont Street. The Transit Tower at 101 First Street, approximately 0.3 mile west of the project site, is a 1,070-foot-tall building containing approximately 1.37 million square feet of office space, 10,600 square feet of retail space, and underground parking.[6] The project at 41 Tehama Street, approximately 0.4 mile southwest of the project site, is a 342-foot-tall building containing approximately 325 dwelling units, 700 square feet of retail space, and 241 parking spaces.[7] The Planning Department is currently reviewing an application to modify the approved project at 41 Tehama Street to construct a 360-foot-tall building containing 398 dwelling units.[8] The project at 181 Fremont Street, approximately 0.25 mile southwest of the project site, is an 800-foot-tall building containing approximately 404,000 square feet, 74 dwelling units, 2,000 square feet of retail space, and underground parking.[9] Future development in the TCDP area would add new office, residential, retail and parking uses throughout the Plan area in new buildings of varying heights.

The proposed project, in combination with past, present, and reasonably foreseeable future projects, would be consistent with local and regional growth projections, such as *Projections and Priorities 2009*, published by the Association of Bay Area Governments, and adopted planning documents, such as the 2009 Update of the Housing Element of the *General Plan*, the *Downtown Area Plan*, and the TCDP. This cumulative development is not expected to conflict with any land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. While the proposed project, and its variants, would conflict with the

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4 San Francisco Planning Commission Motion No. 17465, adopted July 26, 2007. Documents related to this motion are available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400.

5 San Francisco Planning Department Case No. 2013.0276X. Documents related to this case file are available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400.

6 San Francisco Planning Commission Motion No. 18726, adopted October 18, 2012. Documents related to this motion are available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400.

7 San Francisco Planning Commission Motion No. 18753, adopted November 29, 2012. Documents related to this motion are available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400.

8 San Francisco Planning Department Case No. 2013.0256X. Documents related to this case file are available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400.

9 San Francisco Planning Commission Motion No. 18765, adopted December 6, 2012. Documents related to this motion are available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400.

adopted height limit, no reasonably foreseeable projects in the vicinity, including those within the Transit Center District, would involve development exceeding existing height limits. Therefore, the proposed project and variants would not combine with other cumulative development in the vicinity to cause a significant cumulative impact related to conflicts with plans adopted to avoid an environmental effect.

Implementation of the proposed project, in combination with past, present, and reasonably foreseeable future projects, would intensify land uses in the project vicinity, but this intensification and growth is not expected to introduce any land uses that do not already exist in the area. As a result, the character of the vicinity would not undergo any substantial adverse changes related to land use.

For these reasons, the proposed project, in combination with past, present, and reasonably foreseeable future projects, would have less-than-significant cumulative land use impacts. The proposed project would not make a cumulatively considerable contribution to a significant cumulative land use impact, and no mitigation measures are necessary.

Some of the primary physical effects of cumulative development would be an increase in population, an increase in demand for jobs and housing, and an increase in traffic that could lead to noise, air quality, and climate change effects. The effects of cumulative development on population, jobs, and housing and on climate change are addressed in the Initial Study (see Appendix A, pp. 51-53 and pp. 69-80, respectively). The effects of cumulative development on transportation and circulation, noise, and air quality are analyzed in Section 4.E, Transportation and Circulation, Section 4.F, Noise, and Section 4.G, Air Quality, respectively.

C. AESTHETICS

INTRODUCTION

Section C, Aesthetics, describes and analyzes the potential impacts of the proposed project and its variants on scenic vistas, scenic resources, and on the visual character and quality of the project site and its surroundings. The Notice of Preparation/Initial Study, pp. 43-46, concluded that project and variants' impacts related to the Aesthetics subtopic of light and glare would be less than significant. Therefore the subtopic of light and glare is not addressed in the EIR.

The Environmental Setting discussion in this section presents photographic views and describes the existing visual conditions of the project site and its surroundings; identifies existing scenic vistas and scenic resources in the areas that could be potentially affected by the proposed project; and describes the existing visual character of the 75 Howard Street project site and its surroundings.

The Impacts discussion in this section identifies the considerations applied when evaluating the significance of impacts on visual quality, and describes and evaluates impacts on visual resources and visual quality with reference to visual simulations of the proposed project. This section also considers whether the proposed project, in combination with other reasonably foreseeable development projects in the vicinity of the project site, would make a considerable contribution to cumulative environmental impacts related to aesthetics.

ENVIRONMENTAL SETTING

VISUAL CHARACTER OF THE PROJECT SITE AND ITS SURROUNDINGS

Project Site

<u>The 75 Howard Street Building Site</u>

The 75 Howard Street building site is developed with the existing 75 Howard Garage, built 1976. The 75 Howard Garage structure occupies nearly all of its 20,595-sq.-ft. lot and is 7 stories and about 91 feet tall. It is simple and utilitarian in its design: a basic cast-concrete frame comprised of vertical piers supporting horizontal parking decks. Its northeast corner and chamfered southeast corner are finished with applied rough-textured masonry units. The ground level openings are infilled with a lattice of open masonry units. Its second floor openings are infilled with chain link fencing. The upper floor decks are open to view. The top of the 75 Howard Garage is capped along its street frontages with a projecting trellis-like element.

A narrow planting strip separates the parking structure's base from the Howard Street and Steuart Street sidewalks. There are five street trees (*Ficus*) along the Howard Street frontage of the building site and five street trees (*Ficus*) along its Steuart Street frontage. The southeast corner of the building site contains a small triangular planting bed.

The Open Space Improvement Site

The open space improvement site is a trapezoidal area immediately to the east of the building site. It includes the Steuart Street right-of-way south of Howard Street, and the triangular lot at the southwest corner of Howard Street and The Embarcadero. The triangular lot is vacant and paved with asphalt. This vacant lot is bounded on all sides by concrete sidewalks and two street trees (Sycamore) along Howard Street and nine street trees (Sycamore) along The Embarcadero.

Surrounding Visual Context

The surrounding visual setting of the project site is varied in character. Building massing, scale, materials, and architectural character (with respect to age and architectural style) do not conform to any strongly discernible overall pattern at this southeast edge of the Downtown high-rise core. Generally, however, building heights tend to step down from west to east toward the waterfront.

To the North

Across Howard Street to the north of the project site is Rincon Towers, a 24-story, approximately 280-foot-tall, residential tower, built 1989. The 6-story podium base is horizontal in overall orientation with horizontal bands of windows, and masonry panel cladding with horizontal rustication. Two towers rest atop the podium base, each curving outward in a semi-circular arc. The towers are clad in dark tinted glass and contrasting light-colored masonry panels. The top of each tower is surmounted by an arched barrel vault feature.

Across Howard Street to the northeast of the project site is Bayside Plaza, a 7-story, approximately 104-foot-tall office building, built 1986. The building is trapezoidal in plan to fit its irregular site. The narrower south end is rounded. The upper floors each step back successively from the rounded south end of a 4-story base and echo the curve of the base in the floors above. The building is smooth skinned, clad with horizontal bands of light colored masonry panels that alternate with dark bands of windows.

Immediately north of Bayside Plaza is the Embarcadero YMCA building (8 stories, approximately 104 feet tall, built 1926). The building is rated Category II Significant under Article 11 of the Planning Code. The building features a distinctive Renaissance-inspired red brick façade featuring arched windows, ornate balconies and decorative crests at the entrance. The center portion of the façade is capped by an arcaded tower with a red tile roof.

To the East

To the east of the project site is The Embarcadero (described on p. 4.C.5). Further east, across The Embarcadero, is Rincon Park, the Embarcadero Promenade (also described on p. 4.C.5), and San Francisco Bay.

To the South

Immediately south of the project site is a small surface parking lot for the 201 Spear Street Building (which fronts on Spear Street and Howard Street). Adjacent to the vehicular access to the surface parking lot is the vehicular access to the subsurface parking garage of the Gap Building and a publicly accessible open space on the site of the Gap Building.

The Gap Building, located at the south end of the project block, is a 14-story (290 feet tall) office building, built 2001. The building has a 6-story base fronting along The Embarcadero/Steuart Street alignment to the east, Folsom Street to the south, and Spear Street to the east. Its upper stories are set back over 100 feet from the east façade of the base, with successively setback upper-story tiers, forming a symmetrical "stacked" composition. The building features a central tower element rising above the base. The building façades feature a grid of large windows and a red brick pier and spandrel frame, reminiscent of early 20th century industrial buildings in the South of Market area. Its ground floor, second floor, and central tower are clad in limestone.

To the West

To the west of the project site is the 201 Spear Street Building, an 18-story office building, approximately 256 feet tall, built 1985. The building has a simple rectilinear composition overall. The outer walls have a "sawtooth'' pattern in plan, creating continuous projecting vertical "bays" along the building's height and giving depth and texture to the façade. The building is clad in red brick. "Punched" window openings are aligned within the vertical projections.

SCENIC VISTAS

San Francisco's numerous hills offer expansive distant scenic views of water and of the Downtown. Existing high-rise buildings at the southeast edge of the densely developed Downtown are not prominent when viewed from areas of the City to the west, north and south of Downtown, when visible at all, due to dense intervening Downtown development. The proposed project would not substantially affect scenic vistas of Downtown when viewed from these areas.

San Francisco's eastern waterfront affords expansive, panoramic vistas of the Bay, the Bay Bridge, and distant landforms across water: Yerba Buena Island, Treasure Island, and the East Bay Hills beyond. The proposed project does not have the potential to affect expansive east-facing scenic views of the Bay and beyond, as the project site is located inland from the waterfront roadways and public open spaces from which the Bay is viewed.

Potentially affected scenic vistas would include views along inland street view corridors and views of Downtown from the eastern waterfront and the Bay Bridge.

Views Along Inland Street View Corridors

The Urban Design Element of the *General Plan* places substantial emphasis on the protection of public views of open space and water bodies and identifies "Street Areas Important to Urban Design and Views" and maps streets based on the quality of their views. The project site is not located on any street segment in the *General Plan* identified for the quality of its views. Street-level scenic vistas in the densely developed Downtown core are generally defined and framed by view corridors created by streets. Views of the Bay and landforms beyond are available looking eastward along the Howard Street view corridor. A view of the Bay Bridge is available looking southward along the Steuart Street view corridor.

Views of Downtown from the Eastern Waterfront and the Bay Bridge

In addition to offering east-facing views of San Francisco Bay, The Embarcadero and Rincon Park offer scenic vistas along their lengths, and back toward Downtown. When viewed from points along The Embarcadero and Rincon Park, from the east, southeast and northeast, buildings along this exposed southeastern edge of the City are highly prominent. A general pattern of densely clustered high-rise development in the Downtown core, tapering off to mid-rise and low-rise development at its periphery, characterizes San Francisco's skyline. This compact urban form signifies Downtown as the center of commerce and activity. However, the Downtown core is neither smooth nor uniform. A range of building heights in the Downtown creates gaps, peaks, dips and variety within this pattern, allowing taller buildings and building tops to stand out in profile against the sky. This tension between conformity and variety in the skyline results in a readable and recognizable visual identity for Downtown San Francisco.

The Bay Bridge/Interstate 80 through San Francisco is an Eligible State Scenic Highway (although not officially designated).[1] The west span of the Bay Bridge (particularly the westbound upper deck) offers motorists scenic vistas of San Francisco within the regional context of San Francisco Bay, islands in the Bay, the Golden Gate Bridge, and distant landforms of Marin County. The eastern edge of the Downtown core is highly prominent when viewed by west-bound motorists on the top deck of the Bay Bridge.

[1] California Department of Transportation, California Scenic Highway Mapping System. Available online at http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm. Accessed March 12, 2013.

SCENIC RESOURCES

Scenic resources include trees, rock outcroppings, and other landscape features that contribute to the scenic character of a public area. Scenic resources may also be man-made objects, such as a distinctive building or ensemble of buildings. The project site contains no landmark or significant trees, architecturally distinguished buildings, nor any other features of the natural or man-made environment that could be considered scenic resources.

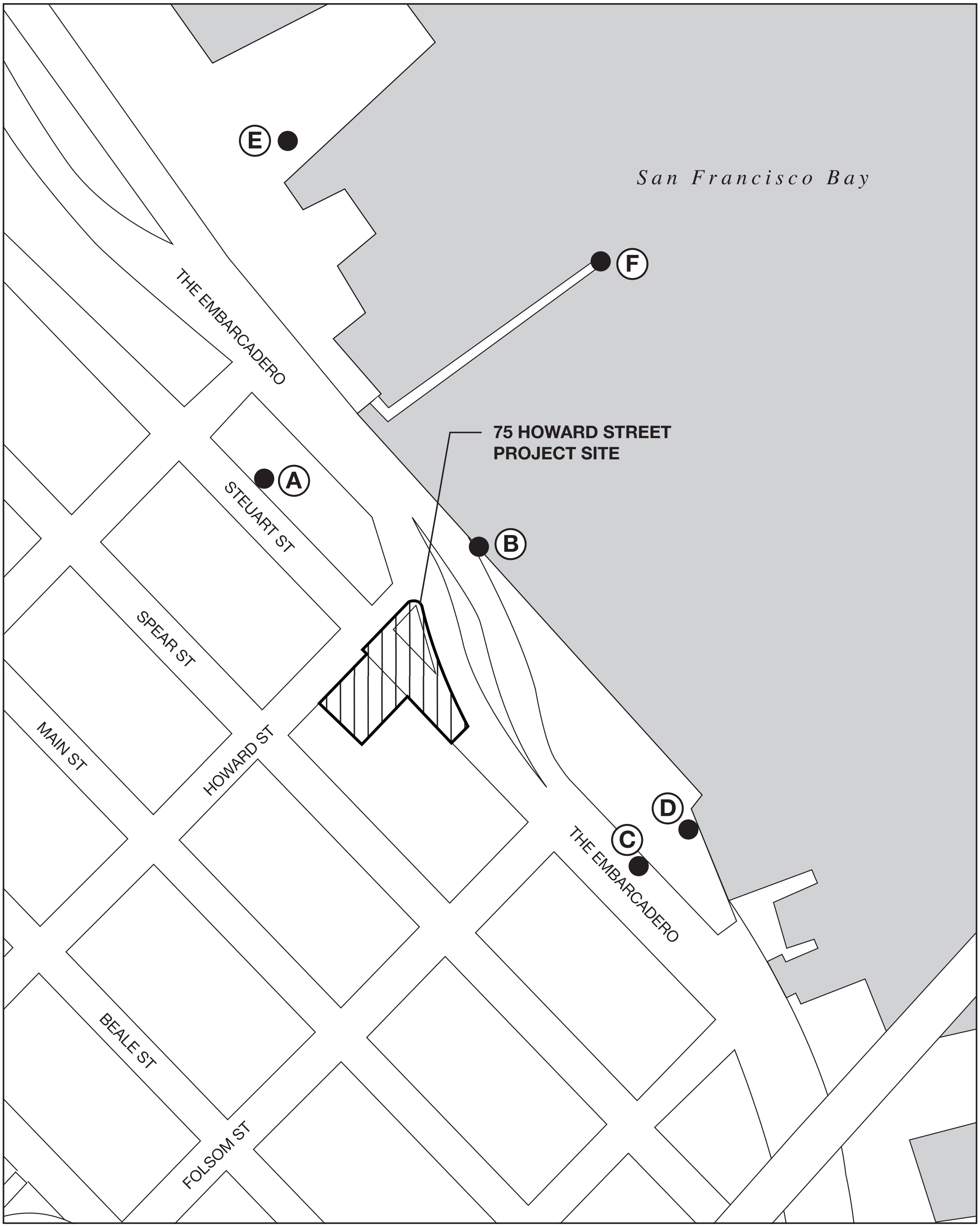
Immediately to the east of the project site is The Embarcadero, a broad waterfront boulevard. The Embarcadero is lined with Canary Island palms, providing a cohesive, linear, visual identity for the roadway while preserving Bay views. The Embarcadero is considered a scenic resource for the purposes of this analysis.

Rincon Park, on the opposite (east) side of The Embarcadero from the project site, is an approximately 2.7-acre a waterfront landscaped open space, offering areas of lawn, plantings and hardscape. Most of the park is not planted with trees, preserving views of the Bay. At the south end of Rincon Park, south of Folsom Street, are two 2-story restaurant buildings. The Embarcadero Promenade runs along the water's edge. Situated on the crest of a knoll is the sculpture *Cupid's Span* (about 60 feet tall and 130-140 feet wide). The sculpture has an open design, preserving views of the Bay. Rincon Park is considered a scenic resource for the purposes of this analysis.

PHOTOGRAPHIC VIEWS OF EXISTING CONDITIONS

An independent consultant photographed the project site from a range of publicly accessible vantage points around the project site. From these, the Planning Department selected six representative views that show the project site and its surrounding visual context. Figure 4.C.1: Viewpoint Locations shows the six locations from which the photographic views were taken. These views of existing conditions are presented in Figures 4.C.2 through 4.C.7 (denoted on the figures as "Existing"). The existing views represent the baseline visual conditions of the project site and its vicinity and are representative of a range of views from points around the project site from which the proposed project would be most prominent, or represent important public views of the San Francisco's Downtown Financial District and project site as seen from popular public gathering places (like Rincon Park, the Embarcadero Promenade, and the Ferry Building).

Computer-generated photomontages depicting the proposed project superimposed within the existing visual setting (denoted on the figures as "Proposed Project") are presented as part of the figure on the same page as the view of existing conditions, allowing the reader to compare



SOURCE: Turnstone Consulting

75 HOWARD STREET

FIGURE 4.C.1: VIEWPOINT LOCATIONS

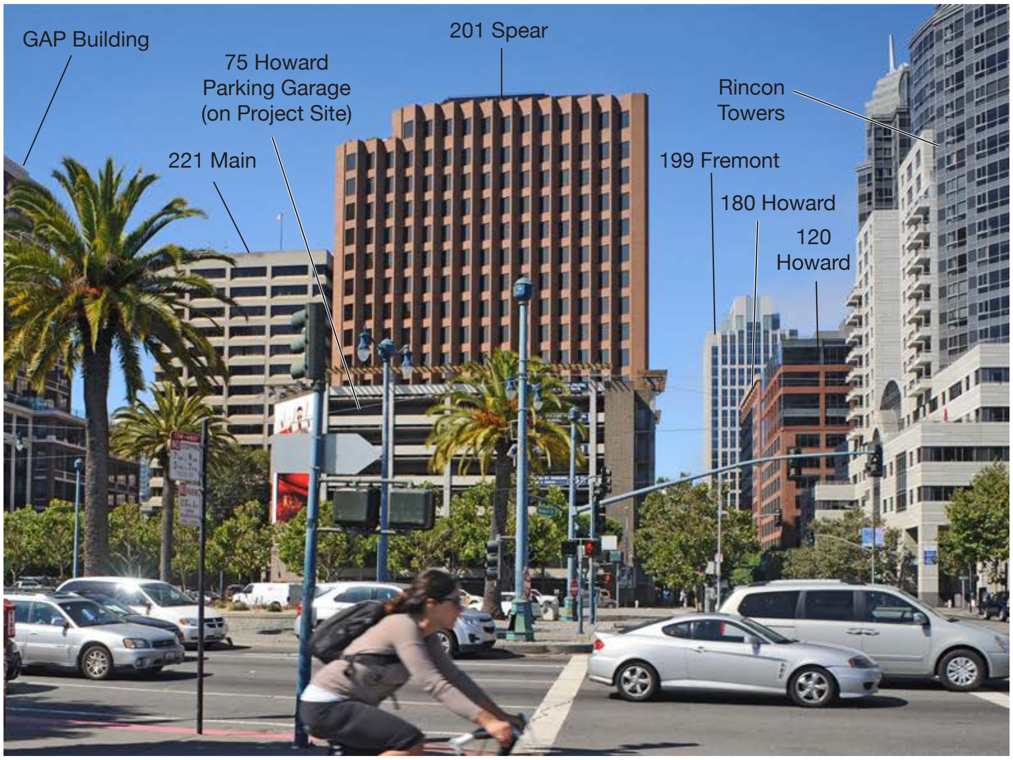
Existing

Proposed

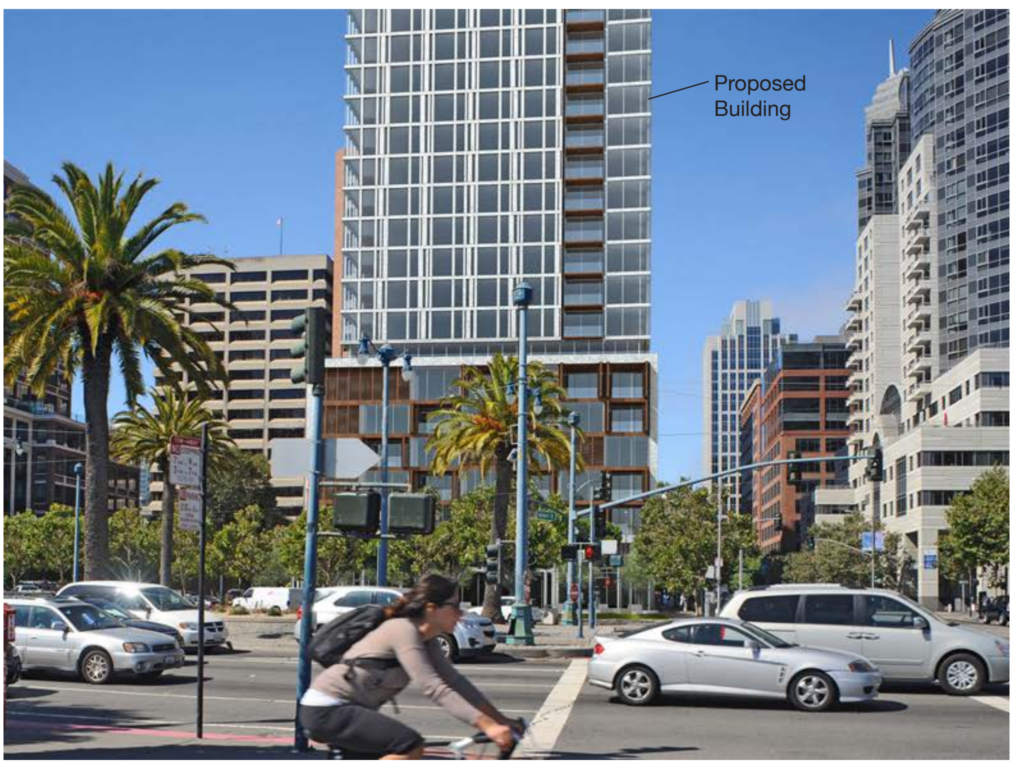
SOURCE: Square One Productions

75 HOWARD STREET

FIGURE 4.C.2: VIEW A - VIEW FROM STEUART STREET, LOOKING SOUTH



Existing



Proposed

SOURCE: Square One Productions

75 HOWARD STREET

FIGURE 4.C.3: VIEW B - VIEW FROM THE EMBARCADERO AT HOWARD STREET, LOOKING WEST

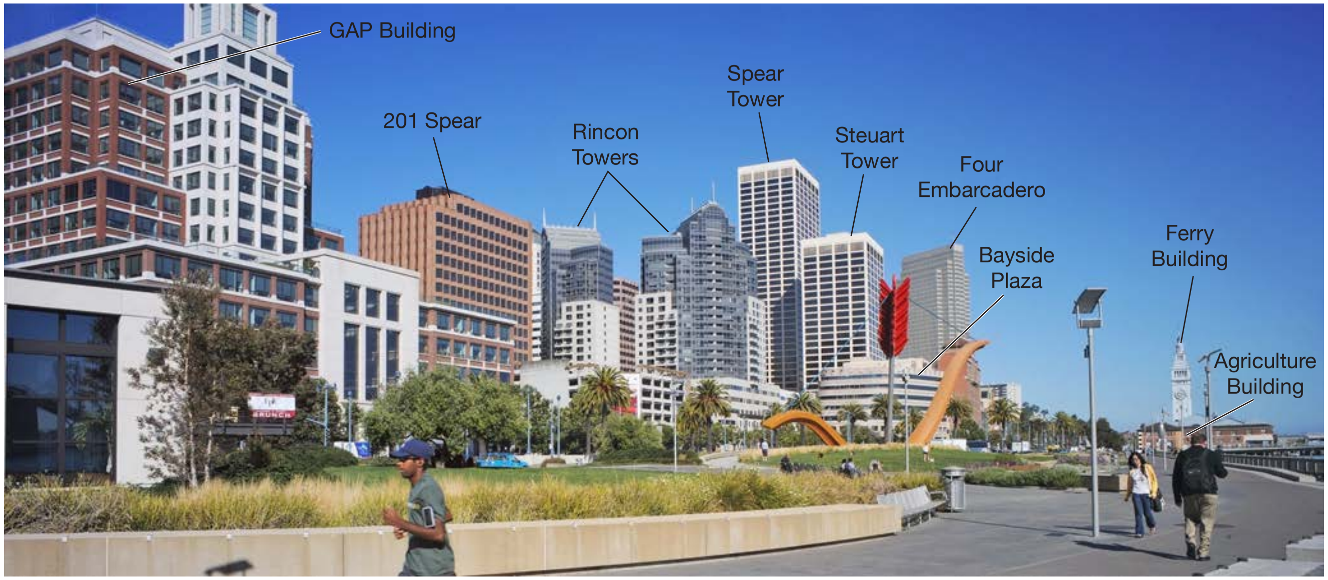
Existing

Proposed

SOURCE: Square One Productions

75 HOWARD STREET

FIGURE 4.C.4: VIEW C - VIEW FROM THE EMBARCADERO, SOUTH OF FOLSOM STREET, LOOKING NORTHWEST



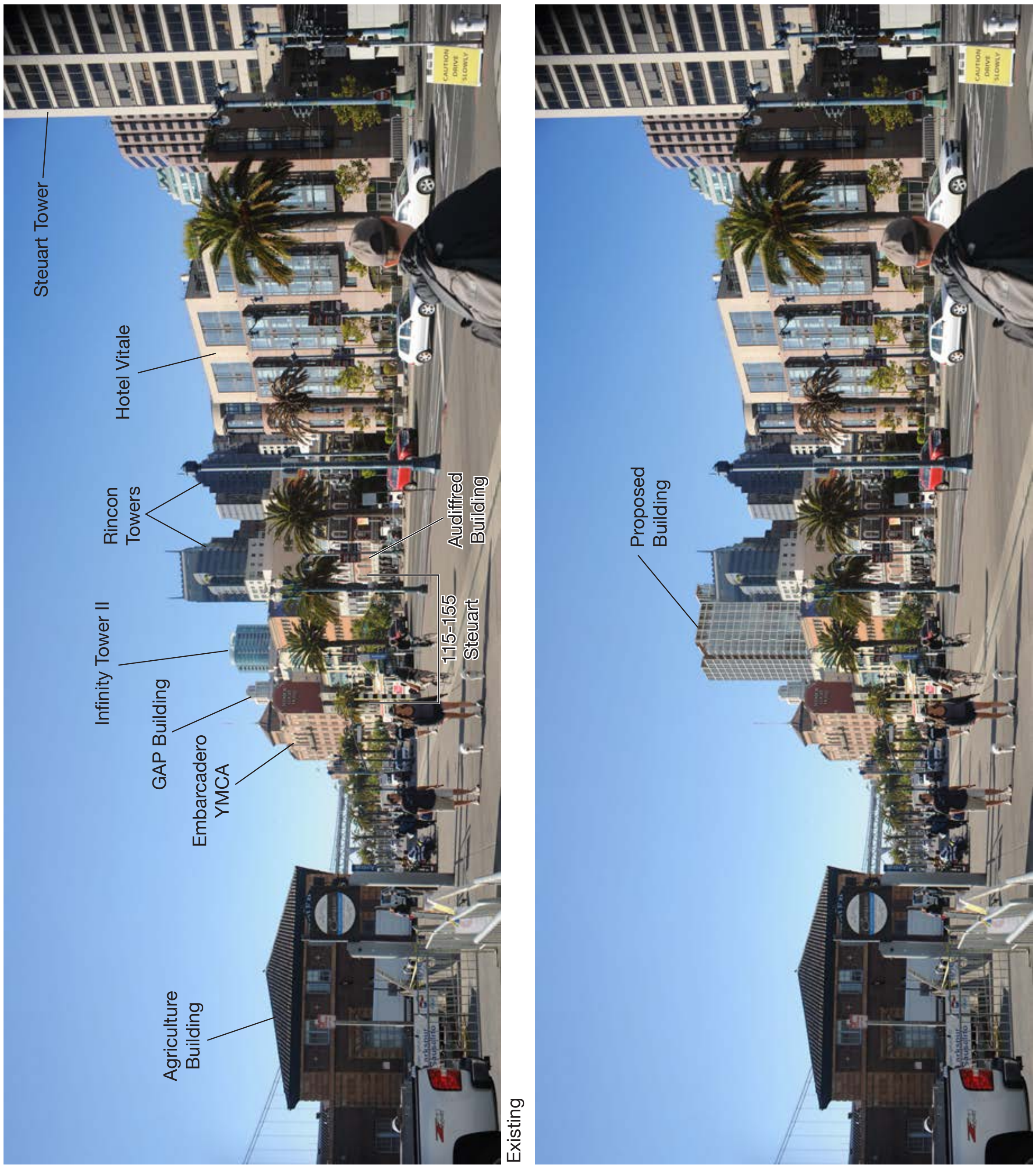
Existing

Proposed

SOURCE: Square One Productions

75 HOWARD STREET

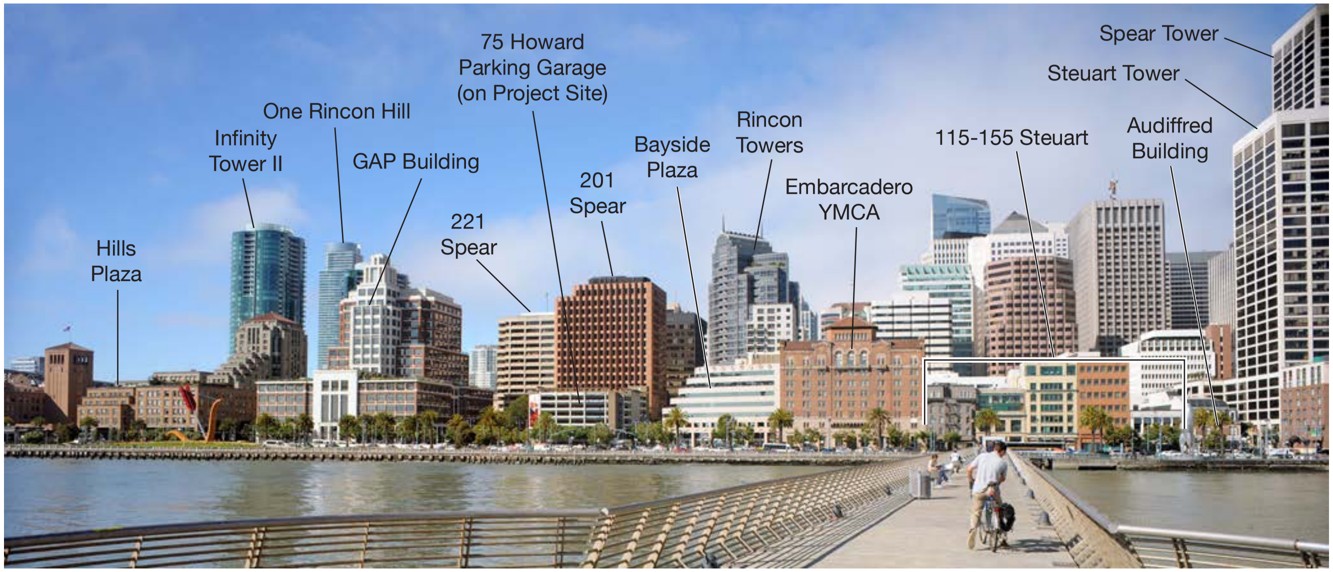
FIGURE 4.C.5: VIEW D - VIEW FROM RINCON PARK, LOOKING NORTHWEST



SOURCE: Square One Productions

75 HOWARD STREET

FIGURE 4.C.6: VIEW E - VIEW FROM THE FERRY BUILDING, LOOKING SOUTH



Existing

Proposed

SOURCE: Square One Productions

75 HOWARD STREET

FIGURE 4.C.7: VIEW F - VIEW FROM PIER 14, LOOKING WEST

existing photographic views with photosimulations of the proposed project, placed within the visual context of the project. Visual conditions under the proposed project are discussed in the Impacts and Mitigation Measures subsection, which begins on p. 4.C.16.

The project site is located at the southeastern edge of the Downtown core along The Embarcadero, and is surrounded by dense high-rise Downtown development to the west, north and south. Consequently, existing high-rise buildings at this edge are not prominent when viewed from the west, north and south when visible at all. When viewed from nearby points along The Embarcadero, however, buildings along this exposed southeastern edge of Downtown are highly prominent to pedestrians and motorists.

Figure 4.C.2: View A – View from Steuart Street, Looking South (Existing) shows the existing 75 Howard Garage viewed obliquely from the north in the vicinity of the project site. In the foreground is the podium base and east tower of Rincon Towers (24 stories, about 280 feet tall, built 1989) north of the 75 Howard Garage. Northeast of the 75 Howard Garage are buildings that line the east side of Steuart Street (left in this view): 141 Steuart Street (5 stories, about 87 feet tall, built 1907); and 155 Steuart Street (5 stories, about 87 feet tall, built 1906). Beyond the 75 Howard Garage is the Gap Building (14 stories, about 290 feet tall, built 2001), with its tower rising beyond the 75 Howard Garage.

Figure 4.C.3: View B - View from The Embarcadero at Howard Street, Looking West (Existing), shows the existing open space improvement site and the 75 Howard Garage, both on the project site, viewed across The Embarcadero in the foreground. To the south of the project site (left in this view) is the Gap Building. To the north of the project site (right in this view) is Bayside Plaza at 188 The Embarcadero (seven stories, about 104 feet tall, built 1986), with Rincon Towers rising beyond. In the background, rising beyond the 75 Howard Garage, is 201 Spear Street (18 stories, about 256 feet tall, built 1985). In the background, visible through gaps between buildings is 221 Main Street (16 stories, about 240 feet tall, built 1973). Also in the background, visible along the north side of Howard Street are 120 Howard Street (8 stories, about 136 feet tall, built 1973), 180 Howard Street (13 stories, about 177 feet tall, built 1961), and 199 Fremont in the distance about 4 blocks away (27 stories, built 2000).

Figure 4.C.4: View C - View from The Embarcadero, South of Folsom Street, Looking Northwest (Existing), shows the 75 Howard Garage rising beyond street trees along the west side of The Embarcadero. In the foreground is The Embarcadero roadway. South of the project site (left in this view) is the podium base of 75 Folsom Street (Hills Plaza, 6 stories, built 1991), and the Gap Building. Rising in the background and to the north of the 75 Howard Garage is Rincon Towers, with the Spear Tower (43 stories, about 583 feet tall, built 1976) and Steuart Tower (27 stories, about 400 feet tall, built 1976) of One Market Plaza further beyond. Four Embarcadero Center (45 stories, about 571 feet tall, built 1982) is visible in the distance (about 4 long blocks away).

Bayside Plaza and the Embarcadero YMCA building at 169 Steuart Street (8 stories, about 104 feet tall, built 1926) are visible to the northeast of the project site (right in this view). To the east of the project site (far right in this view) is Rincon Park.

Figure 4.C.5: View D - View from Rincon Park, Looking Northwest (Existing), shows the 75 Howard Garage rising beyond street trees along the west side of The Embarcadero. In the foreground is Rincon Park and the Embarcadero Promenade. South of the project site (left in this view) is the Gap Building. Rising beyond the podium base of the Gap Building is 201 Spear Street to the west of the project site. Rising beyond the 75 Howard Garage is Rincon Towers north of the project site, with the One Market Plaza Spear Tower and Steuart Tower farther north. Four Embarcadero Center is visible in the distance. Bayside Plaza and the Embarcadero YMCA building are visible to the northeast of the project site. To the northeast of the project site (far right in this view) is the Ferry Building.

Figure 4.C.6: View E - View from the Ferry Building, Looking South (Existing), shows a view southward toward the project site from an open area at the south end of the Ferry Building. In the foreground (left in this view) is the Agriculture Building, the Embarcadero Promenade, and The Embarcadero. Beyond The Embarcadero roadway are the buildings that line the west side of The Embarcadero, with taller buildings rising beyond. The Embarcadero YMCA building obscures the view of the 75 Howard Garage on the project site. The GAP Building tower rises beyond. Further north along The Embarcadero is a row of low-rise buildings with rear frontages along Steuart Street: 155 Steuart Street, 41 Steuart Street (7 stories, about 87 feet tall, built 1907), 121 Steuart Street (7 stories, about 87 feet tall, built 1984), 115 Steuart Street (2 stories, built 1910) and the Audiffred Building (City Landmark No. 7, 4 stories, built 1889). Rising beyond this row is Infinity Tower II (41 stories, 421 feet tall, built 2008) and Rincon Towers. North of Mission Street is the Hotel Vitale (8 stories, about 93 feet tall, built 2005). Steuart Tower is seen at the northern end of this view.

Figure 4.C.7: View F - View from Pier 14, Looking West (Existing), shows the 75 Howard Garage in the context of a more distant panoramic view of the buildings along the west side of The Embarcadero as viewed from the end of Pier 14. Taller Downtown buildings rise beyond. To the south is the Hills Plaza complex, with the Infinity Tower II rising beyond. Farther north along The Embarcadero is the Gap Building, with the One Rincon Hill (54 stories, 640 feet tall, built 2008) rising beyond. 221 Main Street and 201 Spear Street rise beyond the 75 Howard Garage. Bayside Plaza and the Embarcadero YMCA are seen lining the west side of The Embarcadero between Howard Street and Mission Street, with Rincon Towers and other high-rise Downtown buildings rising beyond. Steuart Tower and Spear Tower are seen at the northern end of this view.

REGULATORY FRAMEWORK

THE URBAN DESIGN ELEMENT OF THE GENERAL PLAN

The City's *General Plan* provides policies and objectives to guide urban design decisions. City decision-makers will evaluate the proposed project in accordance with provisions of relevant plans and policies. Policies of the *General Plan* related to the topic of Aesthetics are found in the Urban Design Element. The Urban Design Element calls for preserving and enhancing views and visual quality, and calls for new development to complement existing patterns of development. It requires that proposed projects take into account the surrounding urban context by integrating proposed buildings with surrounding urban patterns, and protect visual relationships and transitions with respect to older structures. Policies also promote provision of amenities, including landscaping and pedestrian areas.

The *Downtown Area Plan*, an element of the *General Plan*, generally encompasses the Downtown C-3 Zoning Districts. It contains objectives and policies that guide land use decisions in Downtown San Francisco. These objectives and policies address issues of urban design, as well as commerce, housing, open space, historic preservation, pedestrian and vehicular circulation, and seismic safety.

The *Transit Center District Plan* (TCDP) is a comprehensive plan for the southern portion of San Francisco's Financial District. The Transit Center District is generally bounded by Market Street on the north, Steuart Street on the east, Folsom Street on the south, and a line extending mid-block between Third and New Montgomery streets on the west. It therefore encompasses the project site at the eastern end of the district. The intent of the TCDP is to concentrate development density in close proximity to San Francisco's highest concentration of public transit. The TCDP included amendments to the *General Plan*, the Planning Code, and the Zoning Maps related to urban form (building height and design). Adoption of the TCDP did not result in the reclassification of the zoning, height, or bulk controls for the project site.

Port of San Francisco Waterfront Design and Access Element

The triangular open space improvement site within the project site (Seawall Lot 347-S) is within the Ferry Building Waterfront Subarea of the *Port of San Francisco Waterfront Land Use Plan*. This area extends from Pier 5 to the southern end of Rincon Park. The *Waterfront Design & Access Element* is a component of the *Waterfront Land Use Plan*, and is intended to guide the physical form of waterfront development. The *Waterfront Design & Access Element* provides guidance for the preservation and development of public access and open space, views, and historic resources, as well as architectural design criteria that will be applied to new development. Under the *Waterfront Design and Access Element*, development of seawall lots, including Seawall

Lot 347-S, must be consistent with the Public Trust,[2] and should respect the scale and architectural character of the adjacent City neighborhoods. Seawall lot development should also maintain the City street corridor views identified in the Element, including views to the Bay along Howard Street.[3] The *Waterfront Design and Access Element* includes specific design guidance for Seawall Lot 347-S, allowing "structures up to 65 feet high to create an edge along Rincon Park" and "maximum site coverage."[4]

IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

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 adopted and modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the project would result in a significant impact related to aesthetics. Implementation of the proposed project and project variants would have a significant effect related to aesthetics if the project would:

C.1 Have a substantial adverse effect on a scenic vista;

C.2 Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and other features of the built or natural environment, that contribute to a scenic public setting; or

C.3 Substantially degrade the existing visual character or quality of the site and its surroundings.

PROJECT FEATURES

Proposed Building Form

For both the proposed project and project variants, the proposed 31-story high-rise tower would consist of two main elements: a horizontal podium element, surmounted by a vertical tower element. (See Figure 2.14: Proposed North Elevation; Figure 2.15: Proposed East Elevation; Figure 2.16: Proposed South Elevation; and Figure 2.17: Proposed West Elevation, pp. 2.25-2.28.)

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2 Seawall Lot 347-S is subject to the common law public trust doctrine, as well as terms and conditions of the Burton Act, which is the trust grant from the State to the City (sometimes referred to collectively as the "public trust").

3 Port of San Francisco, *Waterfront Design and Access, an Element of the Waterfront Land Use Plan*, June 2004, p. 92.

4 Port of San Francisco, Waterfront Design and Access, an Element of the Waterfront Land Use Plan, June 2004, p. 100.

The 7-story (82-foot-tall) horizontal podium element would be built to its Howard Street (north) and Steuart Street (east) property lines, and it would be set back from the south property line by about 18 feet and from the west property line by about 3 feet. The podium element would measure about 153 feet from east to west and 116 feet from north to south. The ground and second stories would be recessed about 1 to 6 feet from the wall plane of the podium above, forming a high, continuous band of glazing at the ground floor and second floor across a portion of the north façade, all of the east façade, and part of the south façade.

The 24-story vertical tower element together with the 7-story podium would rise a total of 31 stories (348 feet tall, plus an additional 8 feet for rooftop screening and mechanical enclosures). The tower element would be nearly square in plan, measuring about 114 feet from east to west and 109 feet from north to south. It would be set back from the podium element below by about 2 feet from the podium's north façade, 23 feet from the podium's east façade, 5 feet from the podium's south façade, and 16 feet from the podium's west façade. However, floor 8 (the terrace level), the lowest floor within the tower element, would be further set back from the tower wall plane above it along the north and south façades.

The building would likely be clad in glass and stone (granite or limestone), ranging from light to medium grey.

Proposed Publicly Accessible Open Space

As part of the proposed project and project variants, a new 4,780-sq.-ft. publicly accessible open space would be developed on the open space improvement site. The open space would be bounded on all sides by sidewalks that would include landscaping and hardscape improvements; these improvements would be visually integrated with the proposed new open space.

In addition to this new open space, the project would install hardscape, landscape, and pedestrian improvements to the segment of Steuart Street south of Howard Street. This segment of Steuart Street would be narrowed, and the turnaround bulb at the southern terminus of Steuart Street would be eliminated. These modifications to Steuart Street are intended to enhance the pedestrian accessibility, size, quality, and utility of the proposed publicly accessible open space and to link this proposed open space with the existing open space of the Gap Building. The resulting enlarged area would be landscaped and have seating and may include outdoor sculptures.

APPROACH TO ANALYSIS

Design and aesthetics are, by definition, subjective and open to interpretation by decision-makers and members of the public. In determining whether an impact is significant under CEQA, the question is whether a project would affect the environment of persons in general, not whether a project would affect particular persons. A proposed project would therefore be considered to have a significant adverse effect on visual quality under CEQA only if it would cause a substantial and demonstrable negative change in the physical environment that affects the public in one or more ways listed above in this section. Changes to private views resulting from the proposed project and project variants would not be considered to substantially degrade the existing visual character of the environment. However, the effect on private views is discussed for informational purposes.

IMPACT EVALUATION

Impact AE-1: The proposed project and project variants would have a substantial adverse effect on a scenic vista. *(Significant and Unavoidable)*

This discussion describes project-related impacts on scenic vistas available along inland streets in the vicinity of the proposed project and on views of Downtown from the eastern waterfront and the Bay Bridge.

Views along Inland Street View Corridors

As shown in Figure 4.C.2: View A - View from Steuart Street, Looking South, p. 4.C.7, the proposed project's tower would be visible rising beyond Rincon Towers. The proposed project and project variants would vertically extend the existing street wall on the west side of Steuart Street and would not obstruct long-range, south-facing scenic vistas of the Bay Bridge along the Steuart Street view corridor. Together with buildings on the east side of Steuart Street, the proposed building would frame south-facing views down Steuart Street toward the Bay Bridge. Likewise, the proposed project's tower would not obstruct long-range, east-facing scenic vistas of the Bay along the Howard Street view corridor. Together with Rincon Towers on the north side of Howard Street, the proposed new tower on the south side of Howard Street would frame east-facing views along Howard Street toward the Bay and Yerba Buena Island beyond. For these reasons, the proposed project and project variants would not substantially degrade or obstruct the scenic vista along inland street view corridors and would have a less-than-significant effect on scenic vistas along inland street view corridors. No mitigation measures are necessary.

Views of Downtown from the Eastern Waterfront and the Bay Bridge

Viewed from points along the eastern waterfront and the Bay Bridge, buildings along this southeast edge of Downtown are prominent in scenic vistas of the Downtown skyline available from the eastern waterfront and the Bay Bridge. The proposed project and project variants would not obstruct a scenic vista of the Downtown (see Figure 4.C.4: View C – View from The Embarcadero, South of Folsom Street, Looking Northwest (Proposed), on p. 4.C.9; and Figure 4.C.5: View D – View from Rincon Park, Looking Northwest (Proposed), on p. 4.C.10).

The proposed project and project variants would place a 348-foot-tall tower at the waterfront edge of the Downtown core. At 348 feet tall, the proposed project and project variants would be taller than existing high-rise buildings located on the blocks immediately adjacent to the project site (Rincon Towers at 280 feet tall, the Gap Building at 290 feet tall, and 201 Spear Street at 256 feet tall) (see Figure 4.C.6: View E – View from the Ferry Building, Looking South (Proposed), on p. 4.C.11; and Figure 4.C.7: View F – View from Pier 14, Looking West (Proposed), on p. 4.C.12).

The proposed project and project variants would also be taller than the current 200-foot height limit on the 75 Howard Street building site. Please see Chapter 3, Plans and Policies, pp. 3.2-3.6, for a discussion of the proposed project's inconsistencies with plans, policies, and regulations related to urban form.

The proposed high-rise tower would be seen against the backdrop of the dense Downtown and would contribute to the variety of building heights that characterizes the Downtown core. The Downtown would continue to express the dense yet varied nature of development that currently characterizes the skyline and results in a readable and recognizable visual identity for Downtown San Francisco.

However, the proposed project and project variants would interrupt an existing pattern discernible at the southeast edge of Downtown of buildings stepping down to the water's edge. From the vantage points closest to the project site (Figure 4.C.3) that do not allow for views of nearby buildings that are taller than the proposed project, such as the Spear and Steuart Streets Towers of One Market Plaza, the proposed project would be experienced as taller than the adjacent buildings, and could be experienced as eroding, rather than reinforcing the existing pattern that characterizes the southeast edge of Downtown. From other vantage points, such as from Steuart Street looking south (Figure 4.C.2), the height of the proposed project would appear to be relatively consistent with the heights of nearby buildings.

Given the familiarity and importance of the existing views of San Francisco's Downtown core to San Francisco's identity, and the scale and prominence or proposed new development, the effect of the proposed project and project variants on scenic vistas of Downtown as viewed from the eastern waterfront would be considered significant. The proposed project would place a prominent 348-foot-tall tower at the southeastern waterfront edge of Downtown. The podium would not provide a substantial step-down transition from the tower element to the waterfront. This effect on a scenic vista is considered unavoidable because no effective mitigation measure is available that would avoid or substantially reduce the significant impact of the proposed project and project variants. Reduced height is considered in the Alternatives Chapter. However, as discussed under Impact AE-2 and AE-3 below, the proposed project would not result in a significant adverse impact on a scenic resource or on visual quality and character of the site and its surroundings.

Private Views from Nearby Buildings (Informational Discussion)

Private views are not considered scenic vistas under the City's significance criteria, but are discussed here for informational purposes. The proposed high-rise tower would obscure and/or alter some existing private views over the building site, to the extent that such views are now available from nearby buildings (most notably, but not limited to, Rincon Towers and 201 Spear Street). The proposed project and project variants would replace longer-range private views over the building site with shorter-range views of the proposed high-rise tower. The proposed change in private views could be experienced as an undesirable consequence for affected persons who have grown accustomed to existing visual conditions. The nature and experience of this change for each affected viewer would vary depending on the nature of the existing view over the project site, the position and proximity of the proposed tower within the private view, and the subjective sensitivity of the viewer. In determining whether an impact is significant under CEQA, the question is whether a project will affect the environment of persons in general, not whether a project will affect particular persons. A proposed project would therefore be considered to have a significant adverse effect on scenic vistas under CEQA if it were to substantially degrade or obstruct public scenic vistas observed from public areas. The alteration or interruption of private views is a commonly expected and experienced consequence of new construction within a densely populated urban setting. A project would be considered to have a significant impact on scenic vistas if it were to substantially degrade or obstruct public scenic vistas observed from public areas. The changes to private views resulting from the proposed project and project variants would not affect public scenic vistas observed from public areas, and therefore would not be considered a potentially significant aesthetic impact under CEQA. No mitigation measures are necessary.

Impact AE-2: The proposed project and project variants would not have a substantial adverse effect on a scenic resource. *(Less than Significant)*

As discussed above on p. 4.C.5, the project site contains no scenic resources. All excavation for the proposed project and project variants would occur below existing grade level on the site. As a result, there would be no visible topographic change at the site under the proposed project.

The proposed project is in the vicinity of two offsite scenic resources: The Embarcadero and Rincon Park. The proposed tower would replace views of the existing seven-story 75 Howard Garage, as seen from The Embarcadero and Rincon Park, with views of the proposed building. The proposed project and project variants would create new backdrop for The Embarcadero (see Figure 4.C.4: View C – View from The Embarcadero, South of Folsom Street, Looking Northwest, on p. 4.C.9) and for Rincon Park (see Figure 4.C.5: View D – View from Rincon Park, Looking Northwest, on p. 4.C.10). The proposed residential tower would reinforce the western edge of The Embarcadero and would present an active face to The Embarcadero and Rincon Park. In addition, the proposed project would improve and activate a new public open space adjacent to The Embarcadero (the open space improvement site) with landscaping and public art to improve the pedestrian environment along this segment of The Embarcadero. Therefore, the proposed project and project variants would not result in damage to a scenic resource. The impact of the proposed project and variants on scenic resources would be less than significant. No mitigation measures are necessary.

Impact AE-3: The proposed project and project variants would not have a substantial adverse effect on the visual character or quality of the site and its surroundings. *(Less than Significant)*

As discussed above under Environmental Setting on pp. 4.C.11-4.C.12, the building site is currently occupied by a 7-story, concrete parking garage, built 1976, that is utilitarian in design. As discussed on p. 4.C.12, the open space improvement site includes the Steuart Street right-of-way and a triangular lot that is currently vacant and paved with asphalt. As discussed on pp. 4.C.12-4.C.13, the visual character of the surrounding area around the project site, in terms of building height, massing, scale, materials, and architectural character, is varied.

<u>Temporary Construction Impacts</u>

Construction of the proposed project and project variants would result in intermittent and short-term aesthetics impacts due to construction activities. Construction activities that could have temporary effects on visual quality include ground disturbance, the use of heavy machinery, storage of equipment and materials, and the installation of security fencing and barriers. Such changes to the visual environment are a commonly accepted and unavoidable temporary outcome of development projects in a dense urban setting. Such conditions would exist only for a limited duration. The estimated construction period for the proposed project and project variants would extend up to 30 months. Because construction-related changes to visual character and quality would be short-lived, and the existence of a construction site in an urban setting is not considered a substantial adverse condition, they would be considered less than significant.

<u>Building Design</u>

The proposed high-rise tower would be contemporary in its design, articulated into two main elements: a horizontal podium element, surmounted by a vertical tower element. The 7-story (82-foot-tall) horizontal podium element would be built to its Howard Street (north) and Steuart Street (east) property lines. The ground and second stories would be recessed about 1 to 6 feet from the wall plane of the podium above, forming continuous band of transparent glazing at the ground floor and second floor across its Steuart Street and the east portion of its Howard Street frontages.

The 24-story vertical tower element together with the 7-story podium would rise a total of 31 stories (348 feet tall, plus an additional 8 feet for rooftop screening and mechanical enclosures). The tower element would be set back from the podium element by about 2 feet from the podium's north façade, 23 feet from the podium's east façade, 5 feet from the podium's south façade, and 16 feet from the podium's west façade. The proposed tower design would also enclose and define an edge to the proposed open space area.

The podium and tower elements would be further differentiated by contrasting cladding and fenestration treatments. The podium above the second floor at its north, west and south façades would be clad in stone (granite or limestone), ranging from light to medium grey. Windows at these facades would be "punched" into the façade plane. The east podium façade above the second floor would appear to be framed by the east edges of the north and south façades. The tower façade would be clad in glass curtain wall and feature a mullion grid pattern.

As part of the proposed project and project variants, a new publicly accessible open space would be developed on the open space improvement site, intended to improve the pedestrian environment at this stretch of The Embarcadero. The open space would be bounded on all sides by sidewalks that include landscaping and hardscape improvements and would be visually integrated with the proposed new open space. In addition to this new open space, the project would include hardscape, landscape, and pedestrian improvements to the segment of Steuart Street south of Howard Street. The resulting enlarged area would be landscaped with seating and may include outdoor sculptures.

The proposed project would replace a visually utilitarian parking garage and vacant paved areas that now occupy the project site with a new residential building and landscape scheme. . Although implementation of the proposed project or its project variants would transform the visual character of the project site and would result in a prominent new presence within the visual setting of the surrounding area, development of the proposed project and project variants would have a less-than-significant impact on the visual character/quality of the site and its surroundings. No mitigation measures are necessary.

CUMULATIVE IMPACT EVALUATION

Impact C-AE-1: The proposed project and project variants, in combination with past, present and reasonably foreseeable future projects in the project vicinity, would not make a cumulatively considerable contribution to a significant impact related to aesthetics. *(Less than Significant)*

The TCDP is a comprehensive plan encompassing approximately 145 acres roughly bounded by Market Street, Stuart Street, Folsom Street, and a line to the east of Third Street. The TCDP included height limit increases in subareas composed of multiple parcels or blocks within the

TCDP area. The TCDP increased height limits to allow for an approximately 1,000-foot-tall Transit Tower at the former Transbay Terminal site, 700- and 850-foot-tall towers north of Mission Street on specific sites within the existing 550-S Height and Bulk District, and 700- and 750-foot-tall towers along the north side of Howard Street on specific sites within the existing 450-S and 350-S Height and Bulk Districts.

Implementation of the TCDP would fill in the existing area of vacant sites and low- and mid-rise development that exists between Mission Street to the north, and Folsom Street to the south with new high-rise development. Development under the TCDP would create a new peak to San Francisco's skyline centered on the Transit Tower and would step down from the Transit Tower as called for under TCDP Policy 2.3 (Create a balanced skyline by permitting a limited number of tall buildings to rise above the dense cluster that forms the Downtown core, stepping down from the Transit Tower in significant height increments).

Figure 4.C.8: Cumulative View E – Cumulative View from the Ferry Building, Looking South; and Figure 4.C.9: Cumulative View F – Cumulative View from Pier 14, Looking West show the proposed project together with development anticipated under the TCDP. Potential development allowable under the TCDP would be visible rising in the background to the west and northwest of the project site. Under cumulative conditions, the proposed project tower would be viewed in the context of a dense and varied Downtown high-rise skyline. Implementation of the TCDP and Transit Tower, and other foreseeable Downtown development plans, would transform scenic views of San Francisco's Downtown skyline. The TCDP EIR considered the TCDP and Transit Tower, together with development under the Rincon Hill Plan and the Transbay Redevelopment Plan, and concluded that the TCDP and Transit Tower would result in a significant and adverse cumulative impact on scenic views of Downtown.[5] In the broader geographic and visual context of foreseeable projects under the TCDP and Transit Tower, the Rincon Hill Plan, and the Transbay Redevelopment Plan, the proposed project would appear within a dense cluster of existing and proposed high-rise buildings. The proposed project would conform to the overall pattern of building heights under cumulative conditions. For these reasons, under cumulative conditions, the proposed project would not contribute considerably to a cumulative impact on scenic vistas of the Downtown core.

As discussed under Impact AE-2, the proposed project and project variants would not damage an existing scenic resource. As such, it would not contribute to any potential cumulative impact on scenic resources.

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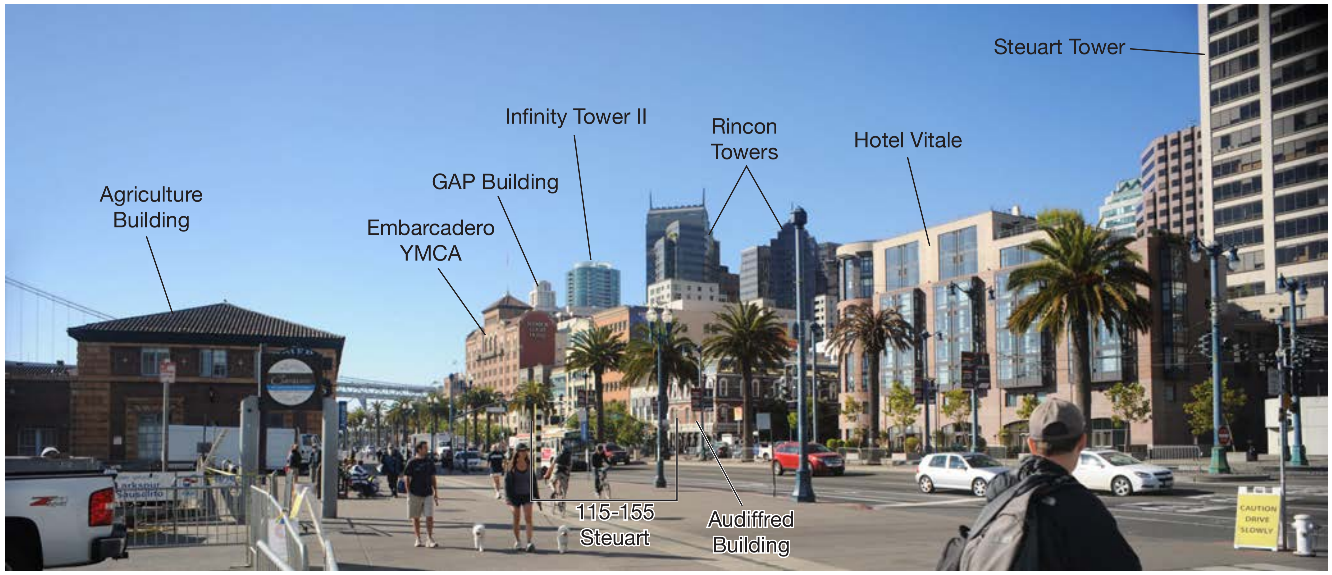
[5] San Francisco Planning Department, *Transit Center District Plan and Transit Tower Final Environmental Impact Report*, Cases No. 2007.0558E and 2008.0789E, certified May 24, 2012, p. 173. These documents are available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400.



Existing

Cumulative

SOURCE: Square One Productions

75 HOWARD STREET

FIGURE 4.C.8: CUMULATIVE VIEW E - CUMULATIVE VIEW FROM THE FERRY BUILDING, LOOKING SOUTH

Existing

Cumulative

SOURCE: Square One Productions

75 HOWARD STREET

FIGURE 4.C.9: CUMULATIVE VIEW F - CUMULATIVE VIEW FROM PIER 14, LOOKING WEST

As discussed under Impact AE-3, the proposed project and project variants would not degrade, but would enhance the visual quality of the site and its surroundings. As such, the proposed project would not contribute to any potential cumulative impact on visual character and quality.

For these reasons, the proposed project and project variants would not make a cumulatively considerable contribution to a significant cumulative impact related to Aesthetics. No mitigation measures are necessary.

D. CULTURAL AND PALEONTOLOGICAL RESOURCES

INTRODUCTION

Section D, Cultural and Paleontological Resources, describes and analyzes the potential for the presence of archaeological resources within the project site. As discussed in Appendix A, the Initial Study, pp. 53-54, concluded the existing parking garage is not an historic architectural resource, nor is it within a historic district, and therefore the proposed project and proposed project variants would not have a substantial impact on an historic architectural resource under CEQA. Therefore, this subtopic is not discussed in the EIR.

The Initial Study, pp. 57-59, also determined that any risk of disturbing paleontological resources would be sufficiently mitigated with Mitigation Measure M-CP-3, which calls for a qualified paleontologist to implement an approved Paleontological Resources Monitoring and Mitigation Program (PRMMP). Implementation of the approved plan for monitoring, recovery, identification, and curation under Mitigation Measure M-CP-3 would ensure that the scientific significance of any resource present at the project site would be preserved. This mitigation measure was determined to reduce the potential impacts of the proposed project and variants such that they would not cause a substantial adverse change to the scientific significance of a paleontological resource. Since this impact was determined in the Initial Study to be less than significant with mitigation, the subtopic of paleontological resources is not addressed in this EIR.

The Initial Study concluded that an EIR would be necessary to review the potential for encountering subsurface archaeological artifacts, and the archaeological resources subtopic is discussed below. This section summarizes and incorporates the results of the *Transit Center District Plan Archaeological Research Design and Treatment Plan*, and the *75 Howard Street Addendum to the ARDTP for the Transit Center District Plan Area* for the project site.[1]

ARCHAEOLOGICAL RESOURCES

This EIR section provides a context for evaluating the significance of archaeological resources that may be encountered, evaluates the potential impacts on archaeological resources, and provides mitigation measures that would avoid or minimize potential impacts on archaeological resources. The Impacts discussion in this section also considers whether the proposed project in

[1] Far Western Anthropological Research Group, *75 Howard Street Addendum to the Archaeological Research Design and Treatment Plan for the Transit Center District Plan Area*, San Francisco, California, December 2012 ("*75 Howard Street Addendum ARDTP*"). A copy of this document is available for public review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2011.1122E. As discussed in Chapter 2, Project Description, the project area is composed of both one block within the Transit District Center Plan and a smaller triangular, proposed open space lot to the east which, while not in the Transit District Center Plan, was included in the *75 Howard Street Addendum*.

combination with other reasonably foreseeable development projects in the vicinity of the project site would contribute to cumulative environmental impacts related to archaeological resources.

The research and recommendations of the *75 Howard Street Addendum ARDTP* are the basis for the information and conclusions of this EIR section with respect to archaeological resources.

ENVIRONMENTAL SETTING

Historic Context

In order to predict the archaeological property types that may exist within the project site, and to provide a context for evaluating the significance of archaeological resources that may be encountered, a geologic context and a historic context for prehistoric era and historic era activities and settlement in the vicinity of the project site is provided below.

Geologic and Natural Setting

The modern elevation and topography at the project area is the result of mainly cultural processes, as the site was originally under the San Francisco Bay in Yerba Buena Cove.[2] The project site is underlain by artificial fill ranging from 10 to 20 feet below ground surface (bgs). The historic fill is underlain in some places by marine deposits 10 to 15 feet thick, but is primarily underlain by 30 to 60 feet of Bay Mud. Bedrock is 60 to 80 feet bgs sloping down to the east.

The sedimentary Colma Formation was not encountered during the coring samples near the project site, suggesting that it was not deposited in the area or that it was removed by erosion due to channel incision or rising sea levels.[3]

The project site during Native American inhabitation of the area in the 17th and 18th centuries was not habitable, as it was submerged under San Francisco Bay. In the present day, the body of fresh surface water closest to the project site is Mission Creek (China Basin), located over a mile to the southwest. It is likely that prehistoric residents of the South of Market area used groundwater in natural springs or hand-dug seeps. Groundwater resources in the area, as noted in early Gold Rush accounts, were shallow and potable.

Prehistoric Period

Current archaeological evidence suggests humans have continuously occupied California since 13,500 years Before Present (B.P.), although no sites older than 6,000 years B.P. have been

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[2] Before the filling of Yerba Buena Cove through the latter half of the 19th century, the original shoreline of Yerba Buena Cove encompassed an area that is now occupied by much of San Francisco's downtown Financial District, east of Montgomery Street, and east of First Street.

[3] *75 Howard Street Addendum ARDTP*, p. 39.

recorded in the San Francisco Peninsula. The human presence in California is described in three periods: the Pleistocene-Holocene Transition (13,500–9,000 years B.P.); the Middle Holocene (9,000–4,000 years B.P.); and the Late Holocene (4,000 years B.P. to present). These periods are characterized by major regional shifts in settlement patterns, technology, economy, and trade that are evident in the archaeological record.

Pleistocene–Holocene Transition (13,500-9,000 years B.P.)

Sites from the Pleistocene-Holocene transition have been found in Northern California, but no Pleistocene-Holocene transition sites have been found in San Francisco or its immediate surroundings. More than 400 fluted projectile points, exhibiting a high degree of variability, have been found throughout California. The early fluted-point-wielding Californians were probably a sparse population of semi-sedentary bands of hunter-gathers who lived for the most part in open-air sites, although they also lived in rock shelters in some areas. Deep refuse deposits dating to the Early Holocene are absent throughout California, suggesting that people used locations only briefly and then abandoned them, or reoccupied areas for short recurrent periods. They hunted large and small mammals, as well as waterfowl. Shellfish were a staple, though their use was less predominant during the Early Holocene than it was in later times. Seeds were likely collected. Early Holocene sites contained handstones and milling slabs, minimally modified cutting and scraping tools, and other chipped stone tools, as well as marine shellfish and the remains of a variety of mammals.

Middle Holocene (9,000-4,000 years B.P.)

After about 8,000 B.P., a general shift in subsistence occurred with specialized technology and exploitation of new ecological niches. In the absence of big game food sources, people began to exploit more diversified animal species and shifted to an increased reliance on plants and seeds. This resource diversification required seasonal migrations in order to access different environments throughout the year. Consequently, the “tool kit” of prehistoric peoples became more specialized, growing to include varied methods of food processing. The diverse habitats and year-round availability of food in Central California also contributed to the shift to exploitation of resources other than big game. The increasingly prominent role of seed collecting is reflected in the archaeological record by large numbers of food-grinding implements. As the use of acorns became more predominant, heavy, deep-basined mills and handstones came into use.

Late Holocene (4,000 years B.P. to Present)

Beginning around 4,000 B.P., the climate began to shift from warm and dry to cooler and wetter conditions, causing an adjustment to new environmental conditions. This period is characterized by further niche specialization, a refinement of various technologies, and specialized exploitation of plant and animal species. Many sites dating to the Late Holocene in the San Francisco Bay region are shellmounds, midden sites containing large quantities of mollusk shells. Sites dating to the Late Holocene have been found in San Francisco, primarily in the South of Market region. These sites are all multi-activity shellmound and midden sites.

Prior to the arrival of the first Europeans, the project area was situated offshore from the territory occupied by the Ohlone people, who were referred to as the Costanoans by the Spanish explorers and settlers of the region (an Anglicized version of *Costeños,* the Spanish derivative for "coastal people"). The area of the San Francisco Peninsula between the San Francisco Bay and the Pacific Ocean has been attributed to a linguistic subgroup of the native Ohlone people. Ohlone social structure was complicated, organized into at least 50 distinct tribelets, united through language, trade, and intermarriage. The Ohlone lived primarily in fixed villages, on a diet consisting of acorns, nuts, grass, seeds, berries, fish, and mollusks such as mussels and abalone from San Francisco Bay and the Pacific Ocean. Other animals included in the diet were elk, pronghorn, deer, salmon, perch, ducks, geese, quail, and other waterfowl. Ohlone material culture included woven baskets, animal skin aprons or capes, shell beads, abalone pendants, and bone and wood earrings. Houses were dome-shaped and built of willows and tule.

When the Spanish arrived in the San Francisco Bay region in the late 1700s, the Ohlone numbered at most around 10,000, but by approximately 1810, much of the aboriginal population, along with most of their traditional culture, had changed forever in the face of European encroachment and disease, warfare, displacement, and, above all, the California mission system.

Historic Period

This subsection presents a history of San Francisco as relevant to the project site from the time of the first European explorers to the present. A history of development within the project site itself is revealed by archival research, including demographic records, historic maps, and newspaper accounts, and is discussed below.

<u>Spanish, Mexican, and Early American Periods (1775-1848)</u>

In November 1769, the first known party of European explorers, headed by Don Gaspar de Portolà, encountered San Francisco Bay. From 1769 until 1776, several additional exploratory expeditions were mounted with the intention of further surveying the region and, at the same time, laying the groundwork for the foundation of a Spanish settlement at the port of San Francisco. In 1776, the Presidio was officially founded on a site near the Golden Gate, in a strategic position for an artillery battery at the narrowest part of the harbor entrance.

The first mass was celebrated at the first Mission Dolores chapel in June 29, 1776. During the Spanish era in San Francisco, Mission Dolores grew to include numerous structures, most of which clustered around the church and its immediate vicinity. By 1832, it is estimated that the Bay Area Native American population had declined by 80 percent during the half-century since permanent non-native settlements were founded on the San Francisco Peninsula. Native villages had been abandoned and the people had relocated, either voluntarily or by compulsion, to the various Franciscan missions that had been established throughout the region. Other people escaped to the hinterlands to avoid the settlers and soldiers.

Trade between the Spanish and later Mexican territory of Alta California (a region that later became present-day California, Nevada, and parts of other western states) and nations other than Spain was forbidden, although it occurred on the underground market.

Mexican Period

Upon gaining its independence from Spain in 1822, Mexico began to encourage trade within the Bay region by opening the port to all international ships. As a result, the number of vessels entering the Bay increased considerably. Most of the ships came from New England ports and visited the Bay chiefly to acquire hides for the growing leather industry on the East Coast of the United States. General practice was for these seafaring vessels to dock at Yerba Buena Cove and then send out smaller launches to various ranchos and missions around the Bay for actual trading activities. Often, however, boats from the missions approached the anchored ships and engaged in business there.

The new Mexican government relaxed immigration laws in 1830. As a result, many of the newcomers to California in the 1830s and 1840s were either Europeans or immigrants from the eastern seaboard of the United States. By 1834, in recognition of the growing importance of Yerba Buena Cove in San Francisco Bay as anchorage for foreign ships, Alta California Governor José Figueroa had authorized the creation of a commercial town and trading post on the shore of this popular port.

In 1833, Governor Figueroa ordered that the California missions would be “secularized,” or disbanded, and mission lands would be dispersed. After secularization, the missions and former mission lands were supposed to be granted to the Native American neophytes. Instead, Mexican authorities encouraged wealthy families to move to California and develop enormous cattle and horse ranchos by offering generous land grants. Most of the Native Americans disappeared from the missions, while many of the Spanish residents who lived at the mission during this time used the opportunity to apply for grants of land formerly held by the government. Secularization, liberal trade laws, land grants, and immigration laws that were relaxed in 1830 brought many newcomers to California in the 1830s and 1840s, particularly Europeans or emigrants from the eastern seaboard of the United States.

Yerba Buena grew steadily, but slowly, in the late 1830s and early 1840s. A road, known throughout the mid-19th century as the Plank Road, which linked Yerba Buena with the settlement near Mission Dolores, was built in 1838.

Early American Period

On July 8, 1846, California officially came under American jurisdiction when a landing party from the sloop-of-war *Portsmouth*, under the command of Captain John B. Montgomery, raised the American flag to the top of the flagpole in the town's plaza, thereby claiming California for the United States. At the time, Yerba Buena's 200 permanent residents occupied some 50 buildings scattered throughout the Yerba Buena Cove area. Following the American seizure of California, the town of Yerba Buena began to grow rapidly. In 1848, on the eve of the California Gold Rush, Yerba Buena's population had grown to slightly more than 800 individuals who occupied approximately 200 structures. The City was to undergo one of the most dramatic and unprecedented explosions of population and building ever recorded.

The Gold Rush Period (1848–1859)

Within months of the initial gold discovery at Sutter's Mill in 1848, the once inconsequential town of Yerba Buena (now formally renamed San Francisco) was quickly transformed into what has been called an "instant city." During the five-year span between 1849 and 1854, San Francisco was the scene of an unprecedented boom in population and construction. During the summer of 1849, there still had been no grading, planking or paving of any of the streets. The wet winter of 1849 caused people to think about the value of civic improvements. Official street grades were established in November 1850 and major improvements to San Francisco's expanding thoroughfares began.

The population boom accompanying the Gold Rush prompted the first major settlement of the South of Market area. With the exception of the cluster of structures near Mission Dolores and several buildings belonging to the Bernal Rancho, located in an area to the south of the mission, there were no structures south of Market Street before 1849. In 1850, "Happy Valley," an early encampment of adventurers who were awaiting the opportunity to journey to the gold fields, was nestled among the sand dunes to the south of Market Street, extending westward from the Bay's shoreline near what today is the intersection of First and Mission streets.

San Francisco's first industrial activity, iron foundering, began South of Market during the height of the California Gold Rush era. The pioneering iron foundry was the Union Iron Works, which, as early as 1849, was located at the northeast corner of First and Mission streets, six blocks from the project site. Once established, this and various other South of Market foundries grew at a rapid pace and were soon supplying the entire west coast of the United States with mining equipment, heavy machinery, and other manufactured goods. The population of the South of Market region steadily increased throughout the Gold Rush era as people sought and found employment in the iron foundries and nearby Rincon Point shipyards. In 1850, several water lot owners began building out over the water on piles or piers. San Francisco's Gold Rush building boom peaked in 1853, followed by a serious economic depression, declining gold production, and bank failures in 1857.

As late as 1853, fill activities were still concentrated north of Market Street. South of Market, the only filled area at this time was the block bound by Market, First, Mission, and Fremont, and the north half of the block on the south side of Market between Fremont and Beale. This progress is shown on the Coastal Survey Map published that year. The 1853 U.S. Coast Survey map depicts the project area located in the middle of Yerba Buena Cove. The process of filling in the cove began in 1849 with the submerging of abandoned ships in the cove. In the years that followed, individual lot owners built on piers or piles over the water, and others began to fill in the Bay using the sandy hills in the area. After the cove was filled, the project site was situated at six to nine feet above sea level. While sand made up the bulk of the fill material tossed into the Bay, any available solid material sufficed, including trash, building rubble, and hulks of abandoned Gold Rush-era ships.

Grading and filling activities accelerated after 1853, following the adoption of the City's second system of street grades, replacing the initial grades established in 1850. The City was forced to reset the grades because filling of Yerba Buena Cove had pushed the waterfront more than 300 meters east, thus making it necessary to raise the levels of city streets in order to facilitate adequate drainage. These new grades, nicknamed the Hoadley Grade after the City Engineer who prepared the survey, set the base (zero) elevation at 6.7 feet (2.04 meters) above the ordinary high water mark on a wooden pile at the boat stairs at Pacific and Davis streets. Although the boat stairs no longer exist, the city grade is still computed from this point.

By 1857, the publication date of the next Coastal Survey map, the filling of Yerba Buena Cove south of Market Street had pushed east to the Beale Street alignment, with the exception of a small lagoon at Mission and Fremont streets and a larger one at the foot of Howard Street. Fingers of fill extended even beyond Beale Street as far east as Main along Market, Mission, and Folsom streets. In 1857, much of the cove still remained unfilled, but it was entirely enclosed: Steuart Street, with its many wharves extending into the open waters of the Bay, completely bridged the cove from Market Street south to Folsom. Within the confines of the cove, Main Street nearly bridged the inlet, with only a small gap at the foot of Mission Street. The Coastal Survey map shows the 350 Mission, Transit Tower, and 171-181 Fremont Project Parcels as completely filled by that time.

Residential pockets began to develop in the South of Market area during the early 1850s. One study of the neighborhood's demographics in 1857-1858 estimated that nearly 90 percent of the permanent residents within the area bounded by Market, Mission, Steuart, and Second streets were working class, and that "in the portions of the city surrounding this great congregation, the workingmen predominated by three to one."

Interspersed among and surrounding the residential pockets in the early to mid-1850s were several civic, public, and religious institutions. The industrial character of South of Market and the Plan Area also emerged during the early Gold Rush era. Within a few scant years, the neighborhood was dotted with a multitude of foundries, lumber and flour mills, shipyards, and warehouses, particularly near the beach along First Street between Mission and Folsom. The Market Street wharf area became very important for shipping manufactured goods as well as raw materials.

In 1859, the US Coast survey map shows the cove filled, but no development other than the docks. After the cove was filled, the area was inhabited with numerous structures, almost entirely wood-framed, that contained various small businesses and boarding houses. Businesses catered to the maritime industry and included ship riggers, liquor stores, saloons, and storage yards for lumber and coal. Many proprietors or employees of these businesses lived at the same address as their place of work. While the small businesses change hands frequently, some businesses remained for over 20 years (e.g., Simmons & Co. Rigging and White Brothers Hardwood).

<u>South of Market Matures (1860s-1906)</u>

During the early 1860s the South of Market area witnessed the concurrent rise in heavy industry and the exodus of many of its wealthiest residents. After the 1860s, the permanent, mixed-use character of South of Market was still somewhat segregated—light and heavy industry was concentrated near the harbor; retail establishments, churches, and schools were aligned more or less with Market Street; residences were scattered throughout the neighborhood.

The City built and extended sewer lines in step with land-filling activities and street improvement. Redwood sewers were located beneath Howard, Mission, and Market streets east of Fremont by 1865, while the brick sewers covered a large portion of the grid west of Fremont. All major streets in the Plan Area between Third and Fremont had brick sewers before 1876, as did Stevenson, Jessie, and Minna streets. The Tehama Street and Natoma Street sewers were brick between First and Second streets, but wooden west of Second Street by the mid-1870s as well. At this time, the City Surveyor proposed expansion of the system to include new pipe sewer lines for the former water lot areas along Main, Spear, and Steuart streets.

By the end of the 1870s the population of the Plan Area was predominantly of Irish and German stock, and these two ethnic groups remained in the majority until the 1906 earthquake. It appears that the Irish were overwhelmingly Catholic and members of the Democratic Party, while the Germans were nearly all Protestants and Republicans. Both groups included a large force of skilled and unskilled laborers, most of whom worked in the various South of Market industries.

By the 1870 and 1880s, land use patterns were clearly segregated and firmly established, with First Street—the original shoreline—marking the dividing line between industrial on the east and commercial and residential on the west. On the industrial side and concentrated south of Mission and west of Main were iron, copper, and other metallurgical foundries. Surrounding the foundries were factories and light manufacturers, warehouses, the gas works, and lumber mills, the latter being located primarily between Main Street and The Embarcadero (Front Street). West of First Street, on the south side of Mission to Folsom Street, was the residential sector. The blocks north of Mission and fronting on Market Street formed a commercial district comprised primarily of hotels, retail shops, and wholesalers. During the 1890s and after the turn of the century, most of the South of Market area was still predominately inhabited by small business and working-class residents. Many houses built in the 1860s had been torn down and replaced with larger lodging and boarding houses or commercial and light industrial buildings.

By the end of the 19th century, the White Brothers Hardwood Lumber House and Simpson Lumber Company's Yard occupied the majority of the project block. The corner of Howard and Steuart streets still had a ship rigger business, lodgings, and saloons. The number of sailors temporarily boarding in the general area of this block was well over 2,000. More than 500 resided at 6 Howard Street (the northwest corner of intersection of Steuart and Howard). After the 1906 earthquake, the land use of this northwest corner changed very little, unlike much of the City. The ship riggers' facility vacated, but the stores and saloons remained. The lumber yards were abandoned or replaced by stables, coal yards, and machine shops. Before 1913, addresses along Howard Street range from 11 to 43, and appear as odd numbers.

The 1906 earthquake and fire devastated many areas of the City, but perhaps none more profoundly than the industrial South of Market. The severe damage sustained to its unreinforced brick buildings, as well as timber-frame buildings, during the earthquake was substantial, and neither the weakened structures nor the surviving buildings could withstand the fires that followed. An estimated 28,800 buildings were destroyed in the conflagration, covering an area measuring almost five square miles.

South of Market in the Post-Earthquake Era

By the time of the fifth anniversary of the quake, the City had issued 32,241 building permits to replace damaged or destroyed structures. The nearly total devastation followed by rapid reconstruction means that buildings that exist in the South of Market area have distinct characteristics, one of which is the age of the resources. There are almost no buildings that pre-date 1906. The nearly complete disappearance of family dwellings is one of the most striking changes to the South of Market area. The fires completely obliterated these neighborhoods, permanently driving out most of the families who lived there. The population in South of Market dropped from 62,000 in 1900 to 24,500 in 1910; of those that remained, nearly 80 percent were male, and almost all lived in residential hotels, boarding houses, or flats above places of business.

The new construction included far fewer timber structures. Most of the new buildings were reinforced concrete warehouses and factories, although brick was still used for many buildings; steel-frame structures sided in corrugated metal were also relatively common. Although the construction itself had changed, the area along the northern half of Second Street continued to be known as a wholesale center that shared space with other small industrial business like printing, binding, or garment factories through the 1930s.

Between 1913 and 1949, the project block underwent more changes. Saloons and lodgings on the project corner were demolished, and replaced with a freight depot and storage yard built after 1938. The remaining portion of the block was made up of various industrial manufacturing plants and a service station. By 1949, the addresses along this block on Howard Street still appear as odd numbers, but range from 51 to 99.

New infrastructure introduced into the South of Market area when the San Francisco-Oakland Bay Bridge was built in the mid-1930s produced a large number of historical resources in the South of Market area. The bridge was anchored in Rincon Hill and its major viaduct built from Rincon Hill to a touchdown point at Fifth Street. The bridge originally carried a trolley line, known as the Bridge Railway, on its lower level from Oakland to the Transbay Terminal Building on Mission Street. The rail system allowed passengers from East Bay lines such as the Key System, Southern Pacific, and Sacramento Northern to connect with various San Francisco municipal lines. Once it reached the San Francisco side of the bridge, this electrified rail line was supported on a series of elevated structures arranged in a large "loop" that brought trolleys from the bridge to the terminal and back without interfering with City street traffic.

The rail system has since been removed and both the terminal and ramps converted for use by uninterrupted bus connections that continue to serve the eastern side of the Bay. This conversion was part of the general reconfiguration of bridge traffic in the late 1950s and early 1960s that ended train service and established one-way automobile and truck traffic on each level of the bridge. Vehicle access provided by the Bay Bridge reoriented the distribution system for goods in the Bay Area, diminishing the importance of San Francisco's port and railroad connections and ultimately spelling the end of this area as the prime warehousing and industrial district for the region. Businesses such as electrical and industrial supply houses, grocery wholesalers, and clothing manufacturers still operated successfully in the South of Market area, but fewer and fewer companies saw the need to maintain or open branches in San Francisco. By the time of the Great Depression of the 1930s, new branches were rare throughout the Bay Area.

Types of buildings of the South of Market area reflected this evolution of land use. Larger commercial buildings and offices crowded around the northern boundary at Market Street, and wholesale operations and loft industries were arranged along Second Street. The economic slowdown of the 1930s, followed by the limitations on civilian construction during the war, resulted in very little new construction in the South of Market area during this period. By 1939, however, rail lines associated with the San Francisco-Oakland Bay Bridge were completed.

After World War II, South of Market foundered and many of the buildings suffered from vacancies and neglect. Developers considered several plans for the area over the years, including Ben Swig's 1954 "San Francisco Prosperity Plan" that proposed a baseball park, high-rise office buildings, and huge parking facilities for what is now Yerba Buena Center, but there was strong community opposition to the type of "redevelopment" that would basically destroy entire blocks of existing businesses and residences. The conflict slowly worked its way through the courts, and even though Judge Stanley Weigel ordered in 1959 that projects must include between 1,500 and 1,800 affordable units for people displaced by the work, development was delayed by legal appeals through the mid-1970s.

In the 1960s most of the block was cleared for the Embarcadero Freeway, and the remainder became a parking lot. In 1975 a parking garage was built on the project corner. In 1986, an 18-story office building was built on the corner of Howard and Spear Street, and in 2000, a 15-story office building was built along Folsom Street between Spear and Steuart streets. Parking lots still remain between the parking garage and the newest office building.

ARCHAEOLOGICAL CONTEXT

Far Western performed a records search on August 8, 2008, at the Northwest Information Center at Sonoma State University in Rohnert Park, California, to identify archaeological studies of nearby sites.[4] Six sites were identified in the quarter-mile radius of the project site, but none were substantial enough to be formally recorded. The site closest to the project site, unearthed during construction of the Rincon Center development across Howard Street, revealed 19th century artifacts associated with Chinese laundry and boarding houses. No prehistoric sites were located within the search area. The nearest prehistoric site is 750 meters to the southeast. All are situated in sand dune settings and two of these have recently been determined eligible as part of a

[4] The original search was performed for the TCDP; the Planning Department determined that a new records search was unnecessary as the first search reviewed the applicable area on and around the project site.

National Register District. Notably, they were designated eligible for the National Register of Historic Places under Criterion A, as "associated with events that have made a significant contribution to the broad patterns of our history" as well as under Criterion 4 (Information Potential).[5] They are considered to represent elements of a multi-village community network that was clustered around the shore of Mission Bay.

Numerous previous archaeological projects have been carried out within the TCDP records search area that encompasses the project parcel. These studies have included archaeological surveys, treatment plans, and archival research prior to new building construction; archaeological testing reports for building demolition and construction; monitoring; or data recovery. Recently, there have also been a number of small-scale studies, typically for cell towers, that include consideration of potential cultural resources.

Prominent projects within the larger TCDP records search area include the Yerba Buena Center project; the SF-480 terminal separation rebuild project; the San Francisco-Oakland Bay Bridge West Approach replacement project; the Central Subway Project; and excavations at several prehistoric shell midden sites (SFR-113, SFR-114, and SFR-175).

These projects have demonstrated that a range of archaeological resources, including both prehistoric and historic-era sites, have the potential to be preserved below the urban landscape within the South of Market area. Determining the likelihood of particular sites being preserved on individual parcels depends on the natural setting, the parcel's land-use history, and the cut-and-fill history of late 19th and 20th century construction events.

Historic-Era Archival Investigations

A number of primary historic-era maps were consulted to understand previous land use at 75 Howard Street. In particular, they included Sanborn Fire Insurance maps, US Coast and Geodetic surveys, plat maps, and the 1962 Location of Known Gold Rush Ships compiled by the San Francisco Maritime Museum. Other relevant primary references include historic-era photographs, City directories, municipal reports, and limited review of contemporary newspapers.

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5 The National Register is a listing of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the Federal, State, or local level. The National Register includes four evaluative criteria to determine eligibility of a resource. Resources are significant under the National Register of Historic Places (NRHP) if they are properties "that are associated with events that have made a significant contribution to the broad patterns of history" [Events]; or "that are associated with the lives of persons significant in our past" [Persons]; or "that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction" [Design/Construction]; or "that have yielded or may likely yield information important in prehistory or history" [Information Potential]. The eligibility criteria for inclusion in the California Register of Historical Resources are closely based on the NRHP eligibility criteria.

Previous cultural resource studies that contain collations of archival research were also consulted. Both primary and secondary sources are useful for establishing detailed land use histories, as well as documenting changes to the project area during the historic era that may have affected the archaeological record.

Primary sources of information come from the San Francisco History Center at the San Francisco Public Library, San Francisco Planning Department, and San Francisco Maritime Museum. Review of online sources of digitized historic-era documents is critical to understanding past land uses.

Geoarchaeological Investigations

Background research on the potential for buried prehistoric archaeological sites relied heavily on existing knowledge of the geological formations underlying the TCDP area. Selected historic-era maps provided a unique glimpse into the natural environment prior to major development that has obscured every natural surface in the vicinity of the current project area. In particular, these maps identify how large portions of the TCDP area are now situated within what was once Yerba Buena Cove, and the degree to which nearby dunes were leveled.

The previous geoarchaeological investigations for the TCDP area drew on various sources to characterize the geology of the area. These include a previous geoarchaeological investigation in the vicinity that provided insight into the nature and timing of geological formations underlying the TCDP area and geotechnical analysis and preliminary geological cross-sections of the TCDP area by Treadwell and Rollo that identified the general depth and nature of geological formations.

Native American Consultation

For the TCDP area, Far Western contacted the Native American Heritage Commission on July 8, 2008, and requested a search of their Sacred Lands files to determine if there were known cultural sites within or near the Area of Potential Effects for the TCDP Area. As the 75 Howard project area is along the eastern edge of the TCDP area, and information was solicited within the past five years, a new Sacred Lands files search was not requested. On July 22, 2008, the Commission responded with regard to the Transit Center District project, stating that no Native American cultural resources were reported from the Sacred Lands file records search.

In 2008, Far Western also requested a list of interested Native American groups and individuals. All six contacts on that list were sent letters on April 30, 2009, requesting their input on the proposed project. Mr. Andrew Galvin responded on May 7, 2009, requesting that a Native American monitor be present during excavations, given the considerable number of prehistoric sites that have been previously documented in the area. Ms. Anne-Marie Sayers responded

May 27, 2009, requesting a Native American monitor be present during any testing or data recovery excavations at prehistoric sites. No other responses were received.

PRIOR GROUND DISTURBANCE WITHIN THE PROJECT AREA

An 1853 map still shows the site more than three feet below the waterline. By 1859, it was dry land, but without development. Between 1860 and 1870, residences were constructed, and the decade after 1870 saw the construction of maritime trade buildings and saloons, mostly one- to two-story wooden structures. The 1906 Earthquake leveled the area, with only the White Brothers Lumber Yard surviving. The area was reconstructed along similar lines with the same style of wooden structures that preceded the quake. By 1939, all residences had left the area, and by1949 the area had become a parking lot. In the 1960s, the Embarcadero Freeway was constructed, and in 1975, the current parking structure at 75 Howard was built. Since prior construction did not include structures with basements, there is a relatively high probability that any pre-1906 deposits have been capped by existing structures and landforms.

ARCHAEOLOGICAL PROPERTY TYPES THAT MAY BE PRESENT WITHIN THE PROJECT SITE

The *75 Howard Street Addendum ARDTP* identifies the likely types of properties that might be encountered in a project parcel. Archaeological results from nearby provide much of the basis for discerning the range of prehistoric property types that may be encountered within the project parcel. Potential property types, based on the material remains associated with individual sites, include middens, artifact and/or ecofact scatters, burial complexes, isolated artifacts or features, and re-deposited prehistoric material.

Prehistoric Era Property Types

<u>Middens</u>

Middens are accumulations of anthropogenically enriched sediment that generally have stratigraphy; in other words, discrete episodes of occupation, trash dumping, and other daily activities that can be distinguished within the midden. Middens often include features such as hearths, pits, house floors, and burials. The presence of distinct strata and features are highly informative for a variety of archaeological research questions. Burials are often concentrated within a small portion of midden, effectively creating a cemetery area. Sometimes residential architecture is present within the main midden deposits; other times structures are situated near but outside the midden area. Non-residential architecture (such as meeting houses, dance floors, and sweat lodges) are typically set away from the main occupation area, and other features, such as roasting pits, are often clustered around the margins of the midden.

Middens are the most common sites documented on the northern San Francisco Peninsula, and most are referred to as shell middens owing to the high frequency of shellfish contained within them. Middens often vary greatly in size and thickness. The numbers of years that are represented by midden accumulation, the range of activities that were carried out, and the season of occupation can vary greatly between sites, and their interpretation requires problem-oriented research. The largest and thickest shell middens (such as SFR-114–more than 1,500 square meters in area and up to 1.1 meters deep) were formed by long-term occupation over the course of decades, and undoubtedly entailed multiple seasons of occupation each year. Smaller middens (such as the 11 loci at SFR–113, most of which are considerably less than 100 square meters in area and no more than 20-30 centimeters thick) were formed by shorter-term activities that may represent less than a decade of occupation during only a few seasons each year.

Middens are effectively residential sites where people lived and carried out their daily activities. The largest sites, major residential settlements or villages, may well represent permanent or semi-permanent communities comprised of multiple-family units. It is anticipated that virtually the full range of non-perishable material culture should be represented at such sites, owing to the scale and duration of occupation. Smaller middens are generally considered short-term camps where community size may have been smaller or where specialized activities may have been carried out. Frequently, shorter-term camps were visited during a particular time of the year for the purpose of harvesting or acquiring a seasonally available resource (such as harvesting grasses or acorns, or acquiring seasonal water fowl). It is predicted that a more limited range of artifacts, ecofacts (shell and bone), and structural features would be documented, indicative of either a smaller residential group or a specialized/seasonal procurement activity. Both types of midden sites have high data potential: major residential sites owing to the wider range of activities that were carried out; short-term camps owing to their tighter chronological resolution and more restricted set of activities that provide unique insight into key aspects of the annual round.

Artifact and/or Ecofact Scatters

Artifact and ecofact scatters are generally the most common archaeological site type documented during archaeological surveys in undeveloped coastal areas. The absence of midden sediments is largely because occupation was of a very short duration (often including very specialized activities) but can also be effected by post-depositional processes. For example, an Early Holocene residential camp that was exposed on a land surface for thousands of years generally would have lost much if not all of its anthropogenic midden constituents, with only artifacts and ecofacts preserved. In contrast, a short-term occupation midden buried rapidly by dune sand in the Late Holocene probably will retain a wider range of its characteristics. In short, artifact and ecofact scatters may have been created by a variety of cultural and natural formation processes that must be analyzed to be fully understood.

If artifact and ecofact scatters were formed by short-term occupation events (as is generally anticipated), then they should be comprised of a restricted range of artifact and ecofact classes. For example, lithic (relating to stone or rock) scatters may represent task-oriented camps where a limited range of activities (such as butchering, re-tooling, or tool manufacturing) were carried out. In contrast, small scatters of shell may represent limited activity locales were individuals may have briefly camped or where task groups on daily foraging ventures collecting shellfish and possibly other resources had stopped and consumed a small portion of their collected foods before returning to the base camp.

In general, the older the site, the more likely it is to be an artifact or ecofact scatter rather than a midden. As such, this is the most likely site type to be encountered in association with Middle Holocene or earlier buried land surfaces. Owing to their character (a thin scatter of material on a surface), they are more difficult to identify during deep discovery efforts than midden sites.

Burial Complexes/Cemeteries

Intentional burial grounds are well-documented from the Middle Holocene onward in central California. Most are typically found within major residential sites. Although burials may be widely distributed throughout middens (and sometimes under the house floors), they are often situated in specially designated areas. Occasionally, burial complexes are documented largely in isolation or adjacent to major residential sites. Data gleaned from burials can provide a wide range of invaluable information regarding genetic relationships, health, diet, conflict, and social organization. For example, mortuary remains can provide unique insight into social status, intra-group affiliation, and disparities in wealth. They also have tremendous significance to modern Native Americans.

Isolated Finds

Isolates are typically one or a few artifacts found on ancient land surfaces without association with other aspects of human behavior. Isolated features, such as a hearth or a burial (e.g., the BART skeleton, SFR-28), may also occur. Although isolates were created by past human behavior, they generally provide only a limited range of information, and often can be dated only imprecisely. Sometimes, however, an isolate may be diagnostic of a particular time period (such as a Clovis dart point[6]) or contain material that can be radiocarbon-dated (such as charcoal from an isolated hearth). Generally, their discovery and recovery exhausts their data potential. As such, isolates are not eligible resources.

[6] Clovis dart points are fluted projectile points dating from the paleoindian period (about 13,500 years ago).

Re-deposited Prehistoric Material

Re-deposited prehistoric material is often encountered in urban settings where the original landscape has been greatly modified by construction activities. Natural processes, such as erosion, can also re-deposit cultural material into a new geological context. Generally, prehistoric material that has been re-deposited has lost all integrity and association and hence is not able to contribute significantly to regional research issues. There are, however, exceptions to this general rule—most often if a short-term occupation site or an isolated burial was re-deposited. Such sites may still retain some valuable information, but analysis would be required to confirm that the material is from a limited temporal span.

Historic Property Types

Architectural and Landscape Features

Architectural properties include structural remains such as foundations, wall footings, basement walls, and floor remnants. This property type essentially encompasses all buildings and other structures, although in this instance as they relate primarily to residential and commercial land uses.

In many cases, architectural and landscape remnants correlate with buildings and structures depicted on maps of the City, photographs, and other documents. Where that occurs, the ability of those remains to contribute to important research domains may be limited, especially with regard to later 19th and 20th century features. Some architectural and landscape features may retain higher levels of significance, as they can supply information on early construction techniques that are not otherwise well documented.

Refuse Features

Refuse features are the most common expected historic property type, and have proven to be one of the most useful sources of archaeological investigation in urban settings, particularly those that relate to residential occupation, and to a lesser extent to commercial enterprises. There are several influences on the history and production of trash in San Francisco, as discussed in the historical context. As an example, early on in its history, the City had a system of brick and wood cisterns, as well as sewer lines. Cisterns often provided convenient places for dumping trash. In addition, the City had independent collectors, who came regularly to both residences and businesses. The collectors in turn paid to dump the accumulated trash in nearby areas.

Hollow-filled refuse features include pits, privies, and wells. Such property types were created specifically for a functional use. During their use-life or upon abandonment, they became receptacles for refuse. Urban residents often used their backyards as convenient receptacles for trash before the advent of regular trash removal services. This is particularly true for those residents who were moving out of the neighborhood. These discrete refuse features provide the archaeologist with a "snapshot" of the occupants who used them. As such, these features frequently have the ability to address important research themes.

Sheet Refuse

The term "sheet refuse" includes broad artifact scatters as well as more ephemeral surface scatters that often can be indicative of more extensive archaeological deposits found beneath the surface. Sheet refuse often accumulates on living surfaces over a period of time as people discard refuse in their yards and working areas, a common 19th century practice. Sheet refuse may also be introduced as fill to raise low ground. Sheet refuse layers that are composed of dense concentrations of artifacts and are capped by a layer dateable to a specific event, such as a fire, retain the potential for strong association with specific occupants, and sufficient quantity and variety to warrant analyses. Where such association is possible, massive sheet refuse features have the potential to address important research themes. The presence of sheet refuse can also be an indicator of a social unit larger than a single household. Such social units can occur in urban areas associated with particular ethnic groups, such as Chinese.

San Francisco also has a history using imported fill to create new land. This fill often contained historic-era refuse; its contents can sometimes be used to discern past land use, and land creation.

RESEARCH THEMES ADDRESSED BY ARCHAEOLOGICAL PROPERTY TYPES[7]

Landscape Transformation

As the relatively initially small 19th century city of San Francisco began to grow, land was at a premium. Reclamation of land from shorelines has a long urban history, dating as far back as the second century AD in Europe. In San Francisco, creation of new shoreline became commonplace throughout the 19th century. Historic-era topographic maps and archival records have been used to create maps of San Francisco from Carquinez Bridge in the east to Golden Gate Bridge area in the west. These maps, generated using geographic information system (GIS) based models, illustrate the City's changing and evolving shoreline, as well as attempting to map and understand the variation of fill. The geologists were somewhat hampered to describe the composition of this fill, as prior to the 1965 McAteer-Petris Act, the "composition of bay fill and mechanism of fill placement" was unregulated.

Beginning with the American annexation of California, the shoreline around San Francisco progressively grew using mechanized and manual processes. The "steam paddy" (a steam shovel so nicknamed because it ostensibly displaced Irish laborers) cut into the sand hills that lined the waterfront. From it, hopper cars running along temporary rail lines carried the sand to the water,

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7 *75 Howard Street Addendum ARDTP*, pp. 87-94.

where it was dumped. The filling of the shallows probably began with the capping of the old wharf alignments to make the streets sold ground, and then, with the streets planked, the in-filling of the lots between the streets could proceed. Infilling of small coves, inlets, and channels created many land gains. Much of this infilling was incremental. In 1851, the State Legislature authorized the City to "construct wharves at the end of all streets terminating at the bay."

During the 19th century, the "historical progression of fills into the Bay has been accompanied by changes in how fill is placed (evolving from dumping to hydraulic filling using sand from the Bay to modern engineered fill) and what sources of fill have been used (ranging from local soil and quarry rock during early reclamation efforts, dumping of building debris after the 1906 earthquake, and massive reclamation efforts using sand dredged from the Bay…". A news article from 1910 calls San Francisco a "Modern Port," and describes the ongoing process of creating land behind seawalls, and the introduction of concrete as a useful building and filling material. During the later 20th century, when mechanization and technology allowed for more expansive reclamation, filling events were more deliberate and covered a larger area.

In the project area, shoreline was seen as a natural resource to expand and grow San Francisco's boundaries. Salvage and creation of new land is a specific cultural phenomenon resulting in what can be called a new maritime cultural landscape. The constants of maritime cultural landscapes are "dry terrain, good protection against winds, and concomitantly, good harbor locations." The project area, transformed by fill into a new maritime landscape, fits all of these requirements. Local environmental, economic, and historical events led to the creation of new land in the project area. In order to create this land, the overall landscape had to first be envisioned, and then reworked to meet local needs over time. The European Americans that settled and grew San Francisco during and after the Gold Rush saw the shoreline as a "dynamic entity." That is, the resulting new shoreline was a combination of environmental factors and local economic drivers.

San Francisco's creation and development did not occur in a cultural or economic vacuum. The growth of the City in the mid-to-late 19th century was a manifestation of the expansion of European and American capitalism and creation of a world economy. Another consequence of envisioning and creating new maritime lands was the presence of artificial fills. Recent earthquakes in the San Francisco area, and Japan, have shown that the presence of artificial fills covering former tidal flats has confirmed the vulnerability of non-engineered, man-made fills emplaced along bay margins to failure during seismic shaking.

Gold Rush and Post Gold Rush Occupation

Sporadic settlement and an influx of new American immigrants and settlers into the area characterized events and archaeology associated with the late Mexican Period and early American Period. The result was a complex environment of cultural and economic changes. San Francisco has a unique maritime landscape and had remarkable growth from a small city to a boomtown in three short years (1848-1851).

The advent of the Gold Rush drastically altered the historical landscape and the rules of interaction between local settlers. The large and rapid influx of European Americans brought new ideas of settlement patterns, architectural forms, dietary patterns, and material culture. Use of the landscape for settlement and early commercial ventures is not well documented archaeologically or historically for this period. Resources relating to these uses are relatively rare in California.

After 1850, early infrastructure improvements such as infilling of "swamp" or lowlands, grade smoothing and road planking made the "rough and primitive" urban setting more habitable. Because this was a transitory period in San Francisco's history, much of the details of the City's early development is not well documented. As noted above, Gold Rush and immediate Post Gold Rush era sites are relatively rare in the archaeological record. As such, all historic property types and archaeological features from that time period will be considered in this environmental analysis and treated as significant. Because of their nature, these features also have high public interpretive potential.

Defining Working-Class Neighborhoods

Following patterns established during its early development, the project parcel took on a "working-class" neighborhood feel by the beginning of the 1860s, mixing residential and commercial uses. The four decades between 1876 and 1915 have been called the Victorian Period in America. In urban areas especially, an economic and residential transition from an agriculture-based community to one that emphasized industry and workers' housing marked this time period. Residential life in metropolitan America became increasingly affected by trends of urbanization, mobility, increasing access to consumer goods, and what was almost an obsession with cleanliness and orderliness. Urbanization brought standardization and increasing occupational specialization, and San Francisco was no exception. The mid-to-late 19th century also made increasing amounts and variety of consumer goods much more available. The effect on the urban archaeological record in California was immediate and noticeable.

In an era of increased opportunity and migration, mobility between economic classes became more accessible, and distinctions between classes blurred as the middle class grew. American Victorians were acutely class-conscious, with the upper class asserting a moral superiority over the lower classes, and generating a concurrent pressure to conform to the dominant ideal. Consumer behavior became a way for the emerging urban middle class to assert its affiliation with, and moral equivalency to, the elite upper class. Material items became symbols of increased status and achievement. At the same time, working-class attitudes to these Victorian ideals varied. Evidence from the archaeological record indicates a continuation of a barter (rather than cash) economy, as well as an enthusiastic participation in the idea that consumer items conveyed wealth and taste.

Archaeologically, the most useful expressions of trends in Victorianism are refuse-related property types, especially hollow-filled features such as pits, privies, and wells. Sheet refuse can be helpful in interpreting the historical past, although association with a specific context is frequently problematical and often dependent upon the definition of household and ethnic affiliation.

Consideration of Household Composition

The definition of a household is important to urban archaeological studies. Increasingly, the "household" has become the primary unit of analysis in historical archaeology, especially in studies of 19th and early 20th century residential sites. The household is generally taken as the most fundamental locus of social life: the place where social identities are formulated, negotiated, and expressed through practices of consumption and, occasionally, production.

Most of the archaeological literature has defined households as single-family entities. A recent nearby study within San Francisco provides examples of privy (hollow-filled refuse) deposits that represent the families of Charles Duisenberg, Thomas O'Neil, Anne Mills, Anthony Dean, John Wendt, Andrew Buckley, and William Noonan. These names highlight the German and Irish character of the working-class neighborhood. A recent study, using San Francisco and Oakland data from different types of households, found significant differences in health and hygiene from one household to another. This study highlights how strong contextual data (such as from privies) can address a wide range of research questions.

Discussions of single-family households also consider the study of women's roles in the household. Such studies can be problematic in assigning gender roles to specific objects. How does one designate one object as male and another as female? Even more recently, children have come under special study. Like gender studies, the archaeological investigation of children can be problematic in trying to associate particular objects with individual household members. Certain objects, such as toys and nursing bottles, can generally be associated with children. Further interpretation of other objects can be tenuous, and in some cases, children may have used objects that seem to be clearly associated with adult activities. An example comes from 1880s Placerville, California. Munitions were recovered from a household privy, and would have been associated with hunting, self-defense, or some similar adult activity. Period newspapers, however, relayed a story in which a 14-year-old boy from the household was given a wagonload of beer and a rifle. During his beer delivery run he managed to shoot himself, an injury from which he eventually recovered. This example highlights the dilemma of assigning roles to individuals, or to the artifacts associated with these activities.

Another topic that has come under recent scrutiny is exactly what composes a household. The household-family association approach often does not conform to varying ethnic, racial, and class lines. Indeed, the overemphasis on household-family “hazards a reproduction of Victorian-era ideologies that proscribed the home as a private, even sacred, location of family life.” Many of San Francisco’s residents did not conform to this notion, often because of historical circumstances, race, class, and gender identities.

In some cases, sheet refuse can be directly tied to a specific group of people and a relatively tight dating sequence. The notions of household, community, and privacy should also be expanded for Hispanic and African-American-associated sites, and possibly others.

Ethnicity in the Archaeological Record

As noted elsewhere in this document, San Francisco was by its nature a cosmopolitan city from its inception. Aside from the Native Americans who had occupied the land for generations, there were Spanish and Mexican settlers prior to the annexation of California by the United States. The Mexican government had even been willing to allow a few foreigners to settle in the area. With the Gold Rush of 1849, new immigrants arrived by the thousands from all over the globe. Americans of all creeds and colors flowed from the east. Mexicans from Central America and Chileans from South America, both groups with much-needed mining experience, flowed north. From Asia came the Chinese and Japanese. Lastly, there were representatives of virtually every country in Europe. Seemingly overnight, San Francisco transformed from a sparsely populated peninsula of Spanish and Native speakers to a hustling urban center where the languages of many nations could be heard.

The study of ethnicity has long been highlighted in the field of historical archaeology. In sum, definitions of ethnicity are internal, not external, and the elements that characterize an ethnic group are perpetuated or changed by the group itself. These “defining” attributes are not static, but change over time and in reaction to particular circumstances. Concepts of ethnicity rely on contrasts with other groups, on differences within a larger population. The formation and maintenance of ethnic groups rely on opposition, and one of the more meaningful places to look for statements of ethnicity is where two or more groups are in contact. Determining how firmly ethnic boundaries are maintained, and in what particular areas (land use, commercial enterprises, consumer goods, etc.) can provide important information on the relationships between groups. More recently, the concept of “race” has been revived, not as a biological fact, but as an acknowledgment of a social construct that was taken as a given during the period under study here, and one that affected the interaction and reaction of all parties involved.

There have been numerous urban historical archaeological studies that have approached ethnicity as a topic of investigation. The following is not intended as a comprehensive overview, but provides a few examples of the different approaches taken in the archaeological study of ethnicity. Previous studies have looked at dietary patterns, drug usage, ceramics, recreational activities, clothing, medicinal practices, etc.

Commercial Land Uses

Within the project parcel, commercial uses appear in the documentary record from the outset, as it was from its inception a mixed-use landscape. Architectural and refuse property types are most likely to be associated with commercial use in the archaeological record. Architectural commercial features gain in importance if they are from the Gold Rush and immediate Post Gold Rush era; after that, their archaeological significance must be weighed against the documentary record. The study of refuse features associated with commercial enterprises closely follows the discussion of household and ethnic boundaries presented above. Commercial deposits that can be associated with a particular occupation, such as a doctor's office, are particularly fruitful avenues of research.

Public Interpretation Potential

As urban excavations often occur in highly visible locations, there are inherent opportunities for public interpretation of the archaeological record. Recent urban excavations in California have shown the importance of such interpretation, and the popularity of interpretive programs. Recent excavations by the Anthropological Studies Center, Sonoma State University, in Oakland and San Francisco have also highlighted public outreach efforts. The Secretary of Interior's Standards for Archaeological Documentation encourages public interpretation of archaeological data where merited by the findings. Archaeology has great potential for interesting a community in their local history. Carefully planned information programs can educate the public and elicit information important to interpreting the past through artifacts, photographs, and documents. Public interpretation programs succeed best when combined with existing community group activities and events planned with foresight and public support.

REGULATORY FRAMEWORK

Under CEQA, archaeological resources are considered to be part of the physical environment and, thus, CEQA requires that the potential of a project to adversely affect archaeological resources be analyzed (CEQA Section 21083.2). For a project that may have an adverse effect on a significant archaeological resource, CEQA requires preparation of an environmental impact report (CEQA Section 21083.2 and CEQA Guidelines Section 15065). CEQA recognizes two different categories of significant archaeological resources: "unique" archaeological resources

(CEQA Section 21083.2) and archaeological resources that qualify as “historical resources” under CEQA (CEQA Section 21084.1; CEQA Guidelines Section 15064.5).

Significance of Archaeological Resources

An archaeological resource can be significant as either a “unique” archaeological resource or an “historical resource” or both, but the process by which the resource is identified under CEQA as one or the other is distinct (CEQA Section 21083.2(g); CEQA Guidelines 15064.5(a)).

An archaeological resource is an historical resource under CEQA if the resource is:

- Listed on or determined eligible for listing on the California Register of Historical Resources (CRHR); this includes archaeological properties listed or eligible for the National Register of Historic Places (NRHP);
- Listed in a “local register of historical resources;”[8] or
- Listed in an “historical resource survey.”

Generally, an archaeological resource is determined to be an historical resource due to its eligibility for listing to the CRHR or the NRHP under Criterion 4 because of the potential scientific value of the resource, that is, it “has yielded, or may be likely to yield, information important in prehistory or history” (CEQA Guidelines Section 15064.5(a)(3)). An archaeological resource may also be CRHR-eligible under other evaluation criteria, such as Criterion 1, association with events that have made a significant contribution to the broad patterns of history; Criterion 2, association with the lives of historically important persons; or Criterion 3, association with the distinctive characteristics of a type, period, region, or method of construction. Appropriate treatment for archaeological properties that are CRHR-eligible under criteria other than Criterion 4 may be different than treatment for a resource that is significant exclusively for its scientific value. Appropriate treatment for archaeological resources significant under Criterion 1 (Events), Criterion 2 (Persons), and Criterion 3, (Design/Construction) may include an interpretive program to preserve and enhance the ability of an archaeological resource to convey its association with historic events and persons and to convey its distinctive design/construction characteristics.

Failure of an archaeological resource to be listed in any of these historical inventories is not sufficient to conclude that the archaeological resource is not an historical resource. When the lead agency believes there may be grounds for a determination that an archaeological resource is an historical resource, then the lead agency should evaluate the resource for eligibility for listing to the CRHR (CEQA Guidelines Section 15064.5(a)(4)).

[8] A local register of historical resources is a list of historical or archaeological properties officially adopted by ordinance or resolution by a local government (Public Resources Code 5020.1(k)).

"Unique archaeological resource" is a category of archaeological resources created by the CEQA statutes (CEQA Section 21083.2(g)). An archaeological resource is a unique archaeological resource if it meets any one of the following three criteria:

- Contains information needed to answer important scientific research questions (and there is a demonstrable public interest in that information);
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Under CEQA, evaluation of an archaeological resource as an historical resource is privileged over the evaluation of the resource as a unique archaeological resource in that CEQA requires that "when a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource" (CEQA Guidelines Section 15064.5(c)(l)).

Evaluation of an Archaeological Resource as Scientifically Significant

In requiring that a potentially affected archaeological resource be evaluated as an historical resource—that is, as an archaeological site of sufficient scientific value to be CRHR-eligible—CEQA presupposes that the published guidance of the California Office of Historic Preservation (OHP) for CEQA providers will serve as the methodological standard by which the scientific, and thus the CRHR eligibility, of an archaeological resource is to be evaluated. As guidance for the evaluation of the scientific value of an archaeological resource, the OHP has issued two guidelines: *Archaeological Resource Management Reports* (1989) and the *Guidelines for Archaeological Research Designs* (1991).

Integrity of Archaeological Resource

Integrity is an essential criterion in determining if a potential resource, including an archaeological resource, is an historical resource. In terms of CEQA, "integrity" can, in part, be expressed in the requirement that an historical resource must retain "the physical characteristics that convey its historical significance" (CEQA Guidelines Section 15064.5(b)).

For an archaeological resource that is evaluated for CRHR eligibility under Evaluation Criterion 4, "has yielded or may be likely to yield information important to prehistory or history," the word "integrity" has a different meaning from the way in which it usually applies to the built environment. For an historic building, possessing integrity means that the building retains the defining characteristics from the period of significance of the building. In archaeology, an archaeological deposit or feature may have undergone substantial physical change from the time of its deposition, but it may yet have sufficient integrity to qualify as a historical resource. The integrity test for an archaeological resource is whether the resource can yield sufficient data (in type, quantity, quality, diagnosticity) to address significant research questions. Thus, in archaeology "integrity" is often closely associated with the development of a research design that identifies the types of physical characteristics ("data needs") that must be present in the archaeological resource and its physical context to adequately address research questions appropriate to the archaeological resource.

Significant Adverse Effect on an Archaeological Resource

The determination of whether an effect on an archaeological resource is significant depends on the effect of the project on those characteristics of the archaeological resource that make the archaeological resource significant. For an archaeological resource that is an historical resource because of its prehistoric or historical information value, that is, its scientific data, a significant effect is impairment of the potential information value of the resource.

The depositional context of an archaeological resource, especially soils stratigraphy,[9] can be informationally important to the resource in terms of dating and reconstructing characteristics of the resource at time of deposition and to interpreting the impacts of later deposition events on the resource. Thus, for an archaeological resource eligible to the CRHR under Criterion 4, a significant adverse effect to its significance may not be limited to impacts on the artifactual material but may include effects on the soils matrix in which the artifactual matrix is situated.

Mitigation of Adverse Effect to All Archaeological Resources

Preservation in place is the preferred treatment of an archaeological resource (CEQA Section 21083.2(b); CEQA Guidelines Section 15126.4(b)(3)(a)). When preservation in place of an archaeological resource is not feasible, data recovery, in accord with a data recovery plan prepared and adopted by the lead agency prior to any soils disturbance, is the appropriate mitigation (CEQA Guidelines Section 15126.4(b)(3)(C)). In addition to data recovery, under CEQA, the mitigation of effects to an archaeological resource that is significant for its scientific value requires curation of the recovered scientifically significant data in an appropriate curation facility (CEQA Guidelines Section 15126.4(b)(3)(C)) that is compliant with the OHP's *Guidelines for the Curation of Archaeological Collections* (1993). Final studies reporting the interpretation, results, and analysis of data recovered from the archaeological site are to be deposited in the California Historical Resources Regional Information Center (CEQA Guidelines Section 15126.4(b)(3)(C)).

Effects on Human Remains

Under State law, human remains and associated burial items may be significant resources in two ways. They may be significant to descendent communities for patrimonial, cultural, lineage, and

[9] Stratigraphy refers to geological and archaeological layers that make up an archaeological deposit.

religious reasons. Human remains may also be important to the scientific community, such as prehistorians, epidemiologists, and physical anthropologists. The specific stake of some descendent groups in ancestral burials is a matter of law for some groups, such as Native Americans (CEQA Guidelines Section 15064.5(d); Public Resources Code Section 5097.98). In other cases, the concerns of the associated descendent group regarding appropriate treatment and disposition of discovered human burials may become known only through outreach. Beliefs concerning appropriate treatment study, and disposition of human remains and associated burial items may be inconsistent and even conflictual between descendent and scientific communities. CEQA and other State regulations concerning Native American human remains provide the following procedural requirements to assist in avoiding potential adverse effects to human remains within the contexts of their value to both descendent communities and the scientific community:

- When an initial study identifies the existence or probable likelihood that a project would impact Native American human remains, the lead agency is to contact and work with the appropriate Native American representatives identified through the Native American Heritage Commission (NAHC) to develop an agreement for the treatment and disposal of the human remains and any associated burial items (CEQA Guidelines Section 15064.5(d); Public Resources Code Section 5097.98).
- 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 (Public Resources Code 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 (CEQA Guidelines Section 15064.5(c)(2)).

ARCHAEOLOGICAL SENSITIVITY ASSESSMENT

Prehistoric Archaeological Sensitivity

Since the 75 Howard Street project will have subsurface impacts, a geoarchaeological assessment of the potential for buried sites was conducted for the project area using relevant documents and maps. A comprehensive geoarchaeological study recently completed for the TCDP provided a comprehensive assessment of the age and extent of surficial and subsurface deposits in the area. That study also included geoarchaeological coring at several project parcels within TCDP area and presented detailed stratigraphic and radiocarbon evidence. The closest of these coring locations to the 75 Howard project area was located at 181 Fremont Street approximately 400 meters (0.25 miles) away. The *75 Howard Addendum ARDTP* used the age of particular landforms and various environmental factors (including topographic relief and proximity to water) from the TCDP study to identify the sensitivity for buried prehistoric archaeological sites on the 75 Howard project parcel.

Buried Site Problem

Before buried sites can be avoided, sampled, or otherwise "managed," they must first be identified. The potential for buried archaeological sites is a practical problem for resource managers who must make a reasonable effort to identify archaeological deposits in a three-dimensional project area, ensuring that potentially important resources are not affected by project activities. Early detection of buried archaeological deposits also avoids the potential for costly delays that may occur when unknown resources are discovered after project-related earth-moving activities have begun and late discovery protocols are necessary. This is particularly important for any projects that can suffer significant delays and incur unexpected costs if a buried site is discovered as part of the project-related activities. Because of this, the potential for buried sites to occur within the proposed project area is assessed in the following sections.

Buried Site Sensitivity Factors

Since the project is located in an urban setting, surface survey has little likelihood of identifying prehistoric sites on what was original ground surface. Nor would surface survey identify prehistoric sites that have been buried by natural deposition. Therefore, the following geoarchaeological identification effort is a proactive approach to identifying as soon as possible whether prehistoric sites are present.

Many Holocene-age depositional landforms (e.g., alluvial deposits and sand dunes) have a general "geologic potential" to contain buried sites as they were formed after the arrival and occupation of the region by prehistoric people. Conversely, landforms that pre-date the Holocene have little or no potential to contain buried sites because there were few, if any, people yet present in the region. Previous studies have shown that known prehistoric sites tend to be located within 656 feet or less of a known stream or other water source. Thus, Holocene-age terrestrial deposits located near an historic-era bay or stream are often considered to have an elevated potential to contain buried sites.

Geological Background

Bedrock contours indicate that, prior to the formation of San Francisco Bay, the project location would have been on a steep, northward-facing slope at the mouth of a submerged, structurally controlled, northeast-southwest trending valley that underlies Mission Street. Within this ancient valley the surface of the Pleistocene Colma Formation undulated considerably between Mission and Howard streets. This structural valley has been confirmed to underlie the area to the northwest of Rincon Hill. As such, the pre-bay Pleistocene terrestrial surface of the project area had a high-angle slope facing the Bay, which would have made it vulnerable to erosion.

During the Early and Middle Holocene, rapidly rising sea levels inundated this valley, creating an ancestral Yerba Buena Cove much larger than depicted on historic-era maps. The project area is located within the former extent of Yerba Buena Cove and was most likely inundated by sea-level rise between 8,000 and 10,000 years ago. During the Late Holocene episodes of dune deposition progressively in-filled Yerba Buena Cove from the northwest to southeast. This created a terrestrial landform for prehistoric inhabitants to occupy. These dune deposits did not extend into the 75 Howard Street project area, which remained within the cove well into the historic era. Finally, during the historic-era thick deposits of artificial fill, largely derived from leveling local sand dunes, were placed around the margins of the Bay, and within Yerba Buena Cove in particular, to expand the amount of land available for urban development.

Anticipated Subsurface Deposits in the Project Area

The 75 Howard Street project area is underlain by artificial fill that is 10 to 20 feet thick. Artificial fill is underlain in some places by marine deposits that are 10 to 15 feet thick, but primarily underlain by Bay Mud which is 30 to 60 feet thick. In some areas the Bay Mud is underlain by additional bay deposits which are 11 to 16 feet thick. Bedrock is anticipated to be at a depth of 60 to 80 feet bgs sloping down to the east. No former terrestrial surfaces appear to be represented within the project area.

Geoarchaeological coring at 181 Fremont Street for the Transit Center project identified artificial fill consisting of redeposited dune sand to a depth of 19 to 22 feet bgs, underlain by Bay Mud deposits to a depth of 40 feet bgs, at which point coring was terminated. This investigation failed to identify a terrestrial surface beneath bay deposits, suggesting either the Colma Formation was not deposited in this area or, alternatively, that it was removed by erosion due to channel incision and/or rising sea levels.

Additional coring at Mission and Fremont streets identified a truncated terrestrial surface below the Bay and these results also supporting this interpretation that no intact terrestrial surface are likely to be preserved within the 75 Howard Street project area. Geotechnical investigations in the immediate vicinity also identified Bay Mud to roughly 39.5 feet bgs underlain by marine sand to a depth of 78 feet bgs where it overlies a thin layer of Colma Formation. Based on these findings, the TCDP area study determined that the Colma Formation pinches out between Beale and Main streets and, therefore, is unlikely to be preserved further to the east. Additionally, where present, the Colma Formation would not be archaeologically sensitive in this area since it appears likely that erosion either removed or truncated the deposit.

Buried Site Sensitivity Assessment

The 75 Howard Street project area was located within Yerba Buena Cove during much of the Holocene. During the Early Holocene, inundation of the area caused by sea level rise also appears to have eroded the Pleistocene land surface and in places exposed bedrock. Subsequently (during the Middle and Late Holocene) a thick layer of marine deposits (Bay Mud and marine sand deposits) accumulated within Yerba Buena Cove. In places these marine deposits may be directly overlain by bedrock; elsewhere a truncated Colma formation deposit may be present. Finally, in the early part of the historic-era the project area ceased to be part of Yerba Buena Cove as it was filled in with artificial material (including sand from nearby terrestrial sand dunes) to create new land for the expanding City of San Francisco.

Based on this reconstruction of the geomorphic history, the project area is determined to have a low potential for buried prehistoric archaeological sites both at the historic-era surface and more deeply buried contexts. Artificial fill has a very low potential to contain intact prehistoric archaeological deposits. Given that the Bay Mud was deposited in an aquatic environment, the potential for it to contain buried archaeological material is low. This is particularly the case for the project area which was located within Yerba Buena Cove more than 650 feet from the 1850s shoreline. There is also a low potential for archaeological deposits to occur below the Bay Mud since the underlying Colma Formation may not be present within the project area and if present it is likely to have been truncated by earlier erosion.

The sensitivity of the project area is further reduced by three factors. First, the nature and direction of the slope of the pre-bay terrestrial landscape would not have been ideal for human use or occupation. Second, the project area would have been inundated early in time by rising sea levels and so would only have been available for human use and occupation briefly when human populations are thought to have been relatively low. Finally, the nature and location of the slope made it susceptible to erosion during sea-level rise and the former terrestrial surface was likely removed or truncated which would have also removed any archaeological materials that may have been present.

Historic-Era Archaeological Sensitivity

<u>Archival Reconstruction of Land Use</u>

The 75 Howard Street project area has undergone several transformations during the historic era. The first major transformation is the filling in of Yerba Buena Cove by 1853 to create the land from Front Street to East Street (currently known as Lincoln Highway/Embarcadero) and a series

of docks. The project block sits at an elevation of 6 to 9 feet above mean sea level. During the early period the area contained numerous structures, almost entirely wood-framed, that contained various small businesses and boarding houses. Businesses catered to the maritime industry and included ship riggers, liquor stores, saloons, and storage yards for lumber and coal. Many proprietors or employees of these businesses lived at the same address as their place of work. While the small businesses change hands frequently, some businesses remained for over 20 years (e.g., Simmons & Co. Rigging and White Brothers Hardwood).

By the end of the 19th century, the White Brothers Hardwood Lumber House and Simpson Lumber Company's Yard occupied the majority of the block. The corner of Howard and Steuart streets still had a ship rigger business, lodgings, and saloons. The number of sailors temporarily boarding in the general area of this block was well over 2,000. More than 500 resided at 6 Howard Street (the northwest corner of the intersection of Steuart and Howard streets). After the 1906 earthquake, the land use of this northwest corner changed very little, unlike much of the City. The ship riggers' facility vacated, but the stores and saloons remained. The lumber yards were abandoned or replaced by stables, coal yards, and machine shops. Before 1913, addresses along Howard Street range from 11 to 43, and appear as odd numbers.

Between 1913 and 1949, the project block underwent more changes. Saloons and lodgings on the project corner were demolished, and replaced with a freight depot and storage yard built after 1938. The remaining portion of the block was made up of various industrial manufacturing plants and a service station. By 1949, the addresses along this block on Howard Street still appear as odd numbers, but range from 51 to 99.

In the 1960s most of the block was cleared for the Embarcadero Freeway, and the remainder became a parking lot. In 1975 a parking garage was built on the project corner. In 1986, an 18-story office building was built on the corner of Howard and Spear streets, and in 2000, a 15-story office building was built along Folsom Street between Spear and Steuart streets. Parking lots still remain between the parking garage and the newest office building.

Archaeological Sensitivity

When the Gold Rush began in 1849 the project area was part of Yerba Buena Cove, completely inundated by the Bay's waters. An 1852-1853 map shows the area still more than three feet below the waterline. By 1859, the area had been filled in so it was then above the waterline, but no development had taken place at that time. On a map of that same year a wharf is depicted at the end of Howard Street, indicating likely usage of the area as a landing.

Between 1860 and 1870 individuals and families began to take up residence in the area. Between 1871 and 1879 commercial parts of the project area developed into an area devoted to the maritime trade, with numerous boarding houses and saloons clustered around the intersection of

Howard and Steuart streets. A few stores were intermixed here as well. These buildings were mostly one- and two-story wooden buildings. The occupants of the boarding houses were primarily sailors and those who working in outfitting and repairing vessels. Larger industrial facilities supplying the maritime trace were located here as well. These included lumber yards, planing mills, iron works and machine shops. Over time the residential pattern of the area became more "gentrified" with the inclusion of whole families at some of the domiciles within the project area.

The 1906 Earthquake inflicted heavy damage to the neighborhood, with only White Brothers lumber yard making it through mostly unscathed. The neighborhood was rebuilt with much the same mixed used it had prior to the earthquake. It was a mix of saloons, boarding houses, shops, and industry. After WWI the area became more industrialized. By 1938, the residential component had all but vanished, and eventually several large draying companies came to occupy the area. By 1949, the area had been given over to a parking lot.

From that point forward the major changes to the area were the construction of the Embarcadero Freeway in the 1960s and the construction of the parking structure at 75 Howard Street in 1976. The potential for the preservation of archaeological resources may have been impinged upon by the construction of the parking structure at 75 Howard (the subsurface impacts of which remain unknown), as well as the construction and demolition of the Embarcadero Freeway to the east of the project area. Despite these possible impacts, there is considerable potential for buried archaeological deposits to be preserved below the modern ground surface.

The historic-era archaeological potential of the project area is considered to be moderately high. Based on existing data the project area has been both filled in and cut down over time. The modern ground surface within the project site varies from 6 feet above mean sea level (AMSL) at the northeast end of project area (within APN 03742/012), and gradually sloping upward to 9 feet AMSL at the west edge of the project area (within APN 03741/031). In 1851, the area was in excess of 3 feet below the waterline. As such, this is a gain of 12 feet or more in elevation since the area first mapped in 1851.

The project area was under continual use as a mixed commercial/residential neighborhood from at least the 1870s through the 1906 earthquake, when most of the neighborhood was demolished. Subsequent rebuilding of the neighborhood was again mixed residential/commercial and did not include structures with basements, or any other substantial earth moving development. This indicates that there is a relatively high probability that pre-1906 deposits have been capped by current structures and landforms. These deposits may include sheet refuse, hollow-filled pit features (privies and trash pits), foundations, and remnants of wharves.

IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

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 adopted and modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the project would result in a significant impact related to cultural resources. Implementation of the proposed project and project variants would have a significant effect related to archaeological resources if the project would:

D.1 Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5; or

D.2 Disturb any human remains, including those interred outside of formal cemeteries.

PROJECT FEATURES

Both the proposed project and project variants include demolition of an 8-level parking garage built in 1976 and disturbance of soil underneath it. Excavation to a depth of approximately 59 feet bgs would occur following demolition of the parking garage. Approximately 45,000 cubic yards of soil would be excavated and removed for the proposed building site. The open space improvements east of Steuart Street would require additional excavation up to ten-foot-deep on portions of the improvement site and up to 5,000 cubic yards of soil that would be excavated and removed from the site.

Under both project variants, excavation would reach to a depth of 70 feet bgs (11 feet deeper than the proposed project) and 54,000 cubic yards (9,000 cubic yards more than the proposed project) would be removed from the project site.

APPROACH TO ANALYSIS

This section is based on the *75 Howard Addendum ARDTP* prepared by consulting archaeologists Far Western Anthropological Research Group, Inc. The *75 Howard Addendum ARDTP* presents the results of archival research, which includes the review of previous cultural resource studies of the project area and its vicinity to assess the likelihood of encountering archaeological resources within the project site, and anticipates the property types that may be present. The *75 Howard Addendum ARDTP* also presents relevant archaeological research themes, questions, and data requirements to evaluate the integrity and significance of cultural deposits that may be encountered, and provides recommendations for their recovery, study, treatment, and disposition.

Background research for this project consisted of an archival review of archaeological reports on file at the Northwest Information Center, and a review of historical maps including Sanborn maps, U.S. Coast Survey maps, and early lithographs. Primary sources of information come from the San Francisco History Center at the San Francisco Public Library, San Francisco Planning Department, and San Francisco Maritime Museum. Review of online sources of digitized historic-era documents is critical to understanding past land uses. The Native American Heritage Commission was also contacted to determine if there were any know cultural sites within or near the Area of Potential Effects for the TCDP area.

IMPACT EVALUATION

Impact CP-1: Construction activities for the proposed project and project variants would cause a substantial adverse change in the significance of archaeological resources, if such resources are present within the project site. ***(Less than Significant with Mitigation)***

Based upon the history of the site and area, as discussed above in the Archaeological Sensitivity Assessment and the Environmental Setting, there is a moderately high probability that historic-era archaeological features may be present within the project site. Unless mitigated, ground-disturbing construction activity within the project site could adversely affect the significance of archaeological resources under CRHR Criterion 4 (Information Potential) by impairing the ability of such resources to convey important scientific and historical information. This effect would be considered a substantial adverse change in the significance of an historical resource and would therefore be a potentially significant impact under CEQA.

Mitigation Measure M-CP-1a: Archaeological Testing, Monitoring, Data Recovery and Reporting, pp. 4.D.35-4.D.39, would implement an approved plan for testing, monitoring, and data recovery and would ensure that the significance of any CRHR-eligible archaeological resource would be preserved and/or retained in place.

Mitigation Measure M-CP-1b: Interpretation, p. 4.D.39, calls for a qualified archaeological consultant to prepare and submit a plan for post-recovery interpretation of resources. Implementation of an approved program of interpretation under Mitigation Measure M-CP-1b would preserve and enhance the ability of the resource to convey its association with historic events under CRHR Criterion 1 (Events).

Even with implementation of Mitigation Measures C-CP-1a and -1b, unanticipated archaeological resources may be encountered in the course of project construction. Mitigation Measure M-CP-1c: Accidental Discovery, pp. 4.D.39-4.D.40, would avoid a potential adverse effect from the proposed project on accidentally discovered buried or submerged historical resources as defined in CEQA Guidelines Section 15064.5(a)(c). Mitigation Measure M-CP-1c requires that the project sponsor distribute an "Alert Sheet" to inform all field and construction personnel of the potential presence of archaeological resources within the project site and the procedures in the event such resources are encountered during construction activities. If such resources are encountered, this measure calls for immediate suspension of soils-disturbing activity, and notification of the Environmental Review Officer (ERO) to determine what additional measures should be undertaken. The ERO may require that an archaeological consultant be retained to evaluate the resource and make recommendations. The ERO may require specific additional measures to be implemented by the project sponsor. Implementation of Mitigation Measure M-CP-1c would ensure that the significance of unanticipated archaeological resources, if present within the project site, would be preserved in the event such resources are accidentally encountered during demolition and groundwork activities.

With implementation of Mitigation Measures M-CP-1a, M-CP-1b, and M-CP-1c, the proposed project and project variants would not cause a substantial adverse effect related to unanticipated remains.

Mitigation Measure M-CP-1a: Archaeological Testing, Monitoring, Data Recovery and Reporting

Based on a reasonable presumption that archaeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources. The project sponsor shall retain the services of an archaeological consultant from the pool of qualified archaeological consultants maintained by the Planning Department archaeologist. The archaeological consultant shall undertake an archaeological testing program as specified herein. In addition, the consultant shall be available to conduct an archaeological monitoring and/or data recovery program if required pursuant to this measure. The archaeological consultant's work shall be conducted in accordance with this measure at the direction of the Environmental Review Officer (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. Archaeological monitoring and/or data recovery programs required by this measure could suspend construction of the project for up to a maximum of four weeks. At the direction of the ERO, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means to reduce to a less than significant level potential effects on a significant archaeological resource as defined in CEQA Guidelines Sect. 15064.5 (a) and (c).

Consultation with Descendant Communities

On discovery of an archaeological site[10] associated with descendant Native Americans or the Overseas Chinese an appropriate representative[11] of the descendant group and the ERO shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archaeological field investigations of the site and to consult with ERO regarding appropriate archaeological treatment of the site, of recovered data from the site, and, if applicable, any interpretative treatment of the associated archaeological site. A copy of the Final Archaeological Resources Report shall be provided to the representative of the descendant group.

Archaeological Testing Program

The archaeological consultant shall prepare and submit to the ERO for review and approval an archaeological testing plan (ATP). The archaeological testing program shall be conducted in accordance with the approved ATP. The ATP shall identify the property types of the expected archaeological resource(s) that potentially could be adversely affected by the proposed project, the testing method to be used, and the locations recommended for testing. The purpose of the archaeological testing program will be to determine to the extent possible the presence or absence of archaeological resources and to identify and to evaluate whether any archaeological resource encountered on the site constitutes an historical resource under CEQA.

At the completion of the archaeological testing program, the archaeological consultant shall submit a written report of the findings to the ERO. If based on the archaeological testing program the archaeological consultant finds that significant archaeological resources may be present, the ERO in consultation with the archaeological consultant shall determine if additional measures are warranted. Additional measures that may be undertaken include additional archaeological testing, archaeological monitoring, and/or an archaeological data recovery program. If the ERO determines that a significant archaeological resource is present and that the resource could be adversely affected by the proposed project, at the discretion of the project sponsor either:

A) The proposed project shall be re-designed so as to avoid any adverse effect on the significant archaeological resource; or

B) A data recovery program shall be implemented, unless the ERO determines that the archaeological resource is of greater interpretive than research significance and that interpretive use of the resource is feasible.

Archaeological Monitoring Program

If the ERO in consultation with the archaeological consultant determines that an archaeological monitoring program (AMP) shall be implemented the archaeological monitoring program shall minimally include the following provisions:

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[10] The term “archaeological site” is intended here to minimally include any archaeological deposit, feature, burial, or evidence of burial.

[11] An “appropriate representative” of the descendant group is here defined to mean, in the case of Native Americans, any individual listed in the current Native American Contact List for the City and County of San Francisco maintained by the California Native American Heritage Commission and in the case of the Overseas Chinese, the Chinese Historical Society of America.

- The archaeological consultant, project sponsor, and ERO shall meet and consult on the scope of the AMP reasonably prior to any project-related soils disturbing activities commencing. The ERO in consultation with the archaeological consultant shall determine what project activities shall be archaeologically monitored. In most cases, any soils- disturbing activities, such as demolition, foundation removal, excavation, grading, utilities installation, foundation work, driving of piles (foundation, shoring, etc.), site remediation, etc., shall require archaeological monitoring because of the risk these activities pose to potential archaeological resources and to their depositional context;
- The archaeological consultant shall advise all project contractors to be on the alert for evidence of the presence of the expected resource(s), of how to identify the evidence of the expected resource(s), and of the appropriate protocol in the event of apparent discovery of an archaeological resource;
- The archaeological monitor(s) shall be present on the project site according to a schedule agreed upon by the archaeological consultant and the ERO until the ERO has, in consultation with project archaeological consultant, determined that project construction activities could have no effects on significant archaeological deposits;
- The archaeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis;
- If an intact archaeological deposit is encountered, all soils-disturbing activities in the vicinity of the deposit shall cease. The archaeological monitor shall be empowered to temporarily redirect demolition/excavation/pile driving/construction activities and equipment until the deposit is evaluated. If in the case of pile driving activity (foundation, shoring, etc.), the archaeological monitor has cause to believe that the pile driving activity may affect an archaeological resource, the pile driving activity shall be terminated until an appropriate evaluation of the resource has been made in consultation with the ERO. The archaeological consultant shall immediately notify the ERO of the encountered archaeological deposit. The archaeological consultant shall make a reasonable effort to assess the identity, integrity, and significance of the encountered archaeological deposit, and present the findings of this assessment to the ERO.

Whether or not significant archaeological resources are encountered, the archaeological consultant shall submit a written report of the findings of the monitoring program to the ERO.

Archaeological Data Recovery Program

If the ERO, in consultation with the archaeological consultant, determines that archaeological data recovery programs shall be implemented, the archaeological data recovery program shall be conducted in accord with an archaeological data recovery plan (ADRP). The archaeological consultant, project sponsor, and ERO shall meet and consult on the scope of the ADRP prior to preparation of a draft ADRP. The archaeological consultant shall submit a draft ADRP to the ERO. The ADRP shall identify how the proposed data recovery program will preserve the significant information the archaeological resource is expected to contain. That is, the ADRP will identify what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical.

The scope of the ADRP shall include the following elements:

- *Field Methods and Procedures*. Descriptions of proposed field strategies, procedures, and operations.
- *Cataloguing and Laboratory Analysis*. Description of selected cataloguing system and artifact analysis procedures.
- *Discard and Deaccession Policy*. Description of and rationale for field and post-field discard and deaccession policies.
- *Interpretive Program*. Consideration of an on-site/off-site public interpretive program during the course of the archaeological data recovery program.
- *Security Measures*. Recommended security measures to protect the archaeological resource from vandalism, looting, and non-intentionally damaging activities.
- *Final Report*. Description of proposed report format and distribution of results.
- *Curation*. Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities.

Human Remains and Associated or Unassociated Funerary Objects

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 in the event of the Coroner's determination that the human remains are Native American remains, notification of the California State Native American Heritage Commission (NAHC) who shall appoint a Most Likely Descendant (MLD) (Pub. Res. Code Sec. 5097.98). The archaeological consultant, project sponsor, and MLD shall make all reasonable efforts to develop an agreement for the treatment of, with appropriate dignity, human remains and associated or unassociated funerary objects (CEQA Guidelines. Sec. 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.

Final Archaeological Resources Report

The archaeological consultant shall submit a Draft Final Archaeological Resources Report (FARR) to the ERO that evaluates the historical significance of any discovered archaeological resource and describes the archaeological and historical research methods employed in the archaeological testing/monitoring/data recovery program(s) undertaken. Information that may put at risk any archaeological resource shall be provided in a separate removable insert within the final report.

Once approved by the ERO, copies of the FARR shall be distributed as follows: California Archaeological Site Survey Northwest Information Center (NWIC) shall receive one (1) copy and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The Environmental Planning division of the Planning Department shall receive one bound, one unbound and one unlocked, searchable PDF copy on CD of the FARR along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest in or the high interpretive value of the resource, the ERO may require a different final report content, format, and distribution than that presented above.

Mitigation Measure M-CP-1b: Interpretation

Based on a reasonable presumption that archaeological resources may be present within the project site, and to the extent that that the potential significance of some such resources is premised on CRHR Criteria 1 (Events), 2 (Persons), and/or 3 (Design/Construction), the following measure shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources.

The project sponsor shall implement an approved program for interpretation of resources. The project sponsor shall retain the services of a qualified archaeological consultant having expertise in California urban historical and marine archaeology. The archaeological consultant shall develop a feasible, resource-specific program for post-recovery interpretation of resources. The particular program for interpretation of artifacts that are encountered within the project site will depend upon the results of the data recovery program and will be the subject of continued discussion between the ERO, consulting archaeologist, and the project sponsor. Such a program may include, but is not limited to, any of the following (as outlined in the ARDTP): surface commemoration of the original location of resources; display of resources and associated artifacts (which may offer an underground view to the public); display of interpretive materials such as graphics, photographs, video, models, and public art; and academic and popular publication of the results of the data recovery.

The archaeological consultant's work shall be conducted at the direction of the ERO, and in consultation with the project sponsor. All plans and recommendations for interpretation by the consultant 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.

Mitigation Measure M-CP-1c: Accidental Discovery

The following mitigation measure is required to avoid any potential adverse effect from the proposed project on accidentally discovered buried or submerged historical resources as defined in CEQA Guidelines Section 15064.5(a)(c). The project sponsor shall distribute the Planning Department archaeological resource "ALERT" sheet to the project prime contractor; to any project subcontractor (including demolition, excavation, grading, foundation, pile driving, etc. firms); or utilities firm involved in soils disturbing activities within the project site. Prior to any soils disturbing activities being undertaken, each contractor is responsible for ensuring that the "ALERT" sheet is circulated to all field personnel including, machine operators, field crew, pile drivers, supervisory personnel, etc. The project sponsor shall provide the Environmental Review Officer (ERO) with a signed affidavit from the responsible parties (prime contractor, subcontractor(s), and utilities firm) to the ERO confirming that all field personnel have received copies of the Alert Sheet.

Should any indication of an archaeological resource be encountered during any soils disturbing activity of the project, the project Head Foreman and/or project sponsor shall immediately notify the ERO and shall immediately suspend any soils disturbing activities in the vicinity of the discovery until the ERO has determined what additional measures should be undertaken.

If the ERO determines that an archaeological resource may be present within the project site, the project sponsor shall retain the services of an archaeological consultant from the pool of qualified archaeological consultants maintained by the Planning Department archaeologist. The archaeological consultant shall advise the ERO as to whether the discovery is an archaeological resource, retains sufficient integrity, and is of potential scientific/historical/cultural significance. If an archaeological resource is present, the archaeological consultant shall identify and evaluate the archaeological resource. The archaeological consultant shall make a recommendation as to what action, if any, is warranted. Based on this information, the ERO may require, if warranted, specific additional measures to be implemented by the project sponsor.

Measures might include: preservation in situ of the archaeological resource; an archaeological monitoring program; or an archaeological testing program. If an archaeological monitoring program or archaeological testing program is required, it shall be consistent with the Environmental Planning (EP) division guidelines for such programs. The ERO may also require that the project sponsor immediately implement a site security program if the archaeological resource is at risk from vandalism, looting, or other damaging actions.

The project archaeological consultant shall submit a Final Archaeological Resources Report (FARR) to the ERO that evaluates the historical significance of any discovered archaeological resource and describing the archaeological and historical research methods employed in the archaeological monitoring/data recovery program(s) undertaken. Information that may put at risk any archaeological resource shall be provided in a separate removable insert within the final report.

Copies of the Draft FARR shall be sent to the ERO for review and approval. Once approved by the ERO, copies of the FARR shall be distributed as follows: California Archaeological Site Survey Northwest Information Center (NWIC) shall receive one (1) copy and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The Environmental Planning division of the Planning Department shall receive one bound copy, one unbound copy and one unlocked, searchable PDF copy on CD three copies of the FARR along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest or interpretive value, the ERO may require a different final report content, format, and distribution than that presented above.

Impact CP-2: Construction activities for the proposed project and project variants would cause a substantial adverse change in the significance of human remains, if such resources are present within the project site. ***(Less than Significant with Mitigation)***

Based upon the history of the site and the area, as discussed above in the Environmental Setting, there is a possibility that human remains may be present within the project site. Mitigation Measure M-CP-1a: Archaeological Testing, Monitoring, Data Recovery and Reporting, and Mitigation Measure M-CP-1c: Accidental Discovery, call for compliance with applicable State and Federal laws regarding the treatment of human remains and of associated or unassociated funerary objects discovered during any soils-disturbing activity. This shall include immediate notification of the Coroner of the City and County of San Francisco and, in the event of the Coroner's determination that the human remains are Native American remains, notification of the NAHC, who shall appoint an MLD (Public Resources Code Section 5097.98). The archaeological consultant, project sponsor, and MLD shall make reasonable efforts to develop an agreement for the treatment of, with appropriate dignity, human remains and associated or unassociated funerary objects (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.

With implementation of Mitigation Measure M-CP-1a and Mitigation Measure M-CP-1c, implementation of the proposed project would not cause a substantial adverse change to the scientific significance of an archaeological resource resulting from the disturbance of human remains. Therefore, this impact would be less than significant with mitigation.

CUMULATIVE IMPACT EVALUATION

Impact C-CP-1: Disturbance of archaeological resources, if encountered during construction of the proposed project and project variants, in combination with other past, present, and reasonably foreseeable future projects, would make a cumulatively considerable contribution to a significant cumulative impact on archaeological resources. (*Less than Significant with Mitigation)*

When considered with other past and proposed development projects within San Francisco and the Bay Area region, including development expected in the *Transit Center District Plan* area, the potential disturbance of archaeological resources within the project site could make a cumulatively considerable contribution to a loss of significant historic and scientific information about California, Bay Area, and San Francisco history and prehistory. Similar to the proposed project, the TCDP EIR implemented a mitigation measure to reduce impacts to archaeological resources to a less-than-significant level (TCDP EIR M-CP-1: Subsequent Archeological Testing Program), which includes an archaeological testing program, an archaeological monitoring program, an archaeological data recovery program, a program to address human remains and associated or unassociated funerary objects, and a final archaeological resources report). As discussed above, implementation of the approved plans for testing, monitoring, and data recovery would preserve the information potential of any archaeological resources encountered on the project site. The recovery, documentation, and interpretation of information about archaeological resources that may be encountered within the project site would enhance knowledge of prehistory and history. This information would be available to future archaeological studies, contributing to the collective body of scientific and historic knowledge. With implementation of Mitigation Measure M-CP-1a: Archaeological Testing, Monitoring, Data Recovery and Reporting; Mitigation Measure M-CP-1b: Interpretation; and Mitigation Measure M-CP-1c: Accidental Discovery, the proposed project's contribution to cumulative impacts would not be cumulatively considerable. Therefore, this impact would be less than significant.

E. TRANSPORTATION AND CIRCULATION

INTRODUCTION

As described in Appendix A, the Initial Study, pp. 59-60, considered the issue of transportation impacts and determined that further environmental review was necessary. A *Transportation Impact Study* (TIS) was therefore prepared by the transportation subconsultant for the proposed project, and this section summarizes and incorporates by reference the results of that study.[1] The TIS examined circulation impacts, in terms of intersection Level of Service (LOS); transit impacts; pedestrian impacts; bicycle impacts; loading impacts; emergency vehicle access impacts; parking impacts; and construction impacts. All of these transportation subtopics were considered in the discussions of existing conditions, the Existing plus Project scenario, an Existing plus Public Parking Variant, an Existing plus Residential/Hotel Mixed Use Variant, and the future year 2035 cumulative analysis.

The proposed project and the Public Parking Variant include the same land uses on site and were therefore evaluated together. The only difference between the proposed project and the Public Parking Variant is that the variant would provide more parking spaces. The Residential/Hotel Mixed Use Variant proposal includes a combination of land uses different from both the proposed project and the Public Parking Variant; therefore, it was evaluated separately.

ENVIRONMENTAL SETTING

The project site is located within a developed urban area on the south side of Howard Street at the intersection of Howard and Steuart streets in San Francisco's Financial District. The project site includes the building site on the west side of Steuart Street and the open space improvement site across Steuart Street to the east of the building site. The building site is developed with an 8-level, 540-space parking garage, with the top parking level located on the roof. The existing vehicular and pedestrian access to the parking garage is on Howard Street at the northwest corner of the building. The open space improvement site is undeveloped and paved with asphalt.

The transportation study area is generally two blocks north of the project site, to Market Street; two blocks west of the project site between Main and Beale streets; one and one-half blocks south of the project site between Folsom and Harrison streets; and east to The Embarcadero. The study area, as well as the intersections analyzed in the TIS, are shown in Figure 4.E.1: Transportation Study Area and Intersections Analyzed.

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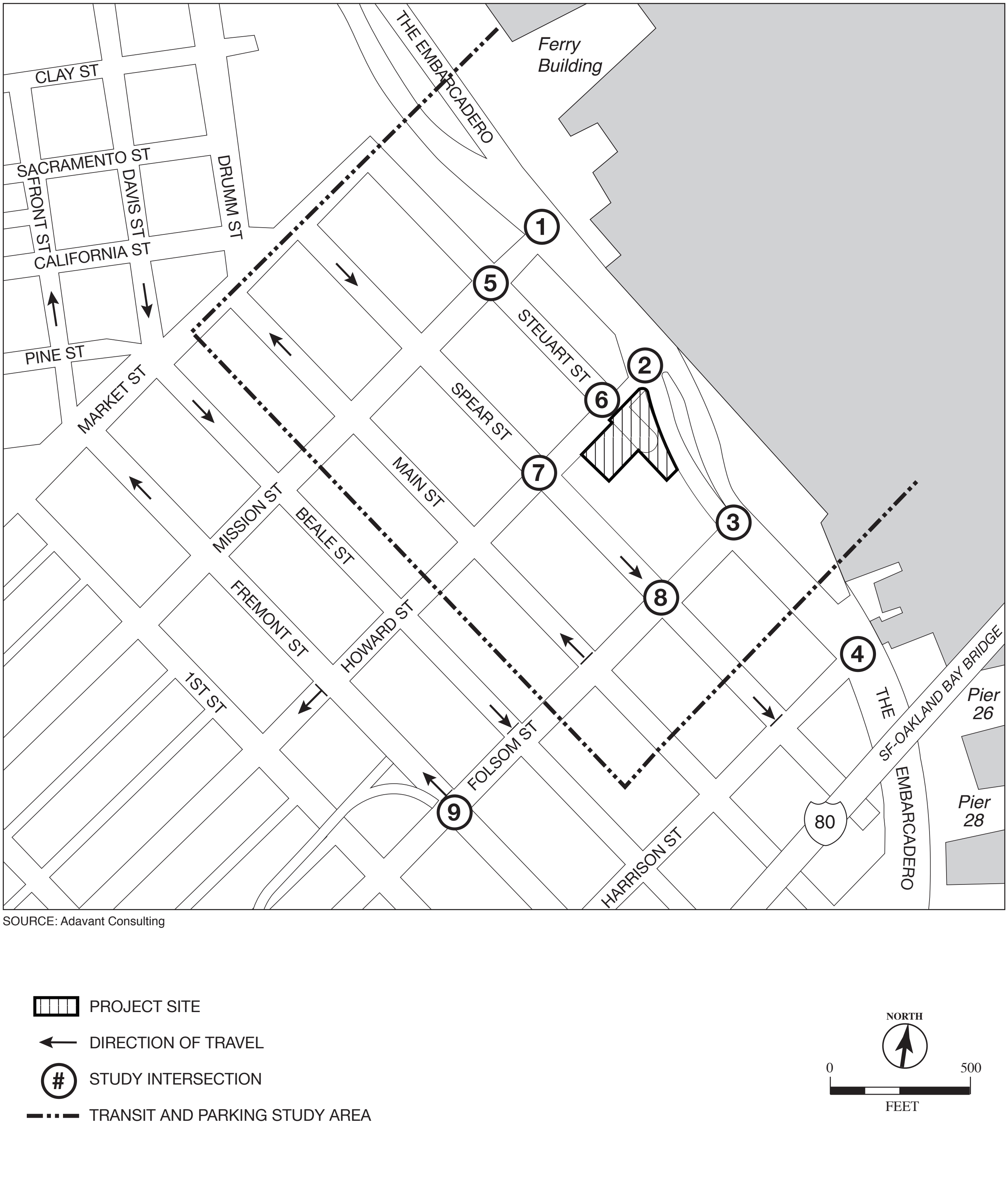
1 Adavant Consulting, *75 Howard Street Project Transportation Study, Case No. 2011.1122!* (hereinafter referred to as "TIS"), July 1, 2013. A copy of this document is available for public review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2011.1122E.



SOURCE: Adavant Consulting

FIGURE 4.E.1: TRANSPORTATION STUDY AREA AND INTERSECTIONS ANALYZED

ROADWAY NETWORK

Regional Access

Regional highway transportation facilities link San Francisco with other parts of the Bay Area, as well as Northern and Southern California. The project site is accessible by local streets with connections to and from regional freeways.

Interstate 80 (I-80) provides regional access to and from the East Bay. The San Francisco-Oakland Bay Bridge is part of I-80 and connects San Francisco with the East Bay and points east. I-80 is located south of the study area, generally between Harrison and Bryant streets. Access to the project site from I-80 westbound is via the Fremont/Folsom and Fremont/Harrison off-ramps, while access to I-80 westbound is via the Fourth/Harrison on-ramp. Access from I-80 eastbound is via the Fourth/Bryant off-ramp, while access to I-80 eastbound is via the First/Harrison, Essex/Harrison and Sterling Street (high-occupancy vehicle [HOV]-only between 3:30 and 7 p.m.) on-ramps.

U.S. 101 provides access to and from both the North Bay and South Bay to the project area. I-80 joins U.S. 101 to the southwest of the project site and provides access to the Peninsula and South Bay. Nearby access to U.S. 101 to the south is provided from I-80, including the on- and off-ramps at Fourth Street. In addition, U.S. 101 connects San Francisco and the North Bay via the Golden Gate Bridge. Within the northern part of San Francisco, U.S. 101 operates on surface streets (Van Ness Avenue and Lombard Street). In addition, U.S. 101 to/from the north can be accessed from Marina Boulevard, via The Embarcadero and Bay Street.

Interstate 280 (I-280) provides regional access from the South of Market area of downtown San Francisco to southwest San Francisco and the South Bay/Peninsula. I-280 and U.S. 101 have an interchange approximately four miles to the south of downtown San Francisco. Nearby access points from the project site to I-280 are located at King Street (at Fifth Street) and Sixth Street (at Brannan Street).

Local Access

This section describes the existing local roadway system in the vicinity of the project site, including the roadway designation, number of travel lanes, and traffic flow directions.

The Embarcadero is a two-way, north-south roadway that connects Second Street in the South Beach area near AT&T Park with Powell Street near Fisherman's Wharf. It generally has two or three travel lanes each way, with a wide center median for the F Market and Wharves streetcar north of Mission Street, and T Third and N Judah light rail lines south of Howard Street. In the vicinity of the project site, The Embarcadero has three northbound travel lanes (two regular lanes plus one tow-away lane during the morning and evening commuter peak traffic periods, 7 to 9 a.m. and 3 to 7 p.m.), one northbound bicycle lane, plus two southbound travel lanes and one southbound bicycle lane. Near the project site, on-street parking is permitted on the west side of The Embarcadero between Mission Street and Folsom Street; on-street parking is also permitted on the east side of The Embarcadero between Folsom Street and Howard Street outside of the peak traffic commute periods (7 to 9 a.m. and 3 to 7 p.m.). The *San Francisco General Plan* (*General Plan*) identifies The Embarcadero as a Major Arterial in the Congestion Management Network, a Metropolitan Transportation System roadway, a Transit Preferential Street, a Neighborhood Pedestrian Street, and a Citywide Bicycle Route (No. 5). In addition, The Embarcadero is designated as part of the Bay, Ridge, and Coast Trail, a recreational pedestrian/bicycle path connecting several Bay Area cities. The *San Francisco Better Streets Plan* identifies The Embarcadero in its entirety as a Parkway.

Steuart Street is a minor north-south roadway that connects Market Street and Howard Street, ending in a cul-de-sac south of Howard Street, north of The Embarcadero. Between Market Street and Mission Street, Steuart Street is two-way; it becomes one-way southbound between Mission Street and Howard Street. In the project site vicinity, Steuart Street has two southbound lanes north of Howard Street and one lane each way south of Howard Street; on-street parking is allowed on both sides. The project building site is located on the west side of the Steuart Street cul-de-sac. The *General Plan* identifies Steuart Street between Market Street and Mission Street as a as a Secondary Arterial, a Transit Conflict Street, a Transit Oriented Street, and a Citywide Bicycle Route (No. 50). The *San Francisco Better Streets Plan* identifies Steuart Street in its entirety as a Downtown Commercial Street.

Spear Street is a north-south roadway that connects Market Street and Harrison Street, ending in a cul-de-sac south of Harrison Street, west of The Embarcadero. Between Market Street and Harrison Street, Spear Street is one-way southbound, while south of Harrison Street it becomes a two-way cul-de-sac roadway. In the project site vicinity, Spear Street generally has two southbound lanes and on-street parking permitted on both sides. Most of the on-street parking north of Howard Street is dedicated to commercial and passenger loading activities. The *San Francisco Better Streets Plan* identifies Spear Street as a Downtown Commercial Street from Market Street to Folsom Street, and as a Downtown Residential Street south of Folsom Street.

Main Street is a north-south roadway that connects Market Street with Bryant Street. South of Folsom Street, Main Street is a two-way roadway with one northbound travel lane and two southbound travel lanes. North of Folsom Street, Main Street operates one-way northbound only, with three travel lanes (one lane is dedicated to transit only between Folsom Street and Howard Street). On-street parking is generally permitted on both sides of the street, except on the west side between Folsom Street and Howard Street. The *General Plan* identifies Main Street as a Metropolitan Transportation System roadway, a Major Arterial in the Congestion Management

Network (between Mission Street and Market Street), and a Transit Preferential Street (between Howard Street and Market Street). The *San Francisco Better Streets Plan* identifies Main Street as a Downtown Commercial Street from Market Street to Folsom Street, and as a Downtown Residential Street south of Folsom Street.

Market Street is a major east-west roadway in downtown San Francisco that connects The Embarcadero with the Twin Peaks area, where it becomes Portola Drive. It operates two-way with generally two travel lanes each way; left turns are not permitted except at Drumm Street. Streetcars operate two-way on the center lanes between Steuart Street and 17th Street; transit stops are located both at the curb and at raised center islands along the corridor. On-street parking is prohibited, with recessed passenger loading and delivery zones on both sides of the street. The *General Plan* identifies Market Street as a Transit Conflict Street in the Congestion Management Network in the vicinity of the project site, and as a Major Arterial elsewhere. Market Street is also classified as a Metropolitan Transportation System roadway, a Transit Preferential Street, a Citywide Pedestrian Street, and a Citywide Bicycle Route (No. 50). The *San Francisco Better Streets Plan* identifies Market Street as a Ceremonial/Civic Street from Steuart Street to Castro Street, and as a Boulevard from Castro Street to Portola Drive.

Mission Street is a major east-west roadway in downtown San Francisco that connects The Embarcadero with Daly City, where it becomes El Camino Real. In the vicinity of the project site Mission Street operates two-way with two travel lanes each way (one lane each way west of Main Street is designated as a transit-only lane on weekdays from 7 a.m. to 6 p.m.). Left turns by vehicles other than buses and taxis are not permitted west of Beale Street. The *General Plan* identifies Mission Street as a Transit Conflict Street in the Congestion Management Network, a Metropolitan Transportation System roadway, and a Transit Preferential Street. The *San Francisco Better Streets Plan* identifies Mission Street as a Downtown Commercial Street from The Embarcadero to 13th Street, as a Mixed-Use Street from 13th Street to 14th Street, and as a Commercial Throughway from 14th Street to the Daly City limits.

Howard Street is a major east-west roadway in downtown San Francisco that connects The Embarcadero with South Van Ness Avenue at 13th Street; the project site is located on the south side of Howard Street between Spear Street and Steuart Street. Howard Street is a two-way arterial with two travel lanes in each direction between The Embarcadero and Fremont Street, and a one-way street west of Fremont Street with four westbound travel lanes. There are on-street parking spaces, some designated for commercial or passenger loading, on both sides of the street. The *General Plan* identifies Howard Street as a Major Arterial in the Congestion Management Network, as a Metropolitan Transportation System Street and a Transit Preferential Street from Main Street to Beale Street, and a Citywide Bicycle Route (No. 30 eastbound). The *San Francisco Better Streets Plan* identifies Howard Street as a Downtown Commercial Street from

The Embarcadero to Fifth Street, as a Mixed-Use Street from Fifth Street to 12th Street, and as a Commercial Throughway from 12th Street to 13th Street.

Folsom Street runs east-west between The Embarcadero and Duboce Avenue and north-south between Duboce Avenue and Alemany Boulevard. It is primarily a four-lane roadway, operating one-way eastbound between Eleventh and Essex streets and two-way between Essex Street and The Embarcadero. On-street parking is generally permitted on both sides of the street near the project site. Folsom Street is a primary eastbound connector to the I-80 freeway ramps in the South of Market area. The *General Plan* identifies Folsom Street as a Major Arterial in the Congestion Management Network from The Embarcadero to 13th Street, and as Citywide Bicycle Route (No. 30 westbound) between The Embarcadero and 11th Street. The *San Francisco Better Streets Plan* identifies Folsom Street as a Downtown Residential Street from The Embarcadero to Essex Street, as a Downtown Commercial Street from Essex Street to Fourth Street, as an Industrial Street from Fourth Street to Fifth Street, as a Mixed-Use Street from Fifth Street to Sixth Street and from Seventh Street to 19th Street, as a Commercial Throughway from Sixth Street to Seventh Street, and as a Neighborhood Residential Street south of 19th Street.

Harrison Street runs in the east-west direction between The Embarcadero and 13th/Division Street, operating one-way westbound from Third Street to Tenth Street, and runs in the north-south direction beginning at 13th/Division Street, ending south of César Chávez Street in Bernal Heights at Norwich Street. On-street parking is generally permitted on both sides of the street in the vicinity of the project site. Harrison Street is a primary route to the I-80 freeway, with on-ramps at the First Street and Essex Street intersections, and to U.S. 101 southbound, with an on-ramp at Fourth Street. The *General Plan* identifies Harrison Street as a Major Arterial in the Congestion Management Network from The Embarcadero to Division Street, a Primary Transit Street from Fourth Street to Seventh Street, a Secondary Transit Street from Seventh Street to 11th Street, and a Neighborhood Commercial Pedestrian Street from Fourth Street to 16th Street. The *San Francisco Better Streets Plan* identifies Harrison Street as a Downtown Residential Street from The Embarcadero to Essex Street, as a Mixed-Use Street from Essex Street to 20th Street, as a Neighborhood Residential Street from 19th Street to César Chávez Street, and as an Alley south of César Chávez Street.

Intersection Operating Conditions

The nine intersections in the vicinity of the project site listed below were analyzed for intersection LOS during the weekday p.m. peak hour (the highest 60-minute period between 4 and 6 p.m.). All of the study intersections have traffic signals. The locations of these nine intersections relative to the project site are shown in Figure 4.E.1 on p. 4.E.2.

1. The Embarcadero/Mission Street

2. The Embarcadero/Howard Street
3. The Embarcadero/Folsom Street
4. The Embarcadero/Harrison Street
5. Steuart Street/Mission Street
6. Steuart Street/Howard Street
7. Spear Street/Howard Street
8. Spear Street/Folsom Street
9. Fremont Street/Folsom Street/I-80 WB off-ramp

Vehicle turning movement counts at 15-minute intervals were collected for The Embarcadero and Howard Street, The Embarcadero and Folsom Street, Steuart and Mission streets, Steuart and Howard streets, Spear and Howard streets, and Spear and Folsom streets intersections on Thursday, June 28, 2012 during the weekday p.m. peak period, from 4 p.m. to 6 p.m. Weekday p.m. peak hour vehicle turning movement volumes for The Embarcadero and Mission Street, The Embarcadero and Harrison Street, and Fremont and Folsom streets intersections were obtained from the transportation analysis that had been conducted as part of the 34th America's Cup and James R. Herman Cruise Terminal and Northeast Wharf Plaza projects; those counts were collected in February 2011.[2]

Intersection Level of Service (LOS) Conditions

The operating characteristics of signalized intersections are described by the concept of Level of Service (LOS). LOS is a qualitative description of the performance of an intersection based on the average delay per vehicle. Intersection levels of service range from LOS A, which indicates free flow or excellent conditions with short delays, to LOS F, which indicates congested or overloaded conditions with extremely long delays. LOS A through LOS D are considered excellent to satisfactory service levels, LOS E is undesirable, and LOS F conditions are unacceptable. In San Francisco, LOS E and F are considered unacceptable operating conditions for signalized intersections.

The study intersections have been evaluated using the *2000 Highway Capacity Manual* (HCM) methodology for signalized intersections, which determines the capacity for each lane group approaching the intersection. The LOS is based on average delay (in seconds per vehicle) for the various movements within the intersection. A combined weighted average delay and LOS are presented for the intersection.

[2] TIS, p. 18.

The results of the intersection LOS analysis for the existing weekday p.m. peak hour conditions are presented in Table 4.E.1: Existing Intersection Level of Service (Weekday PM Peak Hour). During the weekday p.m. peak hour, all nine study intersections operate at acceptable LOS (LOS D or better), with average delays per vehicle of less than 45 seconds. The four intersections along The Embarcadero plus the I-80 freeway off-ramp experience the highest average delays (LOS D).

Table 4.E.1: Existing Intersection Level of Service (Weekday PM Peak Hour)

Intersection[a]		Delay [b]	Level of Service
1	The Embarcadero/Mission St.	36.3	D
2	The Embarcadero/Howard St.	44.6	D
3	The Embarcadero/Folsom St.	42.8	D
4	The Embarcadero/Harrison St.	40.3	D
5	Steuart St./Mission St.	17.1	B
6	Steuart St./Howard St.	14.3	B
7	Spear St./Howard St.	24.4	C
8	Spear St./Folsom St.	16.0	B
9	Fremont St./Folsom St./I-80 WB off-ramp	35.4	D

Notes:
[a] Intersection numbers are shown on Figure 4.E.1 on p. 4.E.2.
[b] Intersection delay is presented in seconds per vehicle.

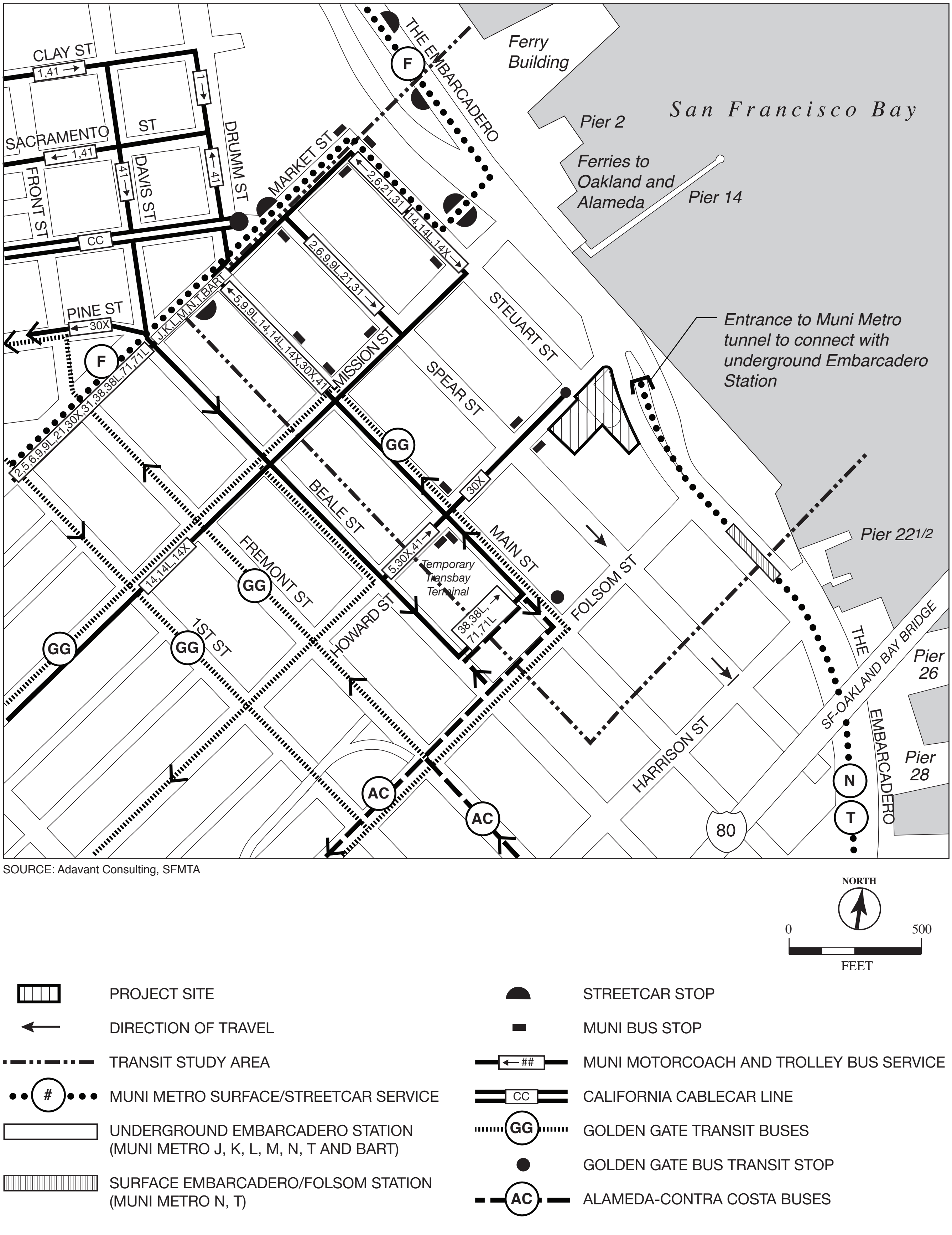
Source: Adavant Consulting, July 2013

TRANSIT NETWORK

The project site is well served by public transit, with both local and regional service provided in the vicinity. The San Francisco Municipal Railway provides local transit service. Service to and from the East Bay is provided by the Bay Area Regional Transit system (BART), Alameda-Contra Costa Transit (AC Transit), and ferries; service to and from the South Bay and the Peninsula is provided by BART, San Mateo County Transit (SamTrans), and Caltrain; service to and from the North Bay is provided by Golden Gate Transit (GGT) buses and ferries. The project site is located near the ferry terminals at the Ferry Building, and near the Embarcadero Muni and BART stations. Figure 4.E.2: Existing Transit Network Near Project Site presents the transit service and stop locations in the vicinity of the proposed project.

Local and Regional Providers

Transit conditions were examined within a study area generally bounded by Market Street to the north, Main Street to the west, Folsom Street to the south, and The Embarcadero to the east.



SOURCE: Adavant Consulting, SFMTA

75 HOWARD STREET

FIGURE 4.E.2: EXISTING TRANSIT NETWORK NEAR PROJECT SITE

San Francisco Municipal Railway (Muni) provides transit service within the City and County of San Francisco, including bus (both diesel and electric), light rail (Muni Metro), cable car, and electric streetcar lines. Muni operates 16 motor coach and trolleybus lines in the vicinity of the project site, including the 2 Clement, 5 Fulton, 6 Parnassus, 9/9L San Bruno, 14/14L/14X Mission, 21 Hayes, 30X Marina Express, 31 Balboa, 38/38L Geary, 41 Union, and 71/71L Haight-Noriega. Most of the lines have their closest stop between Mission Street and Market Street. The 30X Marina Express line, which operates during the peak commute periods only, has one inbound and one outbound stop on Howard Street between Steuart and Spear streets, next to the project site.

In addition, the F Market and Wharves historic streetcar line runs in a mixed-traffic lane on Market Street and in a semi-exclusive median along The Embarcadero, with the closest inbound and outbound stops located at Don Chee Way, between Steuart Street and The Embarcadero. The Muni Metro N Judah and T Third light rail lines enter and exit the underground Market Street tunnel via The Embarcadero north of Folsom Street; the closest inbound and outbound stops are located in The Embarcadero median between Folsom and Harrison streets. Additional Muni Metro light rail service is provided underneath Market Street by the K Ingleside, L Taraval, and M Ocean View lines. The closest stop for the Muni Metro underground is at the Embarcadero Station.

Utilization of Muni lines operating in the vicinity of the project site is shown in Table 4.E.2: Existing Muni Service Utilization. The data is shown for weekday p.m. peak and Saturday midday peak hours based on ridership and capacity data provided by the San Francisco Municipal Transportation Agency (SFMTA) at the maximum load point (MLP).[3] The MLP is the location where the route has its highest number of passengers relative to capacity. Muni assigns a maximum capacity estimate to each line based on the capacity of each vehicle type operating on a transit line, including standing and sitting passengers. Muni's maximum utilization factor for planning purposes is 85 percent of the maximum vehicle capacity.

As shown in Table 4.E.2, the lines that operate in the vicinity of the project site during the weekday p.m. peak hour, with the exception of the 30X Marina Express, currently operate below Muni's maximum utilization factor (85 percent) and have available capacity at the MLP to accommodate additional passengers. The 30X Marina Express operates at 86 percent of capacity

[3] Weekday p.m. peak hour data is based on SF Muni monitoring data for 2010 (rail) and 2011 (buses); Saturday midday data represents 2010 conditions and was developed as part of the transportation analyses performed for the 34th America's Cup and James R. Herman Cruise Terminal and Northeast Wharf Plaza (FEIR Volume 4, Section 5, Transit Analysis Calculations). A copy of this document is available for public review at the San Francisco Planning Department, 1650 Mission Street, Suite 400.

Table 4.E.2: Existing Muni Service Utilization

Route Name and Number	Direction toward	Maximum Load Point (MLP)			
		Location	Ridership	Capacity	Utilization [b]
Weekday PM Peak Hour					
5 Fulton/5L Fulton Limited	Financial District	McAllister/Laguna	600	840	71%
	Richmond District	McAllister/Van Ness	659	798	83%
30X Marina Express	Financial District	No PM Service			
	Marina	Sansome/Washington	432	504	**86%**
41 Union	Financial District	Clay/Montgomery	135	473	29%
	Cow Hollow/Presidio	Union/Columbus	398	473	84%
N Judah	Caltrain Depot	Carl/Cole	880	1,904	46%
	Sunset District	Van Ness Station	1,773	2,131	83%
T Third	Sunnydale	Embarcadero/Folsom	550	714	77%
	Castro District	Van Ness Station	365	830	44%
Saturday Midday Peak Hour					
5 Fulton/5L Fulton Limited	Financial District	McAllister/Octavia	357	441	81%
	Richmond District	McAllister/Van Ness	350	441	79%
N Judah	Caltrain Depot	Carl/Cole	280	714	39%
	Sunset District	Sunset Tunnel	260	714	36%
T Third	Sunnydale	Civic Center Station	244	595	41%
	Castro District	Powell Station	217	595	36%

Note:
Grey shading indicates that value exceeds Muni capacity utilization policy standard of 85 percent of capacity. Muni vehicle capacity includes a range of seated and standing passengers.
Source: SFMTA Transit Ridership Counts 2010/2011, Adavant Consulting, July 2013

in the outbound direction (toward the Marina) during the weekday p.m. peak period. This value means that passengers experience crowded conditions, with more than a few standing. The MLPs for all the Muni routes (excluding the southbound N Judah, but including the 30X Marina Express) are located far from the project site, which means that there likely would be more capacity available on these routes near the project site, compared to the MLP.

All the lines currently operate below Muni's maximum utilization factor during the Saturday midday peak hour. Overall Saturday ridership during the midday peak hour is approximately 30 percent of the weekday p.m. peak hour ridership, while the overall Muni capacity on Saturday is 40 percent of the weekday p.m. peak hour capacity. This results in better overall Saturday utilization ratios, with the exception of the inbound 5 Fulton line which has a higher utilization on Saturday (81 percent) than on a weekday (71 percent).

San Francisco Bay Area Rapid Transit (BART) operates regional rail transit service between the East Bay (from Pittsburg/Bay Point, Richmond, Dublin/Pleasanton and Fremont) and San Francisco, and between San Mateo County and San Francisco. Within downtown San Francisco, BART operates underground below Market Street. During the weekday p.m. peak period, frequencies are about 5 to 15 minutes for each line. The nearest BART station to the project site is the Embarcadero Station, located about ¼ mile north of the project site. Average weekday ridership to and from San Francisco County is approximately 161,400 passengers.[4]

Peninsula Rail Corridor (Caltrain) provides rail passenger service on the Peninsula between Gilroy and San Francisco. The San Francisco terminal is located at Fourth and Townsend streets, in the South of Market area (about 1.25 miles southwest of the project site). Caltrain currently operates 86 trains each weekday, with a combination of local, limited stops and Baby Bullet services. Frequencies during the evening peak period are approximately 5 to 30 minutes with an average weekday ridership to and from San Francisco of approximately 9,800 passengers.[5]

San Mateo County Transit District (SamTrans) provides bus service between San Mateo County and San Francisco. It operates 10 bus lines that serve San Francisco, including 7 express routes. In general, SamTrans service to downtown San Francisco operates along Mission Street to the temporary Transbay Transit Terminal located on Howard Street between Main and Beale streets, two blocks west of the project site. The total average weekday ridership for SamTrans' fixed route bus service is over 44,000 passengers per day.[6]

Golden Gate Transit (GGT), operated by the Golden Gate Bridge, Highway, and Transportation District, provides bus service between the North Bay (Marin and Sonoma counties) and San Francisco. GGT operates 22 commuter bus routes, 9 basic bus routes and 16 ferry feeder bus routes into San Francisco, several of which are at or near the temporary Transbay Terminal, located on Howard Street between Main and Beale streets, two blocks west of the project site. Basic bus routes operate at regular intervals of 15 to 90 minutes depending on the time and day of week. Commute and ferry feeder bus routes operate at more frequent intervals in the mornings and evenings.

GGT also operates ferry service between the North Bay and San Francisco. During the morning and evening commute periods, ferries are operated between Larkspur and San Francisco, and between Sausalito and San Francisco. The San Francisco terminal is located at the Ferry Building, about ¼ mile north of the project site. In total, GGT bus transit has an average weekday patronage of around 23,000 and approximately 9,400 riders traveling to and from San Francisco in the weekday morning and afternoon peak periods. The ferry system has an average weekday ridership of 7,200 passengers per day traveling to and from San Francisco.[7]

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4 TIS, p. 30, citing BART Fiscal Year 2011 Average weekday exit data.
5 TIS, p. 30, citing Caltrain Annual Passenger Counts, February 2011.
6 TIS, p. 30, citing SamTrans Weekday Ridership Data, August 2012.
7 TIS, p. 30, citing GGT Bus and Ferry Systems Performance Report – May 2012.

Alameda-Contra Costa Transit (AC Transit) is the primary bus operator for the East Bay, including Alameda and western Contra Costa counties. AC Transit operates 33 routes between the East Bay and San Francisco, all of which terminate at the temporary Transbay Terminal, located two blocks west of the project site. Most Transbay service is peak-hour and peak-direction (to San Francisco during the a.m. peak period and from San Francisco during the p.m. peak period), with frequency of 15 to 30 minutes. AC Transit has an average daily Transbay ridership of approximately 14,000 passengers.[8]

The **Water Emergency Transportation Authority (WETA)** was charged in 2008 with creating and adopting a Transition Plan for Bay Area ferry service in Senate Bill 1093. As of July 2012, WETA is responsible for operating San Francisco Bay Ferry service that serves Oakland (Jack London Square), Alameda (Harbor Bay and Main Street/Gateway), San Francisco (Downtown Ferry Building and Pier 41), South San Francisco (Oyster Point Marina), and Vallejo. Seasonal service is also provided to Angel Island and AT&T Park. Approximately 2,500 passengers are carried to and from San Francisco during a typical weekday with 25 total daily round-trips,[9] 10 of them during each peak commute period.

Muni Screenline Analysis

The availability of Muni service capacity was analyzed in terms of a series of screenlines. Screenlines are used to describe the magnitude of travel to or from specific areas, in this case, the greater downtown area. Screenlines are used to compare estimated transit volumes to available capacities; screenlines are hypothetical lines that would be crossed by persons traveling between downtown and other parts of San Francisco and the region.

Four screenlines have been established in San Francisco to analyze potential impacts of projects on Muni service: northeast, northwest, southwest, and southeast, with subcorridors within each screenline. The bus and light rail lines used in this screenline analysis are considered the major commute routes to and from the downtown area.[10] For the purpose of this analysis, Muni ridership measured at the four San Francisco screenlines and subcorridors represents the peak direction of travel and passenger loads for the Muni system, which corresponds with the evening commute in the outbound direction from the downtown area.

As a means to determine the amount of available capacity within each screenline, a capacity utilization measure is used, which relates the number of passengers per transit vehicle to the design capacity of the vehicle. In contrast to other transit operators, Muni has established a

[8] TIS, p. 31, citing AC Transit Transbay Commuters, FY 2009-10.
[9] TIS, p. 31, citing San Francisco Bay Ferry, June 2012 data.
[10] Other bus lines, generally low service lines or neighborhood connectors and lines with infrequent service, are not included due to their generally lower ridership.

capacity utilization service standard which includes seated and standing capacity, with standing passengers representing somewhere between 30 to 80 percent of seated passengers, depending upon the specific configuration of the transit vehicles.

Muni screenlines and subcorridors at or near capacity operate under noticeably crowded conditions with many standing passengers. Because each screenline and most subcorridors include multiple lines, each with several vehicles crossing a screenline during the peak hour, some individual vehicles may operate above capacity and be extremely crowded, while others may be less crowded. Moreover, crowding is exacerbated whenever target frequency of service is not met through either missed runs or bunching of transit vehicles while in service. Thus, transit operators may experience substantial problems in service delivery well short of established service capacity standards. The existing outbound transit passenger load, capacity and capacity utilization at each Muni screenline during the weekday p.m. peak hour are presented in Table 4.E.3: Muni Screenline Analysis for Existing Conditions in Outbound Direction (Weekday PM Peak Hour).

Table 4.E.3: Muni Screenline Analysis for Existing Conditions in Outbound Direction (Weekday PM Peak Hour)

Screenline	Ridership	Capacity	Utilization
Northeast			
Kearny/Stockton	2,158	3,291	66%
Other Lines	570	1,078	53%
Subtotal	*2,728*	*4,369*	*62%*
Northwest			
Geary	1,814	2,528	72%
California	1,366	1,686	81%
Sutter/Clement	470	630	75%
Fulton/Hayes	965	1,176	82%
Balboa	637	929	69%
Subtotal	*5,252*	*6,949*	*76%*
Southeast			
Third Street	550	714	77%
Mission Street	1,529	2,789	55%
San Bruno/Bayshore	1,320	2,134	62%
Other Lines	1,034	1,712	60%
Subtotal	*4,433*	*7,349*	*60%*
Southwest			
Subway Lines	4,598	6,294	73%
Haight/Noriega	1,105	1,651	67%
Other Lines	276	700	39%
Subtotal	*5,979*	*8,645*	*69%*
Total All Screenlines	**18,392**	**27,312**	**67%**

Source: SFMTA Transit Ridership Counts 2010/2011, Adavant Consulting, July 2013.

As shown in Table 4.E.3, a total of 18,392 passengers cross the four Muni screenlines during the weekday p.m. peak hour. These trips are distributed as follows: 2,728 (15 percent) cross the northeast screenline, 5,252 (29 percent) cross the northwest screenline, 4,433 (24 percent) cross the southeast screenline and 5,979 (33 percent) cross the southwest screenline.

Capacity utilization of the screenlines is between 60 and 76 percent; all the screenlines and subcorridors are currently operating below the level of service standard of 85 percent.

Muni Transit Effectiveness Project Service Changes

The Transit Effectiveness Project (TEP) consists of a review of San Francisco's public transit system by SFMTA in collaboration with the City Controller's Office to improve reliability, reduce travel times, provide more frequent service, and update Muni bus routes and rail lines to better match current travel patterns. The TEP recommendations were unanimously endorsed for the purposes of environmental review by the SFMTA Board of Directors on October 21, 2008. They include new routes and route extensions, more service on busy routes, and elimination or consolidation of certain routes or route segments with low ridership.

Initial recommendations were implemented between December 2009 and September 2010 based on findings from 2008. A full Implementation Strategy was developed in 2011. The following changes are proposed by the TEP for lines[11] in the project vicinity:

- A new E Embarcadero streetcar line would provide transit between the Caltrain Depot at Fourth and Townsend streets and Fisherman's Wharf via King Street and The Embarcadero to reduce crowding on the waterfront portion of the F Market and Wharves line. The proposed frequency would be 15 minutes during daytime and 20 minutes in the evening.
- No route changes are proposed for the F Market and Wharves streetcar line, but in the near term, service would be increased at midday and during the p.m. peak, as additional service would be shifted from the a.m. peak to midday and p.m. peak to reduce crowding during the busiest times of day. The proposed frequency (after implementation of the E Embarcadero line) would be seven to eight minutes during the a.m. peak commute and midday periods, 5 minutes during the p.m. peak commute period, and 15 minutes in the evening.
- No route or frequency changes are proposed for the K Ingleside, L Taraval, M Ocean View, or T Third Metro lines. Distant segments of the K Ingleside, L Taraval and M Ocean View lines are identified in the TEP as part of the transit Travel Time Reduction Proposals for the Rapid Network, with planned improvements at a program level; i.e., no specific projects along those segments.

[11] TIS, p. 34, citing TEP Implementation Strategy, Draft 1 Report prepared by Parsons Brinckerhoff for SFMTA, April 5, 2011.

- No route changes are proposed for the N Judah Metro line, but more frequent service is proposed during peak hours to augment capacity and reduce crowding. This would change the current frequencies from 7 to 6 minutes during peaks, and 10 minutes midday and in the evening.
- No route changes are proposed for the 1 California line. Proposed frequencies would be 6 to 7 minutes during peak demand, 5 minutes during midday, and 12 minutes in the evening east of Presidio Avenue. Segments of the 1 California (not near the project vicinity) are identified in the TEP as a Rapid Network line and part of the transit Travel Time Reduction Proposals, with planned improvements at a program level.
- The 2 Clement line would add supplemental service between downtown and Presidio Avenue to maintain existing frequencies on Sutter and Post streets, replacing the discontinued 3 Jackson. The proposed frequencies east of Market Street would be 10 minutes during the peak demands, and 20 minutes during midday and in the evening.
- No route or frequency changes for the 6 Parnassus, 9 San Bruno, and 9L San Bruno Limited lines are proposed near the project site. The 9 and 9L lines are identified in the TEP as part of the transit Travel Time Reduction Proposals for the Rapid Network, with planned improvements at a program level.
- Service hours would be expanded for the 14L Mission Limited to operate from 6 a.m. to 8 p.m. Limited-stop service frequencies on the 14L would be augmented to 7 - 8 minutes during peak hours, 9 minutes midday, and 15 minutes (7 to 8 minutes when combined with the 49L) during the evening. The 14 and 14L lines are identified in the TEP as a Rapid Network line and part of the transit Travel Time Reduction Proposals, with planned project-level improvements. In the downtown and South of Market areas, these projects include the conversion of side-running transit-only lanes to center-running transit-only lanes and the addition of center-boarding islands between First and Fifth streets outbound and First to Sixth streets outbound, relocating existing stops, installing new transit bulbs, creating signalized transit queue jumps, and implementing right-turn only restrictions. No route or frequency changes are proposed for the 14X Mission Express.
- No route changes are proposed for the 21 Hayes. The frequency of service during peak hours would increase to 8 minutes.
- No route or frequency changes are proposed for the 30X Marina Express.
- No route changes are proposed for the 31 Balboa. The frequency of service during the p.m. peak hour would increase from 14 to 12 minutes.
- No route or frequency changes are proposed for the 41 Union. The frequency of service during peak hours would increase to 7 minutes.

Regional Transit Screenline Analysis

A screenline analysis was also performed on the regional transit carriers (AC Transit, BART, Caltrain, GGT, and SamTrans), in order to determine their current capacity utilization. Three regional screenlines have been established around San Francisco to analyze potential impacts of projects on the regional transit carriers: East Bay, North Bay, and South Bay. For the purpose of this analysis, the ridership and capacity at the three screenlines represents the peak direction of travel and passenger loads, which corresponds with the evening commute in the outbound direction from downtown San Francisco.

Capacity utilization is used to determine the amount of available space for each regional transit provider. The capacity is based on the number of seated passengers per vehicle, plus an allowed number of standees for most regional providers except Golden Gate Transit buses, with a one-hour load factor standard of 100 percent, which would indicate that all seats plus any allowed standee spaces are full.

Existing weekday p.m. peak hour ridership and capacity information for each of the regional screenlines is shown in Table 4.E.4: Regional Transit Screenline Analysis for Existing Conditions in Outbound Direction (Weekday PM Peak Hour). BART, AC Transit, SamTrans, Caltrain, and Golden Gate Transit all operate under 100 percent utilization, which indicates that seats are generally available and vehicles on average are not severely overcrowded. The highest utilization rate occurs for BART for the East Bay screenline (89 percent) and Caltrain rail service for the South Bay screenline (77 percent).

Table 4.E.4: Regional Transit Screenline Analysis for Existing Conditions in Outbound Direction (Weekday PM Peak Hour)

Screenline	Ridership	Capacity	Utilization
East Bay			
BART	19,716	22,050	89%
AC Transit	2,256	3,926	57%
Ferries	805	1,615	50%
Subtotal	*22,777*	*27,591*	*83%*
North Bay			
GGT buses	1,384	2,817	49%
Ferries	968	1,959	49%
Subtotal	*2,352*	*4,776*	*49%*
South Bay			
BART	10,682	14,910	72%
Caltrain	2,377	3,100	77%
SamTrans	141	320	44%
Subtotal	*13,200*	*18,330*	*72%*
Total All Screenlines	**38,329**	**50,697**	**76%**

Source: SF Planning Department, December 2012, Adavant Consulting, July 2013

PEDESTRIAN CONDITIONS

In the vicinity of the project site, sidewalks on Howard Street are 14 to 15 feet wide, 14 feet wide on Spear Street, and 16 feet wide on Steuart Street. Crosswalks and pedestrian count-down signals are provided at the intersections of Howard Street with The Embarcadero, and Steuart Street and Spear Street. Crosswalks are 10 to 12 feet wide.

Pedestrian counts were conducted on Saturday, June 23, 2012, from 11 a.m. to 1 p.m., and on Thursday, June 28, 2012, from 4 p.m. to 6 p.m., at 15-minute intervals. The Ferry Plaza Farmers Market was in operation on both days. The count locations include crosswalks at the intersections of Howard Street and Spear Street and Howard Street and Steuart Street, as well as the two sidewalks adjacent to the project site (south side of Howard Street and west side of Steuart Street).

Pedestrian volumes are generally moderate in the vicinity of the project site with the majority of pedestrians during the p.m. peak hour heading west, towards the temporary Transbay Transit Terminal, or north to other transit providers in the area on and around Market Street. During the Saturday midday peak hour, pedestrian volumes towards The Embarcadero are more prevalent, with total flows higher than those observed on weekdays. This is likely due to the discounted parking available at the 75 Howard Garage for Saturday shopping.

The results of the pedestrian sidewalk and crosswalk analyses for the existing weekday p.m. peak hour and Saturday midday peak hour conditions are shown in Table 4.E.5: Existing Pedestrian Level of Service (Weekday and Saturday Peak Hour).[12] All study sidewalks and crosswalks operate at acceptable conditions (LOS C or better) during both weekday and Saturday peak hours. Under these conditions, pedestrians are able to move freely, with only minor conflicts.

BICYCLE CONDITIONS

Bicycle counts were also collected on eastbound and westbound Howard Street in front of the project site at 15-minute intervals on the same days and time periods as the pedestrian counts.

Three classes of bikeways exist in San Francisco: Class I, Class II, and Class III facilities. Class I bike paths provide a completely separated right-of-way for the exclusive use of bicycles and pedestrians. Class II bicycle lanes provide a designated striped lane on a street or highway. Class Ill bikeways are signed bicycle routes that share lanes with motor vehicle traffic and generally have striping or signage indicating its designation as shared. As shown in Figure 4.E.3: Existing Bicycle Routes Near Project Site, p. 4.E.20, bicycle routes in the vicinity of the project site are predominantly Class II and III facilities and are part of the Citywide Bicycle Network providing access between the study area and locations throughout the City.

- Bicycle Route No. 5 runs northbound and southbound on The Embarcadero and is a Class II facility.

[12] Appendix F to the TIS contains the pedestrian LOS descriptions and the detailed calculations of the LOS analysis.

Table 4.E.5: Existing Pedestrian Level of Service (Weekday and Saturday Peak Hour)

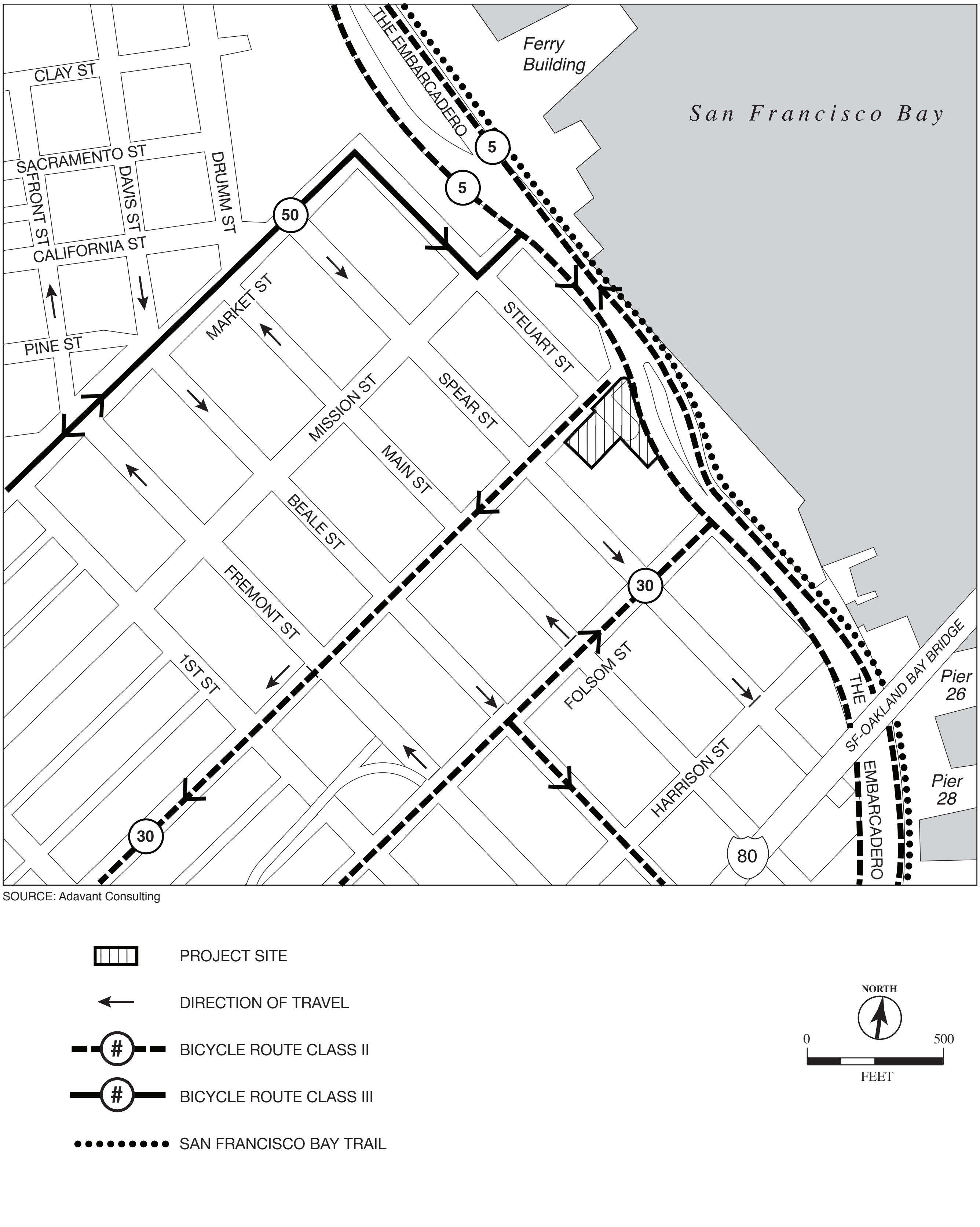
Location	Weekday PM Peak Hour		Saturday Midday Peak Hour	
Sidewalks	**Pedestrian Unit Flow (ped./min./ft.)**	**Level of Service**	**Pedestrian Unit Flow (ped./min./ft.)**	**Level of Service**
South side of Howard St., west of the garage entrance	0.53	B	0.44	A
South side of Howard St., east of the garage entrance	0.47	A	0.84	B
West side of Steuart St., south of Howard St	0.44	A	0.30	A
Crosswalks	**Circulation Area (ft^2/ped)**	**Level of Service**	**Circulation Area (ft^2/ped)**	**Level of Service**
N-S crosswalk on the east side of Spear St./Howard St.	36.3	C	72.3	A
E-W crosswalk on the south side of Spear St./Howard St.	38.0	C	57.5	B
E-W crosswalk on the south side of Steuart St./Howard St.	90.0	A	31.2	C

Notes:
ped./min./ft. = pedestrians per minute per foot; ft^2/ped = square feet per pedestrian.
Source: Adavant Consulting, July 2013

- Bicycle Route No. 30 runs westbound on Howard Street as a Class II facility between The Embarcadero and 11th Street, with the exception of the segment between Main Street and Beale Street, which will remain a Class III shared bicycle lane while the temporary Transbay Terminal is in operation. As described below, the portion of the westbound Class II bicycle lane between The Embarcadero and Main Street was implemented in mid-November 2012 as part of the *San Francisco Bicycle Plan* near-term bicycle improvement project 2-9.
- Bicycle Route No. 30 runs eastbound on Folsom Street as a Class II facility from 14th Street to The Embarcadero.
- Route No. 50 runs eastbound and westbound on Market Street (connecting to The Embarcadero via Steuart and Mission streets) and is a Class III facility from Steuart Street to Eighth Street, and a Class II facility between Eighth Street and 17th Street.

In general, during both the weekday evening and Saturday midday periods, bicycle conditions were observed to be operating acceptably, with only minor conflicts between bicyclists, pedestrians, and vehicles.

Table 4.E.6: Existing Bicycle Volumes on Howard Street (Weekday and Saturday Peak Hour), summarizes bicycle counts conducted on Howard Street in front of the project site on Thursday, June 28, 2012, between 4 p.m. and 6 p.m. and on Saturday, June 23, 2012, between 11 a.m. and 1 p.m. As shown in the table, Saturday bicycle flows are about one-third lower than on weekdays.



SOURCE: Adavant Consulting

FIGURE 4.E.3: EXISTING BICYCLE ROUTES NEAR PROJECT SITE

Table 4.E.6: Existing Bicycle Volumes on Howard Street (Weekday and Saturday Peak Hour)

Location	Number of Bicyclists Weekday PM Peak Hour	Saturday Midday Peak Hour
Eastbound Howard St., between Spear St. and Steuart St.	12	5
Westbound Howard St., between Steuart St. and Spear St.	24	9
Total both ways	**36**	**14**

Source: Adavant Consulting, July 2013

The *San Francisco Bicycle Plan*, approved in June 2009, proposes new markings and signage to improve conditions for bicycle use along Mission Street between The Embarcadero and Steuart Street, and on Steuart Street between Market Street and Mission Street. The Bicycle Plan also implemented a bicycle improvement on Howard Street near the project site in November 2012. A new westbound Class II bicycle lane has been striped along Howard Street, between The Embarcadero and Main Street in front of the project site by narrowing travel lanes in both directions on Howard Street from The Embarcadero to Steuart Street, removing one eastbound travel lane between Spear Street and Steuart Street, and converting one of the two eastbound travel lanes between Main Street and Spear Street to a right-turn only lane (excepting Muni). This was part of the Bicycle Plan Route No. 30. The segment between Main Street and Beale Street will remain a Class III shared bicycle lane while the temporary Transbay Terminal is in operation.

LOADING CONDITIONS

Loading conditions were examined within a study area generally bounded by Market Street to the north, Main Street to the west, Folsom Street to the south, and The Embarcadero to the east. Existing loading conditions, including passenger and commercial loading, in the study area were qualitatively assessed during field observations conducted in June 2010.

Commercial Loading/Unloading

On-street commercial (yellow) loading zones are provided to allow commercial vehicles (typically trucks and service vehicles) to park along the curb to unload or load goods. These spaces are frequently used by building service vehicles and contractors maintaining buildings with no supply of off-street parking. Commercial loading zones are generally regulated by meters, with limits ranging from 30 minutes to two hours, and are generally in effect from 7 a.m. to sometime between 3 p.m. and 6 p.m. weekdays and Saturdays.

The vast majority of the on-street parking spaces provided on Spear Street and Steuart Street north of Howard Street are designated for commercial loading with over 65 spaces available on Spear Street, and 40 spaces on Steuart Street. Howard Street has 5 commercial loading spaces between Main Street and The Embarcadero, and Spear Street has 9 commercial loading spaces south of Howard Street. There are no commercial loading spaces provided on the street adjacent to the project site; all the spaces adjacent to the site are standard parking meters.

The current on-street loading zones are typically well-occupied throughout the day (between 50 and 75 percent occupied).[13] However, periods of higher usage are concentrated in the early mornings (primarily deliveries to restaurants and stores) and during the midday period (primarily package and mail deliveries).[14] Construction activities were underway on Spear Street at the time that field observations were conducted, which eliminated several on-street commercial loading spaces. As a result, delivery/service vehicles were observed to double-park in the adjacent travel lane on Spear Street or at fire hydrant red zones. During these times, minor congestion occurred, with impacts to traffic, transit, and bicycle flows as vehicles attempted to maneuver around the stopped truck.

On-street commercial loading/unloading counts were conducted on Howard Street, in front of the project site, on Thursday, June 28, 2012, between 4 p.m. and 6 p.m. and on Saturday, June 23, 2012, between 11 a.m. and 1 p.m.; the counts are summarized in Table 4.E.7: Commercial Vehicle Loading/Unloading on Howard Street, Existing Conditions (Weekday and Saturday Periods). Overall delivery/service vehicle occupancies in the area are the same on Saturdays as on weekdays, a total of tour commercial vehicles during the two-hour period.

Table 4.E.7: Commercial Vehicle Loading/Unloading on Howard Street, Existing Conditions (Weekday and Saturday Periods)

Location	Weekday 4 to 6 p.m.	Saturday 11 a.m. to 1 p.m.
North side of Howard St., between Spear St. and Steuart St.		
Total number of vans or trucks loading/unloading	3	4
Number of vans or trucks double parked	2	0
Average duration (minutes)	3 minutes	1 minute
South side of Howard St., between Spear St. and Steuart St.		
Total number of vans or trucks loading/unloading	1	0
Number of vans or trucks double parked	1	0
Average duration (minutes)	3 minutes	N/A

Source: Adavant Consulting, July 2013

Passenger Loading/Unloading

Several passenger (white) loading/unloading zones are provided in the vicinity of the project site to allow drivers to drop off or pick up passengers along the curb. A two-vehicle white zone

13 TIS, p. 41.
14 Ibid.

serving the Rincon Center Towers residential building is located on Howard Street across from the project site. Others are located along Spear and Steuart streets adjacent to office buildings, restaurants, and hotels.

Passenger loading zones generally have a relatively high turnover, due to limited time required to drop off and pick up passengers. Although not permitted, vehicles have been observed to temporarily park in these spaces and delivery vehicles have been observed to use these spaces when convenient commercial loading spaces are not available. However, due to the moderate demand for these spaces, these activities did not noticeably affect adjacent traffic or the ability of passenger vehicles to load and unload passengers.[15]

EMERGENCY VEHICLE ACCESS

The San Francisco Fire Department (SFFD) provides fire protection and emergency medical services. The nearest SFFD station is Station 35 at Pier 22½ on The Embarcadero at Harrison Street, two blocks south of the project site, where SFFD's two fireboats, Phoenix and Guardian, are based. In addition, Fire Station 1 is located at 676 Howard Street at Third Street, approximately one-half mile west of the project site.[16] In addition, the San Francisco Police Department (SFPD) Southern Station is located at 850 Bryant Street, between Seventh and Sixth streets, approximately 1.5 miles to the southwest.

No specific transportation-related issues such as traffic congestion, street widths or roadway alignments have been observed that affect emergency vehicle access to the project site, which primarily occurs on Howard Street where the garage entrance is located.

PARKING CONDITIONS

Parking conditions were examined within a study area generally bounded by Market Street to the north, Main Street to the west, Folsom Street to the south, and The Embarcadero to the east. On- and off-street parking supply and occupancy data has been gathered from available sources such as SF*park* and the *Transit Center District Plan Transportation Impact Study*, for the weekday midday (1 p.m. to 3 p.m.) and evening (7 p.m. to 9 p.m.) periods. In addition, hourly inbound and outbound vehicle counts at the driveway of the 75 Howard Garage were obtained from the project sponsor, for a typical Thursday and Saturday. The Ferry Plaza Farmers Market was in operation both days.

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[15] TIS, p. 42.

[16] The Fire Department plans to replace Fire Station 1 with a new Station No. 1 at 935 Folsom Street; the existing station would not be demolished until the new one is built. The proposed new fire station would have the same staffing levels and equipment as the current Station No. 1. Construction of the proposed new Station No. 1 began in 2013 and is expect to be completed in 2014.

Off-Street Parking Conditions

Figure 4.E.4: Existing Off-Street Parking Facilities Near Project Site shows the location of the publicly available off-street parking facilities within the study area, and the off-street parking supply and occupancy for the facilities during the midday (between 1 p.m. and 3 p.m.) and the evening (between 7 p.m. and 9 p.m.) conditions are shown in Table 4.E.8: Existing Off-Street Parking Supply and Occupancy (Weekday Midday and Evening Periods), p. 4.E.26.

Off-street parking conditions were studied in detail at the 75 Howard Garage using recent information provided by AMPCO System Parking, the garage operator, on behalf of the project sponsor. AMPCO System Parking provided 24-hour vehicle arrival and departure keycard data for one typical Thursday and one typical Saturday during the months of January, February, March, and April 2012. This information is summarized in Table 4.E.9: Existing Activity Summary for 75 Howard Garage, p. 4.E.26.

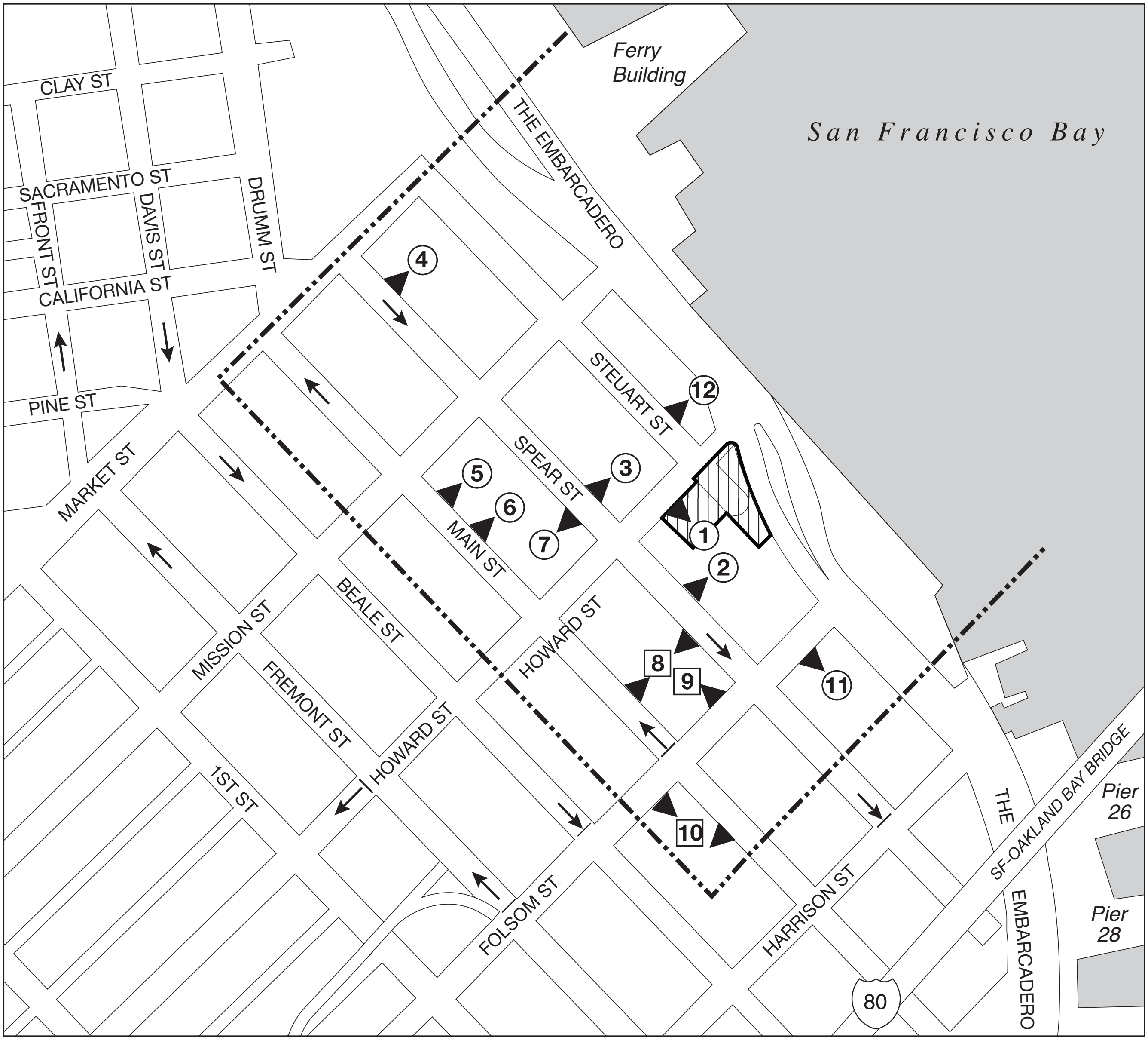
The 75 Howard Garage has 540 marked spaces, including 11 accessible spaces, 114 reserved spaces for monthly parkers, 5 spaces reserved for the carwash, and 410 general parking public spaces. There is one vehicle access on the south side of Howard Street, approximately mid-block between Spear and Steuart streets. Over 660 vehicles typically park at this garage on a weekday, of which about 44 percent are monthly permit holders. Saturday parking demand is about 520 vehicles and 12 percent are monthly permit holders. The highest overall average parking occupancy on a weekday is 94 percent, while the highest average parking occupancy on Saturdays is 52 percent. The data show that the 75 Howard Garage is well occupied on weekdays between 10 a.m. and 4 p.m. Less demand occurs on Saturdays, when demand peaks around noon.

The highest parking occupancy during the weekday evening period (after 7 p.m.) is 25 percent. There were 27 vehicles entering and 96 exiting the 75 Howard Garage during this period, for a total of 123 vehicles.

The 75 Howard Garage offers a special parking rate to customers on Saturdays and Sundays, discounted to $6.00 for the first four hours, and the regular weekday rate thereafter ($6.00 per 30 minutes). There is no special parking validation rate established for the Ferry Plaza Farmers Market.

On-Street Parking Conditions

The existing on-street parking conditions in the study area were qualitatively assessed in the TIS for the weekday midday peak (representative of the peak parking demand for nearby land uses) and the evening periods. On-street parking in the parking study area consists of metered parking. The metered spaces on The Embarcadero, which are under the jurisdiction of the Port of San



SOURCE: Adavant Consulting

PROJECT SITE	1 75 HOWARD ST	7 188 SPEAR ST	NORTH
DIRECTION OF TRAVEL	2 201 SPEAR ST	8 235 MAIN ST/260 SPEAR ST	0 500
PARKING STUDY AREA	3 RINCON CENTER	9 100 FOLSOM ST	FEET
# PARKING GARAGE	4 ONE MARKET PLAZA	10 320 MAIN ST/333 BEALE ST	
# PARKING LOT	5 123 MISSION ST	11 HILLS PLAZA	
	6 160 SPEAR ST	12 BAYSIDE PLAZA	

75 HOWARD STREET

FIGURE 4.E.4: EXISTING OFF-STREET PARKING FACILITIES NEAR PROJECT SITE

Table 4.E.8: Existing Off-Street Parking Supply and Occupancy [a] (Weekday Midday and Evening Periods)

No.	Name/Location	Facility Type	Midday (1 PM - 3 PM) Spaces Supplied [b]	Midday (1 PM - 3 PM) Spaces Occupied	Evening (7 PM - 9 PM) Spaces Supplied	Evening (7 PM - 9 PM) Spaces Occupied
1	75 Howard St.	Garage	535	94%	535	25%
2	201 Spear St.	Garage	95	62%	Closed at 7 PM	
3	121 Spear St. - Rincon Center	Garage	440	69%	440	17%
4	One Market Plaza	Garage	130	95%	Closed at 7 PM	
5	123 Mission St.	Garage	82	87%	Closed at 8 PM	
6	160 Spear St.	Garage	50	88%	Closed at 7 PM	
7	188 Spear (120 Howard St.)	Garage	70	100%	Closed at 7 PM	
8	235 Main St./260 Spear St.	Lot	217	100%	70	73%
9	100 Folsom St.	Lot	40	100%	40	98%
10	320 Main St./333 Beale St.	Lot	380	100%	235	25%
11	345 Spear St. - Hills Plaza	Garage	314	94%	Not available	
12	Bayside Plaza - 188 Embarcadero	Garage	44	100%	Closed at 7 PM	
Total			**2,397**	**90%**	**1,320**	**31%**

Notes:
[a] Based on data provided by the project sponsor for the 75 Howard Garage, surveys conducted in October 2012, and information presented in the *Transit Center District Plan Transportation Impact Study*, Final Report, September 2011.
[b] Midday parking occupancy is based on attendant operations during weekdays where appropriate.

Source: Adavant Consulting, July 2013

Table 4.E.9: Existing Activity Summary for 75 Howard Garage [a]

	Thursday	Saturday
Average Number of Daily Parked Vehicles		
Hourly Ticket	372	459
Monthly Permit	292	61
Total Vehicles	664	520
Maximum Average Number of Occupied Spaces [b]		
Hourly Ticket	242	234
Monthly Permit	231	30
Total Vehicles [c]	465	257
Percent of Total Capacity [d]	94%	52%
Time of Day [e]	Noon	Noon

Notes:
[a] Average daily data using typical Thursday and Saturdays in January, February, March, and April, 2012.
[b] Based on average day arrivals and departures.
[c] Maximum parking occupancy for all vehicles may not always add up to the number of hourly plus monthly patrons since hourly ticket and monthly permit parkers may not peak at the same time.
[d] Based on 495 spaces provided within the gated area of the garage; 540 total spaces available, minus five spaces reserved for the carwash, and minus 40 spaces provided in the cage area that do not require a keycard to enter or exit the garage.
[e] Peak time for hourly plus monthly parkers.

Source: Adavant Consulting, AMPCO System Parking data, June 2012

Francisco, have a four-hour time limit, and operate from 7 a.m. to 11 p.m. seven days a week. Parking spaces on Mission Street, Howard Street, Spear Street, Steuart Street, and Folsom Street near the project site are under the City's jurisdiction, generally have a 30-minute to two-hour limit, and operate from 7 a.m. to 6 p.m. Monday through Saturday. Tow-away regulations are in effect along westbound Mission Street east of Fremont Street, Monday through Friday from 3 p.m. and 6 p.m.

All the streets in the study area are part of the SF*park* demand-based pricing program in which on-street parking meter rates are adjusted incrementally up or down once a month based on the level of demand with the goals of ensuring parking availability in high-demand areas and encouraging more efficient use of on-street parking spaces.

There are a total of nine metered parking spaces along the two street faces adjacent to the building site, five on the south side of Howard Street and four on the west side of the Steuart Street cul-de-sac. In addition, there are four metered spaces on the east side of the Steuart Street cul-de-sac across from the open space improvement site. None of these spaces include commercial vehicle (yellow) or passenger (white) loading/unloading zones.

On-street parking is well-utilized throughout the day with higher occupancy rates closer to Market Street and lower occupancy rates towards Harrison Street. For the weekday midday peak period, on-street parking occupancies 80 percent and higher have been observed for the blocks between Mission and Folsom streets, although particular occupancy percentages can vary depending on specific location and time period. The blocks between Mission Street and Market Street typically have a higher on-street parking utilization of 90 to 100 percent.

REGULATORY FRAMEWORK

TRANSIT FIRST POLICY

In 1998, the San Francisco voters amended the City Charter (Charter Article 8A, Section 8A.115) to include a Transit First Policy, which was first articulated as a City priority policy by the Board of Supervisors in 1973. The Transit First Policy is a set of principles that underscore the City's commitment to give priority to travel by transit, bicycle, and foot over the private automobile. These principles are embodied in the policies and objectives of the Transportation Element of the *General Plan*. All City boards, commissions, and departments are required, by law, to implement transit-first principles in conducting City affairs.

SAN FRANCISCO GENERAL PLAN

The Transportation Element of the *General Plan* is composed of objectives and policies that relate to the eight aspects of the citywide transportation system: General Regional Transportation, Congestion Management, Vehicle Circulation, Transit, Pedestrian, Bicycles, Citywide Parking, and Goods Management. The Transportation Element references San Francisco's Transit First Policy in its introduction, and contains objectives and policies that are directly pertinent to consideration of the proposed project, including objectives related to locating development near transit facilities, encouraging transit use, and traffic signal timing to emphasize transit, pedestrian, and bicycle traffic as part of a balanced multimodal transportation system. The *General Plan* also emphasizes alternative transportation through the positioning of building entrances, making improvements to the pedestrian environment, and providing safe bicycle parking facilities.

SAN FRANCISCO BICYCLE PLAN

The *San Francisco Bicycle Plan* describes a City program to provide the safe and attractive environment needed to promote bicycling as a transportation mode. The *San Francisco Bicycle Plan* identifies the citywide bicycle route network, and establishes the level of treatment (i.e., Class I, Class II or Class III facility) on each route. The Plan also identifies near-term improvements that could be implemented within the next five years, as well as policy goals, objectives and actions to support these improvements. It also includes long-term improvements, and minor improvements that would be implemented to facilitate bicycling in San Francisco.

IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE THRESHOLDS

The Planning Department uses the following significance criteria to determine the impacts associated with a proposed project:

E.1 The operational impact on signalized intersections is considered significant when project-related traffic causes the intersection level of service to deteriorate from LOS D or better to LOS E or F, or from LOS E to LOS F. The operational impacts on unsignalized intersections are considered potentially significant if project-related traffic causes the level of service at the worst approach to deteriorate from LOS D or better to LOS E or F and Caltrans signal warrants would be met, or would cause Caltrans signal warrants to be met when the worst approach is already operating at LOS E or F. The project may result in significant adverse impacts at intersections that operate at LOS E or F under existing conditions depending upon the magnitude of the project's contribution to the worsening of the average delay per vehicle. In addition, the project would have a significant adverse impact if it would cause major traffic hazards or contribute considerably to cumulative traffic increases that would cause deterioration in levels of service to unacceptable levels.

E.2 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 Muni and regional transit screenlines analyses, the project would have a significant effect on the transit provider if project-related transit trips would cause the capacity utilization standard to be exceeded during the peak hour.

E.3 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.

E.4 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.

E.5 A project would have a significant effect on the environment if it would result in a loading demand during the peak hour of loading activities that could not be accommodated within proposed on-site loading facilities or within convenient on-street loading zones, and created potentially hazardous conditions or significant delays affecting traffic, transit, bicycles or pedestrians.

E.6 The project would have a significant effect on the environment if it would result in inadequate emergency access.

E.7 The project would have a significant effect on the environment if it would result in a substantial parking deficit that could create hazardous conditions or significant delays affecting traffic, transit, bicycles or pedestrians and where particular characteristics of the project or its site demonstrably render use of other modes infeasible.

E.8 Construction-related impacts generally would not be considered significant due to their temporary and limited duration.

PROJECT FEATURES

The proposed project and project variants would demolish the existing 75 Howard Garage and construct, in its place, an approximately 31-story, 348-foot-tall, 432,253-gross-square-foot (gsf) residential high-rise tower. No buildings would be constructed on the 4,780-sq.-ft. proposed landscaped open space on Block 3742/Lot 12 and a portion of the Steuart Street right-of-way south of Howard Street.

The proposed 186 residential units would consist of approximately 16 studio units, 39 one-bedroom units, 97 two-bedroom units, 29 three-bedroom units, and 5 four-plus bedroom units. Residential pedestrian access to the ground floor of the proposed building would be through a lobby entrance located at the midpoint of the proposed building frontage along Steuart Street.

The proposed project would include modification of the west sidewalk along Steuart Street to create a vehicular drop-off area in front of the residential entrance.[17]

The proposed 4,913-gsf restaurant access would be through doors along Howard Street while its second floor access would be by stairs or an elevator within the restaurant. A 745-gsf café would be located at the south side of the ground floor along Steuart Street. The proposed café access would be from a proposed approximately 173-sq.-ft. café garden open space along Steuart Street on the south side of the proposed building.

The proposed project would provide a total of 175 parking spaces in an underground parking garage. One parking space would be reserved for car-share vehicles, two spaces would be allocated to commercial uses on site, and 172 parking spaces would be assigned to building residents. None of the parking spaces would be independently accessible; all parking would be by valet attendant operating a mechanical parking system.

The project driveway and loading dock would be managed according to a *Driveway Operations Plan*.[18] The goal of the *Driveway Operations Plan* is to minimize conflicts between pedestrians, cyclists, general traffic, and project driveway traffic. To further this goal, trucks would be prohibited from entering the project driveway on weekdays between the hours of 7 to 9 a.m. and 4 to 7 p.m. Trucks would be permitted to exit during these hours, but only with the active guidance of a driveway or valet attendant.

Access into the parking garage would be through a 24-foot-wide, two-way vehicular entrance at the west end of the proposed building along Howard Street, near the same northwest corner location as the existing entrance to the 75 Howard Garage. Vehicles would travel down the garage ramp to Basement Level 1, where cars would be parked by attendants or valets using a robotic valet system of mechanically stacked spaces on Basement Level 2. Basement Level 2 would be about 50.5 feet deep, which would be sufficient to accommodate 175 automobiles. Drivers would wait in a designated area on Basement Level 1 for their vehicles to be delivered, and then would exit the parking garage via the garage ramp.

The proposed project would include two loading spaces (35 feet long by 12 feet wide by 14 feet high). Delivery and service vehicles would travel down the garage ramp to Basement Level 1, where a loading turntable would assist delivery and service vehicles to enter and exit the loading

[17] The proposed passenger loading bay on the Steuart Street extension would be eight feet wide and 68 feet long, and the sidewalk adjacent to the loading bay, measured to the face of the building, would be 16 feet wide. The sidewalk north and south of the passenger loading bay would be 24 feet wide. The ground floor wall would be set back six feet from the eastern property line.

[18] Provided as Appendix I to the TIS. A copy of this document is available for public review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2011.1122E.

space. Deliveries would reach upper floors via a service elevator accessible from the loading dock. Trash pick-up would also occur in Basement Level 1, with garbage trucks using the ramp and truck turntable.

The proposed project would also include 64 Class 1 bicycle storage spaces[19] located on Basement Level 1: 59 bicycle spaces would be provided for the residents and would be located near the parking waiting area, and 5 bicycle spaces would be provided for visitors in a separate area across from the elevator lobby. Bicyclists would access these spaces by elevator from either the residential or service entrance located at the ground floor of the high-rise tower, or by walking or riding down the garage ramp from Howard Street.

Proposed Public Parking Variant

The proposed Public Parking Variant would provide an additional 91 parking spaces for public parking to partially offset the 540 public spaces lost by the proposed demolition of the 75 Howard Garage. This variant would have a total of 268 parking spaces: 172 for the proposed residential units, 2 for commercial uses, plus 91 public spaces, and 3 spaces reserved for car-share vehicles (2 more than in the proposed project.) All of these spaces would be located in stacked spaces in an expanded Basement Level 2. The types and sizes of land uses for this variant are the same as for the proposed project. The depth of Basement Level 2 under the proposed Public Parking Variant would be about 60 feet (9 feet deeper than the proposed project), which would be sufficient to accommodate 268 automobiles. There would be 64 Class 1 bicycle parking spaces, as in the proposed project.

As for the proposed project, in the Public Parking Variant all vehicles would enter the parking garage through a vehicular entrance at the west end of the proposed building along Howard Street. Vehicles would travel down the garage ramp to Basement Level 1, where cars would be parked by attendants using a robotic valet system in mechanically stacked spaces on Basement Level 2. Under this variant, users of the proposed public parking spaces would retrieve their vehicles by entering a door from Howard Street adjacent to the vehicular entrance, and use the stairs or elevator to Basement Level 1, where they would wait for their vehicles to be retrieved; they would exit the parking garage in their vehicles via the ramp.

Proposed Residential/Hotel Mixed Use Variant

The proposed Residential/Hotel Mixed Use Variant would include approximately 109 residential units and 82 hotel rooms. The proposed height, building form, and total gsf of the high-rise tower under this variant would be the same as under the proposed project.

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[19] TIS, p. 12.

As for the proposed project, lobby, restaurant/café, and amenity space for residents would be constructed on the first and second floors under this variant. Floor 8 would be used exclusively for hotel guests and would contain a lounge, reception area, and hotel kitchen and dining. Floor 9 would provide amenity space, including spa services, which would be publicly accessible. Residents and hotel guests would use the same Steuart Street building entrance and lobby on the ground floor; however, the hotel guests would access floors 3 through 12 by a separate elevator. Unlike the proposed project, this variant would include approximately 3,153 gsf of publicly accessible open space comprised of a sloped open space on the south side of the building leading to an observation deck on the second floor of the building.

The proposed Residential/Hotel Mixed Use Variant would provide a total of 268 stacked parking spaces in a parking garage located on a below-grade level, with the same configuration as the proposed Public Parking Variant. Four parking spaces would be reserved for car-share vehicles, 7 spaces would be allocated to commercial uses on site (reserved for designated employees, visitors, etc., not for public parking) including the hotel, and 103 parking spaces would be assigned to building residents. In addition, 154 public parking spaces would also be provided to partially offset the 540 public spaces lost by the proposed demolition of the 75 Howard Garage. All parking would be accessed in the same manner as the proposed project and the Public Parking Variant.

The proposed Residential/Hotel Mixed Use Variant would include 64 Class 1 bicycle storage spaces located on Basement Level 1; 40 bicycle spaces would be provided for the residents, while 24 additional spaces would be provided for visitors, employees, and hotel guests.

APPROACH TO ANALYSIS

This section presents the methodology for analyzing transportation impacts and information considered in developing travel demand for the proposed projects and project variants. The impacts of the proposed project on the surrounding roadways were analyzed using the guidelines set forth in the San Francisco Planning Department's *2002 Transportation Impact Analysis Guidelines for Environmental Review* (SF Guidelines), plus information obtained from the U.S. Census American Community Survey 5-year Estimate. The SF Guidelines provide direction for analyzing transportation conditions and in identifying the transportation impacts of a proposed project in the City of San Francisco.

The analysis of the proposed project was conducted for existing and future year 2035 conditions. "Existing plus Project" conditions assess the near-term impacts of the proposed project, while "2035 Cumulative plus Project" conditions assess the long-term impacts of the proposed project in combination with other reasonably foreseeable development. Future year 2035 Cumulative traffic conditions were based on the traffic analysis conducted for the *Transit Center District Plan EIR*.[20]

Impacts Analysis Methodology

Intersection Analysis

As with the existing conditions discussed in the Environmental Setting subsection above, the analysis of the effect of the proposed project on the nine study intersections used the *2000 HCM* operations methodology, which determines the capacity for each lane group approaching an intersection. The operating characteristics of signalized intersections are described by the concept of Level of Service (LOS). LOS is a qualitative description of the performance of an intersection based on the average delay per vehicle. LOS is based on delay, defined as the delay directly associated with the traffic control device, such as a traffic signal, and includes the initial time slowing to a stop, queue move-up time, time stopped, and time spent accelerating. Table 4.E.10: Signalized Intersection Level of Service Criteria presents the relationship between LOS and delay for signalized intersections.

Table 4.E.10: Signalized Intersection Level of Service Criteria

Control/ LOS	Description of Operations	Average Delay (seconds per vehicle)
A	Insignificant Delays: No approach phase is fully used and no vehicle waits longer than one red indication.	≤ 10
B	Minimal Delays: An occasional approach phase is fully used. Drivers begin to feel restricted.	> 10.0 and ≤ 20.0
C	Acceptable Delays: Major approach phase may become fully used. Most drivers feel somewhat restricted.	> 20.0 and ≤ 35.0
D	Tolerable Delays: Drivers may wait through no more than one red indication. Queues may develop but dissipate rapidly without excessive delays.	> 35.0 and ≤ 55.0
E	Significant Delays: Volumes approaching capacity. Vehicles may wait through several signal cycles and long queues form upstream.	> 55 and ≤ 80
F	Excessive Delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections.	> 80.0

Note:
≤ means less than or equal to; > means greater than.
Source: *2000 HCM*, Transportation Research Board, 2000

The proposed project would have a significant traffic impact at an intersection if project-generated trips would cause an intersection operating at LOS D or better under existing conditions to operate at LOS E or LOS F, or intersections operating at LOS E under existing conditions to deteriorate to LOS F conditions. At intersections that operate at LOS E or LOS F under existing conditions, and would continue to operate at LOS E or LOS F under conditions

[20] TIS, p. 87.

with the proposed project, the increase in proposed project vehicle trips was reviewed at the critical movements to determine whether the increase would contribute considerably to unacceptable levels of service.

Transit Analysis

The impact of additional transit ridership generated by the proposed project and its variants was assessed by comparing the projected ridership to the available transit capacity, using the screenline analysis method used to describe existing conditions. The service capacity of each screenline was estimated by multiplying the passenger capacity of each transit vehicle by the number of trips that occurred when the ridership data was collected. For service provided by Muni, the capacity includes seated passengers and an appreciable number of standing passengers per vehicle (the number of standing passengers is between 30 and 80 percent of the seated passengers depending upon the specific transit vehicle configuration). The maximum loads, including both seated and standing passengers, vary by vehicle type. The percent utilization of capacity was then calculated by comparing the ridership demand to the capacity provided. Muni's Short Range Transit Plan defines a maximum capacity utilization factor of 85 percent to be used for planning purposes.[21] For service provided by regional transit providers, the analysis assumes a capacity utilization standard of 100 percent, indicating that all seats are full, except on BART, which accounts for standees at an additional 35 percent of the seating capacity.

Transit ridership for future year 2035 Cumulative No Project conditions was forecast using the SFCTA San Francisco Chained Activity Model Process (SF-CHAMP) travel demand model, as prepared for the *Transit Center District Plan EIR*.

The proposed project or its variants would have a significant transit impact if project-generated transit trips would cause a screenline operating at less than its capacity utilization standard under existing conditions, to operate over capacity (i.e., at more than 85 percent capacity utilization for Muni, and at more than 100 percent capacity utilization for regional transit providers). The proposed project or variants also would have a significant impact if it would cause a substantial increase in delays to transit vehicles. The proposed project or variants would have a significant cumulative transit impact if the contribution to an overcapacity transit line would be cumulatively considerable.

Bicycle and Pedestrian Analysis

The level of service for the study crosswalks was calculated using the methodology presented in the *2000 HCM*. Crosswalk LOS levels were measures of the amount of space (square feet) each

[21] TIS, p. 28.

pedestrian has in the crosswalk (i.e., density). These measures depend on pedestrian volumes, signal timing, crosswalk dimensions, and roadway widths. LOS A represents free-flowing pedestrian conditions, while LOS F indicates that there are substantial restrictions to pedestrian movement and speed.

Bicycle conditions were assessed as they relate to the project site, including bicycle routes, safety and right-of-way issues, and conflicts with traffic.

Loading Analysis

Loading was analyzed by comparing the on-site loading spaces supplied by the proposed project and variants to both the required loading by the Planning Code and projected loading demand.

Parking Analysis

The parking analysis was conducted by comparing the proposed parking supply to both the amount allowed under the Planning Code and to the projected demand that would be generated by the proposed project and variants.

Construction Analysis

The construction impact evaluation addresses the staging and duration of construction activity, estimated daily truck and worker volumes, and street lane and/or sidewalk closures.

Travel Demand

Project travel demand refers to the new vehicle, transit, pedestrian, and bicycle traffic that would be generated by the proposed project and its variants. Parking and freight loading demand for the proposed project and its variants are also analyzed. The travel demand, parking demand, and freight/service vehicle loading demand estimates were based on information contained in the San Francisco Planning Department's *Transportation Impact Analysis Guidelines for Environmental Review* (SF Guidelines), published in October 2002.

Trip Generation

The daily and p.m. peak hour person-trip generation for the proposed project and variants includes residents, employees, and visitors. The person-trip generation rates from the SF Guidelines were applied to the residential units (with different rates for one-bedroom and two-or-more-bedroom units), the number of hotel rooms, and the café and restaurant uses in the proposed project and variants.

The trip generation estimates for the proposed project and its variants are derived from the land uses being proposed under each scenario; these estimates do not include vehicle trips from drivers not connected to the uses in the proposed project who could potentially park in the public garage to be provided under the two project variants. Those vehicles are addressed separately, below. Therefore, the proposed project and the Public Parking Variant would generate the same number of trips and are grouped together for trip generation analysis purposes.

Travel demand created by the proposed open space improvements to be provided by the project and its two variants was considered part of background travel in the area and not as a new trip generator. The weekday daily and p.m. peak hour person-trip generation for the proposed project and its two variants is shown in Table 4.E.11: Number of Person-Trips Generated by Land Use in Proposed Project and Variants. Overall, the proposed project and the Public Parking Variant would generate approximately 5,960 person-trips on a daily basis and 870 person-trips during the weekday p.m. peak hour, while the Residential/Hotel Mixed Use Variant would generate approximately 6,220 daily person-trips and 860 p.m. peak hour person-trips (all numbers are rounded from those in the table).

Mode Split

The land-use-generated person-trips for the project and its variants were allocated among different travel modes in order to determine the number of auto, transit, and other trips going to and from the site. The “Other” category includes walk, bicycle, motorcycle, and additional modes, such as taxis.

Mode split assumptions for work and non-work trips for the residential use are based on U.S. 2006-2010 American Community Survey 5-Year Estimates Data for the census tract where the proposed project is located. Mode of travel assumptions for the hotel, café, and restaurant uses are based on information contained in the SF Guidelines.

The typical weekday p.m. peak hour trip generation by mode of travel for the land uses being proposed by the project and its two variants is shown in Table 4.E.12: Trip Generation by Mode and Land Use for Proposed Project and Variants (Weekday PM Peak Hour), p. 4.E.38. During the weekday p.m. peak hour, the proposed project and the Public Parking Variant would generate 274 person-trips by automobile (31 percent), 156 person-trips by transit (18 percent), and 443 person-trips by other modes, including walking (51 percent); the Residential/Hotel Mixed Use Variant would generate 263 person-trips by automobile (31 percent), 167 person-trips by transit (19 percent), and 429 person-trips by other modes (50 percent). The proposed project and the Public Parking Variant would generate 195 vehicle-trips (106 inbound and 89 outbound) during the weekday p.m. peak hour, while the Residential/Hotel Mixed Use Variant would generate 174 vehicle-trips (half of them inbound and the other half outbound) during the same period.

Table 4.E.11: Number of Person-Trips Generated by Land Use in Proposed Project and Variants

Land Use Type	Size (gsf)	Person Trip Rate		Person-Trips	
		Daily	PM peak hour	Daily	PM peak hour
Proposed Project and Public Parking Variant					
Residential	285,498	7.5/unit [a] 10.0/unit [b]	1.31/unit [a] 1.75/unit [b]	413 1,310	72 229
Café	918 [c]	1,400/1,000 gsf	189/1,000 gsf	1,285	174
Restaurant	4,913	600/1,000 gsf [d]	81/1,000 gsf [d]	2,948	398
Total	**291,329 [e]**			**5,956**	**873**
Residential/Hotel Mixed Use Variant					
Residential	170,761	7.5/unit [f] 10.0/unit [g]	1.31/unit [f] 1.75/unit [g]	195 830	34 145
Hotel	104,260 [h]	7/room	0.7 room	574	57
Café	1,203 [i]	1,400/1,000 gsf	189/1,000 gsf	1,684	227
Restaurant	4,891	600/1,000 gsf [d]	81/1,000 gsf [d]	2,935	396
Total	**281,115 [e]**			**6,218**	**859**

Notes:
[a] 55 studio/1-bedroom units.
[b] 131 units with two or more bedrooms.
[c] Includes 173 gsf of open café area that is not counted towards the total building gsf; the "Fast food eating/drinking" trip generation rate was used for the café.
[d] The "Restaurant Composite" trip generation rate was used for the restaurant.
[e] Mechanical/Circulation/Building support space, Private/Common/Public open space, or parking. The trip generation associated with the proposed open space is considered part of background travel in the area and not a new trip generator.
[f] 26 studio/1-bedroom units.
[g] 83 units with two or more bedrooms.
[h] 82 hotel rooms.
[i] Does not provide open café area.

Sources: TIS, p. 50, citing SF Guidelines, Adavant Consulting, July 2013.

As shown in Table 4.E.12, the residential component of the proposed project would generate 53 percent of the total vehicle trips (103 trips) during the p.m. peak hour under the proposed project and the Public Parking Variant, and 35 percent of the total vehicle trips (61 trips) under the Residential/Hotel Mixed Use Project Variant.

Trip Distribution/Assignment

Distribution of Trips from Proposed Project and Variants Land Uses

The distribution of trips for the land uses being proposed by the project and its variants was obtained from the U.S. Census Bureau[22] and the SF Guidelines. The distribution is based on the origins and destinations of trips for each specific land use, which are assigned to the four

[22] TIS, p. 53.

Table 4.E.12: Trip Generation by Mode and Land Use for Proposed Project and Variants (Weekday PM Peak Hour)

Land Use Type	Person-Trips				Vehicle Trips
	Auto	Transit	Other[a]	Total	
Proposed project and Public Parking Variant					
Residential	112	58	131	301	103
Café	49	30	95	174	28
Restaurant	113	68	217	398	64
Total	**274** 31%	**156** 18%	**443** 51%	**873** 100%	**195** 106 in/89 out
Residential/Hotel Mixed Use Variant					
Residential	66	35	78	179	61
Hotel	19	26	12	57	12
Café	65	39	123	227	37
Restaurant	113	67	216	396	64
Total	**263** 31%	**167** 19%	**429** 50%	**859** 100%	**174** [b] 87 in/87 out

Notes:
[a] "Other" includes walk, bicycle, motorcycle, and additional modes such as taxis.
[b] In addition, 19 (8 inbound and 11 outbound) existing vehicles would enter/exit the public garage during the p.m. peak hour under the Residential/Hotel Mixed Use Variant, for a total of 193 existing plus new vehicle trips.

Sources: U.S. Census 2006-2010 American Community Survey, SF Guidelines, Adavant Consulting, July 2013

quadrants of San Francisco (Superdistricts 1 through 4), East Bay, North Bay, South Bay, and Out of Region. The results are summarized in Table 4.E.13: Trip Distribution Patterns by Land Use for Proposed Project and Variants.

As shown in Table 4.E.13, approximately half of the land-use-generated trips from both the proposed project and variants would come from areas within San Francisco (53 percent for the project and the Public Parking Variant, and 46 percent for the Residential/Hotel Mixed Use Variant) with decreasing percentages from outside the City – the North Bay, the East Bay, and the South Bay areas, and locations out of the region. This trip distribution was used as the basis for assigning land-use-generated/attracted trips to the local streets in the study area from the proposed project and variants.

Redistribution of Existing 75 Howard Garage Vehicles

The proposed project would replace an existing 540-space parking garage. The vehicles parking in the garage would be expected to relocate to other nearby parking facilities, and would no longer access the project site after the garage was demolished as part of the proposed project. Traffic counts conducted at the garage driveway indicate that during the weekday p.m. peak hour (within the 4 to 6 p.m. peak period) there were approximately 120 vehicles accessing the 75 Howard Garage.

Table 4.E.13: Trip Distribution Patterns by Land Use for Proposed Project and Variants

Place of Trip Origin	Residential	Hotel		Café/Restaurant		Project & Public Parking Variant [b]	Residential/ Hotel Mixed Use Variant [b]
	Residents & Visitors	Workers	Visitors	Workers	Visitors		
San Francisco							
Superdistrict 1	53.4%	14.1%	26%	14.1%	8%	29.7%	20.7%
Superdistrict 2	7.6%	15.7%	13%	15.7%	8%	7.2%	7.5%
Superdistrict 3	7.6%	19.9%	13%	19.9%	12%	10.8%	12.6%
Superdistrict 4	7.6%	12.0%	5%	12.0%	4%	5.6%	5.2%
East Bay	6.5%	22.7%	11%	22.7%	15%	10.8%	12.1%
North Bay	1.9%	2.9%	7%	2.9%	10%	10.8%	13.2%
South Bay	14.9%	11.1%	10%	11.1%	5%	10.8%	10.3%
Out of Region	0.4%	1.6%	15%	1.6%	38%	14.4%	18.4%
Total	**100.0%**	**100.0%**	**100%**	**100.0%**	**100%**	**100.0%**	**100.0%**

Notes:
[a] Retail distribution percentages used for customers of the proposed café and restaurant uses.
[b] Aggregated values for the combined land uses during the p.m. peak hour.
Sources: U.S. Census 2006-2010 American Community Survey, SF Guidelines, Adavant Consulting, July 2013

The proposed project would not provide any public parking and therefore would require that all of the existing vehicle trips to/from the existing 75 Howard Garage be redistributed to other nearby parking facilities. The Public Parking Variant would provide a total of 268 parking spaces, of which 91 spaces would be available to the general public. On the other hand, the parking demand for the land uses to be built under the Public Parking Variant in the p.m. would be 318 spaces in the evening (see Table 4.E.15, p. 4.E.42). This means that all the parking to be provided under this variant, including public parking spaces, could be fully used by the proposed land uses on-site, with no additional spaces available for other off-site vehicles. Thus, to be conservative, the Public Parking Variant would also require the redistribution of all the existing vehicle trips to/from the 75 Howard Garage, similar to the proposed project.

The Residential/Hotel Mixed Use Variant would provide a total of 268 parking spaces, of which 154 spaces would be available to the general public. The parking demand for the land uses to be built under this variant in the p.m. would be 248 spaces (see Table 4.E.15), which means that 20 spaces would be available to the general public in the p.m. Thus, a reassignment of the remaining 100 vehicles to nearby off-street parking facilities would be necessary for the Residential/Hotel Mixed Use Variant.

Redistribution patterns for those vehicles currently parking at the 75 Howard Garage were allocated using travel paths and parking facilities in the vicinity of the project site, resulting in a conservative (higher volume) traffic impact analysis. In reality, some of those vehicles could decide to park further away from the site, most likely at some of the facilities south of Folsom Street (or even further outside the study area) where off-street parking is available, or could decide to travel to the area by other modes such as transit, bicycle, or walking. Any of these possibilities would result in lower traffic volumes at the study intersections than those analyzed in this EIR.

Loading Demand

Freight delivery and service vehicle demand was estimated based on the methodology and truck trip generation rates presented in the SF Guidelines. As shown in Table 4.E.14: Freight Delivery and Service Vehicle Demand by Land Use for Proposed Project and Variants, the proposed project and the Public Parking Variant would generate on average 30 delivery/service vehicle trips per day, while Residential/Hotel Mixed Use Variant would generate 37 delivery/service vehicle trips per day. These daily truck trips correspond to a respective demand of 1.4 and 1.7 loading spaces during an average hour or 1.7 and 2.1 loading spaces during the peak hour of loading activities.[23] It is anticipated that most of the delivery/service vehicles that would be generated by the proposed project and its variants would consist of relatively small delivery trucks and vans.

Table 4.E.14: Freight Delivery and Service Vehicle Demand by Land Use for Proposed Project and Variants

Land Use Type	Size (gsf)	Daily Truck Trips	Demand for Loading Spaces	
			Peak Hour [a]	Average Hour
Proposed Project and Public Parking Variant				
Residential	285,498 [b]	8.6	0.5	0.4
Café/Restaurant	5,831	21.0	1.2	1.0
Total	**291,329**	**29.6**	**1.7**	**1.4**
Residential/Hotel Mixed Use Variant				
Residential	170,761 [c]	5.1	0.3	0.2
Hotel	104,260 [d]	9.4	0.5	0.4
Café/Restaurant	6,094	22.0	1.3	1.0
Total	**281,115**	**36.5**	**2.1**	**1.7**

Notes:
[a] Peak hour truck trip generation generally occurs between 10 a.m. and p.m., and is unrelated to the p.m. peak hour used in the other transportation analyses.
[b] 186 residential units: 55 studio/1-bedroom units, and 131 units with two or more bedrooms.
[c] 109 residential units: 26 studio/1-bedroom units, and 83 units with two or more bedrooms.
[d] 82 hotel rooms.

Sources: TIS, p. 60, SF Guidelines, Adavant Consulting, July 2013

Passenger loading demand associated with the hotel use for the Residential/Hotel Mixed Use Variant was estimated based on the methodology presented in the SF Guidelines. Based on the p.m. peak hour trip generation estimates, the peak passenger vehicle loading demand during the peak 15 minutes was estimated to be one vehicle.

[23] TIS, p. 60. Peak hour truck trip generation generally occurs between 10 a.m. and 1 p.m.

Parking Demand

Parking demand for the proposed project and the two variants was determined based on methodology presented in the SF Guidelines. Parking demand consists of both long-term demand (typically residents and employees) and short-term demand (typically visitors). Long-term parking demand for the residential uses was estimated assuming 1.1 spaces for every studio/one-bedroom residential unit and 1.5 spaces for every residential unit with two or more bedrooms, then applying a midday or evening peak demand percentage.

Long-term parking demand for the café and restaurant uses was estimated by applying the average mode split and the vehicle occupancy from the trip generation estimation to the number of employees for each of the proposed land uses. Short-term parking for these uses was estimated based on the total daily visitor trips and average daily parking turnover rate of 5.5 vehicles per space per day.

For the hotel use, it was estimated that hotels generate long-term demand only for hotel guests and employees. Hotel guests would generate long-term demand at a rate of one space per four rooms, while the employee long-term demand was calculated by determining the number of daytime employees and applying the average mode split and vehicle occupancy from the trip generation estimation.

The estimated midday and evening peak new parking demand for the proposed project and its variants is summarized in Table 4.E.15: Weekday New Parking Demand by Land Use for Proposed Project and Variants. Under the proposed project and Public Parking Variant, the residential use would generate a total parking demand for 218 spaces during the midday and 258 spaces in the evening. The café and restaurant uses would generate a total parking demand of 53 spaces (49 short-term and four long-term) during the midday and 60 spaces (56 short-term and four long-term) in the evening. Overall, the proposed project and the Public Parking Variant would generate a new parking demand of 271 spaces during the midday and 318 spaces in the evening.

Under the Residential/Hotel Mixed Use Variant, the residential use would generate a total parking demand for 130 spaces during the midday and 154 spaces in the evening, while the hotel use would generate a total parking demand of 16 spaces (8 for guests and 8 for employees) during the midday and 29 spaces (21 for guests and 8 for employees) in the evening. The café and restaurant uses would generate a total parking demand of 59 spaces (55 short-term and 4 long-

Table 4.E.15: Weekday New Parking Demand by Land Use for Proposed Project and Variants

Land Use Type	Midday (1 PM- 3PM)			Evening (7 PM- 9 PM)		
	Short-term Spaces	**Long-term Spaces**	**Total Spaces**	**Short-term Spaces**	**Long-term Spaces**	**Total Spaces**
Proposed Project and Public Parking Variant						
Residential	0	218	218	0	258	258
Café	18	1	19	15	1	16
Restaurant	31	3	34	41	3	44
Total Proposed project	**49**	**222**	**271**	**56**	**262**	**318**
Residential/Hotel Mixed Use Variant						
Residential	0	130	130	0	154	154
Hotel	0	16 [a]	16	0	29 [b]	29
Café	24	1	25	20	1	21
Restaurant	31	3	34	41	3	44
Total Residential/Hotel Variant	**55**	**150**	**205**	**61**	**187**	**248**

Notes:
[a] Includes hotel guest parking demand of eight spaces, and employee parking demand of eight spaces
[b] Includes hotel guest parking demand of 21 spaces, and employee parking demand of eight spaces
Sources: SF Guidelines, Adavant Consulting, July 2013

term) during the midday and 65 spaces (61 short-term and 4 long-term) in the evening. Overall, the Residential/Hotel Mixed Use Variant would generate a new parking demand of 205 spaces during the midday and 248 spaces in the evening.The number of vehicles that would access the project site garage during the p.m. peak hour under the proposed project and its variants is summarized in Table 4.E.16: Vehicle Access to Project Garage for Proposed Project and Variants (Weekday PM Peak Hour). There would be 71 inbound plus outbound vehicles accessing the project garage during the p.m. peak hour under the proposed project, 150 vehicles under the Public Parking Variant, and 193 vehicles under the Residential/Hotel Mixed Use Variant.

Cumulative Analysis

Future year 2035 cumulative traffic conditions were based on the traffic analysis conducted for the *Transit Center District Plan* (TCDP) *EIR* and assume implementation of the TCDP Public Realm Plan that includes changes and improvements to the existing transportation system. These transportation system changes are summarized below, followed by a summary of the approach to the cumulative transportation analysis.

<u>Improvements Assumed in the Cumulative Analysis</u>

The project site is located within the TCDP area, which encompasses 145 acres surrounding the new Transbay Transit Center and whose boundaries are roughly Market Street on the north,

Table 4.E.16: Vehicle Access to Project Garage for Proposed Project and Variants (Weekday PM Peak Hour)

Land Use Type	Proposed Project			Public Parking Variant [a]			Residential/Hotel Variant [b]		
	In	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Residential	43	25	68	57	33	90	40	21	61
Hotel	---	---	---	---	---	---	0	12	12
Café/Restaurant	1	2	3	27	33	60	47	54	101
Public Parking	---	---	---	---	---	---	8	11	19
Total	**44**	**27**	**71**	**84**	**66**	**150**	**95**	**98**	**193**

Notes:
[a] All the 91 non-accessory public parking spaces to be provided by the Public Parking Variant, would be fully utilized by the proposed land uses on-site, with no additional spaces available for other off-site vehicles in the evening.
[b] The Residential/Hotel Mixed Use Variant would provide 154 non-accessory public parking spaces of which 20 spaces would be available to the general public in the evening.

Source: Adavant Consulting, July 2013

Steuart Street on the east, Folsom Street on the south, and mid-block between Third and New Montgomery streets on the west. The goal of the TCDP is to shape the area surrounding the new Transbay Transit Terminal to maximize land use density and create a public realm that would accommodate the increase in transportation demand in the area. The TCDP includes a Public Realm Plan that comprises a comprehensive series of changes to the transportation network surrounding the Transit Center. These changes include modifications to the roadway, transit, pedestrian, and bicycle networks, as well as loading and parking changes.

Roadway changes within the vicinity of the project site in the future would include the removal of one eastbound travel lane along Howard Street between Fremont Street and Main Street and two-way traffic along Spear Street between Market Street and Folsom Street, which would occur through the conversion of one southbound travel lane to a northbound travel lane. Diagonal parking on the east side of Spear Street is proposed to be converted to parallel parking.

Throughout the TCDP area, sidewalks would be widened by removing on-street parking lanes and/or travel lanes on Mission Street, Howard Street and Spear Street. Pedestrian bulb-outs would be constructed at various intersections, including those along Spear and Howard streets, to reduce pedestrian crossing times and distances. A reduction in travel lanes would be implemented along roadways with bicycle facilities, including Howard Street. On-street commercial loading spaces along Mission Street would be consolidated into 50- to 100-foot-long loading pockets or turnouts, similar to those currently found along Market Street.

The public realm modifications that affect the transportation facilities in the TCDP area were included in the forecast of future 2035 cumulative conditions.

Cumulative 2035 Travel Demand

The San Francisco County Transportation Authority (SFCTA) countywide travel demand forecasting model was used to develop future year 2030 cumulative traffic volumes at the study intersections and transit ridership projections for the TCDP. The SFCTA model output, based on projections developed for the TCDP, takes into account both the future development expected in the Waterfront, Transbay, and South of Market areas, as well as the expected growth in housing and employment for the remainder of San Francisco and the nine-county Bay Area. The TCDP transportation analyses used 2007/2008 transportation conditions as a baseline, and estimated 2030 cumulative transportation conditions, a 23-year growth period.[24] Thus, the same expected changes were applied to the baseline data collected for this project in 2012, in order to estimate the future 23-year growth to represent 2035 cumulative transportation conditions.

IMPACT EVALUATION

This section presents the assessment of transportation impacts due to the travel demand generated by the proposed project and its variants. The impacts are grouped into seven areas: traffic, transit, pedestrian, bicycle, loading, emergency vehicle access, parking, and construction. The traffic and transit conditions have been assessed for the following scenarios:

- Existing plus Project;
- Existing plus Public Parking Variant;
- Existing plus Residential/Hotel Mixed Use Variant; and
- Future year 2035 Cumulative.

Traffic Impacts

Impact TR-1: The proposed project and its variants would not cause a substantial increase in traffic that would cause the level of service to decline from LOS D or better to LOS E or F, or from LOS E to F at the nine study intersections in the project vicinity. (*Less than Significant*)

During the weekday p.m. peak hour, approximately 195 new vehicles (106 inbound and 89 outbound) would access the project site under the proposed project and the Public Parking Variant, and approximately 193 new vehicles (95 inbound and 98 outbound) under the Residential/Hotel Mixed Use Variant (see Table 4.E.12, p. 4.E.38).

[24] Transit Center District Plan Transportation Impact Study, Final Report, Case Numbers 2007.0558! and 2008.0789!, September 22, 2011.

A comparison of the weekday p.m. peak hour intersection LOS for the Existing plus Project/Public Parking Variant and the Existing plus Residential/Hotel Mixed Use Variant is shown in Table 4.E.17: Existing and Existing plus Proposed Project/Variants Intersection Level of Service (Weekday PM Peak Hour).[25] The addition of traffic from the proposed project or either of the variants would result in minor increases in the average delay per vehicle at most of the study intersections. All nine study intersections would continue to operate at the same LOS as under existing conditions, LOS D or better. The intersections along The Embarcadero and the I-80 WB off-ramp at Folsom Street would continue to operate at LOS D, while those intersections along Spear Street and Steuart Street would operate at LOS B or LOS C.[26] Therefore, the proposed project and its variants would have a less-than-significant traffic impact, and no mitigation is required.

Table 4.E.17: Existing and Existing plus Project/Variants Intersection Level of Service (Weekday PM Peak Hour)

		Existing		Existing plus Project/Public Parking Variant		Existing plus Residential/Hotel Mixed Use Variant	
Intersection Name		**Delay [a]**	**LOS**	**Delay [a]**	**LOS**	**Delay [a]**	**LOS**
1	The Embarcadero/Mission St.	36.3	D	38.4	D	38.3	D
2	The Embarcadero/Howard St.	44.6	D	48.3	D	48.0	D
3	The Embarcadero/Folsom St.	42.8	D	46.8	D	46.4	D
4	The Embarcadero/Harrison St.	40.3	D	41.2	D	41.8	D
5	Steuart St./Mission St.	17.1	B	17.7	B	17.5	B
6	Steuart St./Howard St.	14.3	B	14.7	B	14.7	B
7	Spear St./Howard St.	24.4	C	25.0	C	27.0	C
8	Spear St./Folsom St.	16.0	B	16.4	B	16.3	B
9	Fremont/Folsom/I-80 WB off-ramp	35.4	D	35.9	D	35.9	D

Note:
[a] Intersection delay presented in seconds per vehicle.

Source: Adavant Consulting, July 2013

Transit Impacts

Impact TR-2: The proposed project and its variants would not cause a substantial increase in transit demand that could not be accommodated by adjacent transit capacity; nor would the proposed project or variants cause a substantial increase in delays or costs such that significant adverse impacts in transit service levels could occur. (*Less than Significant*)

The proposed project and the Public Parking Variant would generate approximately 156 p.m. peak hour transit trips (83 inbound and 73 outbound), while the Residential/Hotel Mixed Use

[25] The intersection LOS calculations take into account the redistribution of the vehicle trips that currently travel to/from the 75 Howard Garage to other nearby off-street facilities.
[26] Appendix D of the TIS contains the detailed calculations of intersection LOS.

Variant would generate approximately 167 p.m. peak hour transit trips (70 inbound and 97 outbound) (see Table 4.E.12 and the accompanying discussion, pp. 4.E.37-4.E.38). All these transit trips to and from the project site would use the nearby Muni lines and regional transit lines, and may include transfers to other Muni bus lines and light rail lines, or other regional transit providers. Based on the trip distribution patterns presented in Table 4.E.13, p. 4.E.39, it is estimated that of all the outbound transit trips, 36 trips generated by the proposed project or the Public Parking Variant, and 51 trips generated by the Residential/Hotel Mixed Use Variant, would cross the Muni screenlines, and that 24 and 34 trips, respectively, would cross the regional screenlines. Approximately 17 outbound transit trips generated by the proposed project or the Public Parking Variant, and 13 outbound transit trips generated by the Residential/Hotel Mixed Use Variant would not cross any transit screenline.[27]

Transit Impacts on Muni

The Muni transit screenline analysis for the Existing plus Project and project variants scenarios is shown in Table 4.E.18: Muni Screenline Analysis in the Outbound Direction for Existing and Existing plus Proposed Project/Variants (Weekday PM Peak Hour). The proposed project/Public Parking Variant would increase the ridership at the Muni screenlines in the outbound direction by 0.20 percent, while the Residential/Hotel Mixed Use Variant would increase ridership at the Muni screenlines in the outbound direction by 0.28 percent, of the total current p.m. peak hour transit ridership. Thus, the addition of outbound riders by the proposed project or its variants to the four Muni screenlines would not noticeably increase the overall peak hour capacity utilization.

All the transit screenlines and the eight transit subcorridors would continue to operate below Muni's level of service threshold (85 percent utilization) under Existing plus Project and Existing plus Variants conditions. As previously shown in Table 4.E.2 (p. 4.E.11), the 30X Marina Express, which is part of the Kearny/Stockton corridor within the Northeast screenline, would operate at 86 percent utilization under existing conditions, above Muni's level of service threshold. Of the ten additional riders that would travel outbound on the Kearny/Stockton corridor during the weekday p.m. peak hour with proposed project or its variants, two (or 20 percent) would be expected to do so on the 30X Marina Express. The addition of these two trips would result in a less than 0.5 percent increase in the weekday p.m. peak hour ridership, which would have a minimal contribution to the existing ridership on the line and is well within the daily variation of transit demand. Therefore, the proposed project or project variants would have a less-than-significant impact on Muni transit lines.

[27] TIS, p. 68.

Table 4.E.18: Muni Screenline Analysis in the Outbound Direction for Existing and Existing plus Proposed Project/Variants (Weekday PM Peak Hour)

Screenline	Existing		Project/Public Parking Variant Trips	Existing plus Project/Public Parking Variant		Residential/Hotel Variant Trips	Existing plus Residential/Hotel Mixed Use Variant	
	Ridership	**Utilization**		**Ridership**	**Utilization**		**Ridership**	**Utilization**
Northeast								
Kearny/Stockton Corridor	2,158	66%	10	2,168	66%	10	2,168	66%
Other Lines	570	53%	3	573	53%	3	573	53%
Subtotal	*2,728*	*62%*	*13*	*2,741*	*63%*	*13*	*2,741*	*63%*
Northwest								
Geary	1,814	72%	3	1,817	72%	5	1,819	72%
California	1,366	81%	2	1,368	81%	4	1,370	81%
Sutter/Clement	470	75%	1	471	75%	1	471	75%
Fulton/Hayes	965	82%	2	967	82%	3	968	82%
Balboa	637	69%	1	638	69%	2	639	69%
Subtotal	*5,252*	*76%*	*9*	*5,261*	*76%*	*15*	*5,267*	*76%*
Southeast								
Third Street	550	77%	1	551	77%	2	552	77%
Mission Street	1,529	55%	3	1,532	55%	5	1,534	55%
San Bruno/ Bayshore	1,320	62%	2	1,322	62%	4	1,324	*62%*
Other Lines	1,034	60%	2	1,036	61%	3	1,037	61%
Subtotal	*4,433*	*60%*	*8*	*4,441*	*60%*	*14*	*4,447*	*61%*
Southwest								
Subway Lines	4,598	73%	5	4,603	73%	7	4,605	73%
Haight/Noriega	1,105	67%	1	1,106	67%	2	1,107	67%
Other Lines	276	39%	0	276	*39%*	0	276	39%
Subtotal	*5,979*	*69%*	*6*	*5,985*	*69%*	*9*	*5,988*	*69%*
Total All Screenlines	**18,392**	**67%**	**36**	**18,428**	**67%**	**51**	**18,443**	**68%**

Sources: SFMTA Transit Ridership Counts 2010/2011, Adavant Consulting, July 2013

As shown in Table 4.E.2 (p. 4.E.11), Muni's overall transit ridership during the Saturday midday peak hour is approximately 30 percent of the weekday p.m. ridership, while the capacity provided by the Muni system is about 40 percent, which results in generally lower (better) utilization ratioson Saturdays than on weekdays. Thus, since the proposed project and variants would generate a similar number of trips on weekdays and on Saturdays, the potential effects of transit ridership generated by the proposed project and its variants on Muni on Saturdays would be less than on weekdays and would be a less-than-significant impact.

Regional Transit Impacts

The 24 transit trips generated by the proposed project and the Public Parking Variant that would cross the regional screenlines in the outbound direction during the p.m. peak hour would result in about 16 trips on BART, 1 trip on AC Transit, 1 trip on Caltrain, and 6 trips on GGT buses and ferries. The 34 transit trips generated by the Residential/Hotel Mixed Use Variant would result in about 23 trips on BART, 2 trips on AC Transit, 1 trip on East Bay ferries, 1 trip on Caltrain, and 7 trips on GGT buses and ferries.

The Existing plus Project/Variants screenline analysis for the regional transit carriers in the outbound direction is shown in Table 4.E.19: Regional Transit Screenline Analysis for Existing and Existing plus Proposed Project/Variants in the Outbound Direction. The addition of project- or variant-related passengers would not have a noticeable effect on the regional transit providers during the weekday p.m. peak hour, as the capacity utilization for all screenlines would remain virtually the same as under existing conditions. The capacity utilization for all regional transit providers would continue to operate below the maximum capacity utilization standards. Therefore, the proposed project or the variants would have a less-than-significant impact on regional transit lines.

Inbound Transit Conditions

Muni and the regional transit screenline analyses are performed for transit trips outbound from downtown San Francisco, because that is the peak direction for most travel in the afternoon peak period. A qualitative analysis was performed for weekday transit trips inbound to the downtown area. These would represent transit trips from other parts of San Francisco (such as those from Superdistricts 2, 3 and 4), plus the East Bay, North Bay, and South Bay, to the project site in downtown San Francisco.

Slightly more than half of the total transit trips generated by the proposed project and the Public Parking Variant during the weekday p.m. peak hour (83 of 156 trips, or 53 percent) would be inbound trips, while the opposite would be true under the Residential/Hotel Mixed Use Variant (70 of 167 trips, or 42 percent inbound).

Table 4.E.19: Regional Transit Screenline Analysis for Existing and Existing plus Project/Variants in the Outbound Direction (Weekday PM Peak Hour)

Screenline	Existing		Project/Public Parking Variant Trips	Existing plus Project/Public Parking Variant		Residential/Hotel Variant Trips	Existing plus Residential/Hotel Mixed Use Variant	
	Ridership	Utilization		Ridership	Utilization		Ridership	Utilization
East Bay								
BART	19,716	89%	12	19,728	89%	18	19,734	89%
AC Transit	2,256	57%	1	2,257	57%	2	2,258	58%
Ferries	805	50%	0	805	50%	1	806	50%
Subtotal	*22,777*	*83%*	*13*	*22,790*	*83%*	*21*	*22,798*	*83%*
North Bay								
GGT buses	1,384	49%	4	1,388	49%	4	1,388	49%
Ferries	968	49%	2	970	50%	3	971	50%
Subtotal	*2,352*	*49%*	*6*	*2,358*	*49%*	*7*	*2,359*	*49%*
South Bay								
BART	10,682	72%	4	10,686	72%	5	10,687	72%
Caltrain	2,377	77%	1	2,378	77%	1	2,378	77%
SamTrans	141	44%	0	141	44%	0	141	44%
Subtotal	*13,200*	*72%*	*5*	*13,205*	*72%*	*6*	*13,206*	*72%*
Total All Screenlines	**38,329**	**76%**	**24**	**38,353**	**76%**	**34**	**38,363**	**76%**

Source: SF Planning Department, December 2012, Adavant Consulting, July 2013

Based on the trip distribution patterns by land use presented in Table 4.E.13 on p. 4.E.39, approximately 40 of the 83 inbound transit trips (48 percent) generated during the weekday p.m. peak hour by the proposed project or the Public Parking Variant would cross the Muni screenlines and 26 (31 percent) would cross the regional screenlines, while 17 (20 percent) inbound trips would not cross any transit screenline. Similarly, approximately 35 inbound transit trips (50 percent) generated during the weekday p.m. peak hour by the Residential/Hotel Mixed Use Variant would cross the Muni screenlines and 22 (31 percent) would cross the regional screenlines, while 13 (19 percent) would not cross any transit screenline.

The predominant flow of travel in the weekday p.m. peak hour is away from downtown San Francisco and, as a result, the Muni and regional screenlines that travel into downtown San Francisco from other parts of the City and the region have relatively low ridership. For example, the Muni bus lines that operate along Market Street, the Muni Metro lines traveling in the Market Street subway, and the BART trains from the East Bay all have available capacity during the weekday p.m. peak hour.

Since the existing Muni and regional transit capacity is currently available in the inbound direction during the p.m. peak hour, it is anticipated that the addition of the 40 local and 26 regional transit trips with the proposed project or Public Parking Variant (or the 35 local and 22 regional transit trips with the Residential/Hotel Mixed Use Variant) spread over multiple lines traveling inbound would not substantially affect existing transit conditions.

Therefore, since the proposed project and variants would not increase transit ridership beyond what could be accommodated on existing transit capacity, nor would they cause a substantial increase in delays in transit service, the proposed project and its variants would have a less-than-significant impact on transit, and no mitigation would be required.

Although no mitigation would be required because the proposed project and its variants would not result in significant impacts on traffic or transit facilities, the TIS identifies the following improvement measures to encourage mode shift to transit and improve transportation operating conditions.

Improvement Measure I-TR-A: Transit Information for Residents

To encourage the use of transit to/from the project site, the project sponsor should provide a transportation insert in the new resident's move-in packet that would provide information on available transit service (nearby lines, schedules and fares), information on where Clipper Cards could be purchased, and information on the 511 Regional Rideshare Program.

Improvement Measure I-TR-B: Alternative Transportation Modes for Hotel Guests

To encourage the use of alternative transportation modes, the hotel operator would provide an option for hotel guests registering online to purchase one, three, or seven-day Muni Passports or pre-loaded Clipper Cards, and would have Muni Passports and pre-loaded Clipper Cards available for purchase at the hotel. The hotel operator would provide information on the hotel website about how to access the hotel and nearby attractions via transit, walking, and bicycling.

Pedestrian Impacts

Impact TR-3: The proposed project and its variants 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*)

Residential pedestrian access to the ground floor of the proposed building under the proposed project and the two project variants would be through lobby entrance doors located at the midpoint of the proposed building frontage on Steuart Street. Pedestrian access to the proposed restaurant for the project and the two project variants would be through doors on Howard Street near Steuart Street; access to the café would be located at the southeast corner of the proposed building on Steuart Street.

Public pedestrian access to the proposed parking garage under the Public Parking and Residential/Hotel Mixed Use Variants would be via a door on Howard Street adjacent to the vehicular driveway entrance. Under the Residential/Hotel Mixed Use Variant, access for hotel guests would be through the same lobby entrance doors as the proposed project, midpoint along Steuart Street.

During the p.m. peak hour, there would be 236 outbound and 282 inbound pedestrian trips (362 walk trips plus 156 transit trips) generated by the proposed project and the Public Parking Variant; the Residential/Hotel Mixed Use Variant would generate 260 outbound and 254 inbound pedestrian trips (348 walk trips plus 166 transit trips).[28] These estimates are based on the mode split information described above and include walk trips and trips by public transit that would involve walking from the bus, streetcar, train, or ferry to the project site.

The proposed project and its variants would maintain the existing sidewalk width on the south side of Howard Street, and would widen the two existing sidewalks along the Steuart Street cul-de-sac to provide additional landscaping and pedestrian areas. The west side sidewalk would be widened from the existing 16 feet to approximately 24 feet, including a 6-foot setback of the ground floor wall along the eastern property line. The west sidewalk would remain approximately 16 feet wide in front of the residential/hotel building entrance to provide for a 3-vehicle passenger drop-off/pick-up zone (eight feet wide by 68 feet long). The east sidewalk would be widened from the existing 22 feet to approximately 32 feet. In addition, the roadway in

[28] TIS, p. 72.

the cul-de-sac would be raised by about six inches so that the roadway and the sidewalks are a single surface of the same elevation. In addition to receiving approval from the San Francisco Planning Commission, the project sponsor would need to seek approval from the Department of Public Works (DPW), the Municipal Transportation Agency Board of Directors, and the Board of Supervisors for the proposed sidewalk widenings and cul-de-sac reconfiguration, including review for compliance with the requirements of the Americans with Disabilities Act.[29]

A comparison of the Existing and Existing plus Project/Variants sidewalk and crosswalk LOS for the weekday p.m. and Saturday midday peak hours is shown in Table 4.E.20: Sidewalk and Crosswalk Pedestrian Level of Service for Existing and Existing plus Project/Variants (Weekday and Saturday Peak Hour). The addition of pedestrians from the proposed project or its variants would result in increases in the pedestrian flows at all study locations and changes in the LOS during the weekday and Saturday peak hours. None of the study locations would operate worse than LOS C under future conditions, except for the East-West crosswalk on the south side of the Steuart/Howard streets intersection. This location would operate at LOS D under the Existing plus Residential/Hotel Mixed Use Variant scenario during the Saturday midday peak hour, compared with LOS C under current conditions.

Nonetheless, all locations would continue to operate at an acceptable LOS (LOS B or better for sidewalks and LOS D or better for crosswalks) during the weekday p.m. and Saturday midday peak hours under Existing plus Project and Existing plus Variant conditions.[30]

Conflicts between pedestrians and vehicles could occur at the project garage driveway, located on the south side of Howard Street near the west property line, which could cause the potential for inbound vehicles to queue onto Howard Street. Outbound vehicles would queue inside the garage and would not affect street traffic. The proposed project and its two variants would be subject to the implementation of a *Driveway Operations Plan*, identified as an Improvement Measure in the TIS, and presented below as Improvement Measure I-TR-C on p. 4.E.55. The *Driveway Operations Plan* would help to ensure that vehicle queues and/or substantial pedestrian conflicts do not occur by prohibiting trucks from entering the project driveway on weekdays between the hours of 7 to 9 a.m. and 4 to 7 p.m. Trucks would be permitted to exit during these hours, but only with the active guidance of a driveway or valet attendant. To further prevent queues from

[29] Prior to final design and approval, the Steuart Street Plaza will require review by City agencies through the Transportation Advisory Staff Committee (TASC), including Planning, DPW, SFMTA, and SFFD. The plaza will be designed in accordance with the *San Francisco Better Streets Plan's* guidelines for a shared street.

[30] TIS, p. 75.

Table 4.E.20: Sidewalk and Crosswalk Pedestrian Level of Service for Existing and Existing plus Project/Variants (Weekday and Saturday Peak Hour)

Location	Existing		Existing plus Project/Public Parking Variant		Existing plus Residential/Hotel Mixed Use Variant	
Weekday PM Peak Hour						
Sidewalks	**Flow [a]**	**LOS**	**Flow [a]**	**LOS**	**Flow [a]**	**LOS**
South side of Howard Street, west of the garage entrance	0.53	B	0.83	B	0.81	B
South side of Howard Street, east of the garage entrance	0.47	A	0.76	B	0.75	B
West side of Steuart Street, south of Howard Street [b]	0.44	A	1.17	B	1.16	B
Crosswalks	**Area [c]**	**LOS**	**Area [c]**	**LOS**	**Area [c]**	**LOS**
N-S Crosswalk on the east side of Spear/Howard streets	36.3	C	30.9	C	30.9	C
E-W Crosswalk on the south side of Spear/Howard streets	38.0	C	33.9	C	33.9	C
E-W Crosswalk on the south side of Steuart/Howard streets [d]	90.0	A	54.6	B	54.6	B
Saturday Midday Peak Hour [e]						
Sidewalks	**Flow [a]**	**LOS**	**Flow [a]**	**LOS**	**Flow [a]**	**LOS**
South side of Howard Street, west of the garage entrance	0.44	A	0.74	B	0.72	B
South side of Howard Street, east of the garage entrance	0.84	B	1.13	B	1.12	B
West side of Steuart Street, south of Howard Street [b]	0.30	A	0.97	B	0.96	B
Crosswalks	**Area [c]**	**LOS**	**Area [c]**	**LOS**	**Area [c]**	**LOS**
N-S Crosswalk on the east side of Spear/Howard streets	72.3	A	55.8	B	55.8	B
E-W Crosswalk on the south side of Spear/Howard streets	57.5	B	40.7	C	40.7	C
E-W Crosswalk on the south side of Steuart/Howard streets [d]	31.2	C	25.8	C	23.5	D

Notes:
[a] Pedestrian unit flow (pedestrians per minute per foot).
[b] Calculated in front of the building entrance, where the 8-ft.-wide and 68-ft.-long passenger drop-off/pick-up zone is located. The west side sidewalk of the Steuart Street cul-de-sac would be approximately 16 ft. wide at this location; the analysis assumes an effective sidewalk width of 9 ft.
[c] Pedestrian circulation area (amount of square feet per pedestrian).
[d] The east-west crosswalk on the south side of Steuart and Howard streets would be shortened from the existing 44 ft. to approximately 26 ft.
[e] Assumes a similar number of project- and variant-generated pedestrians during the weekday and Saturday peak hours.

Source: Adavant Consulting, July 2012

blocking any portion of the sidewalk or Howard Street roadway, including any portion of any travel lanes or bike lanes, the TIS identified additional Improvement Measures, presented below as Improvement Measures I-TR-D and I-TR-E on pp. 4.E.55-4.E.56. A comparison of potential vehicular and pedestrian conflicts for Existing and Existing plus Proposed Project/Variant conditions is presented in Table 4.E.21: Pedestrian and Vehicular Conflicts at the Proposed Garage Driveway Entrance for Existing and Existing plus Proposed Project/Variants (Weekday PM Peak Hour). The data presented is for the weekday p.m. peak hour at the proposed garage driveway entrance, which would be located in virtually the same location as the existing driveway.

Table 4.E.21: Pedestrian and Vehicular Conflicts at the Proposed Garage Driveway Entrance for Existing and Existing plus Project/Variants (Weekday PM Peak Hour)

Scenario	Average Vehicles per minute			Average Pedestrians on sidewalk per minute
	Inbound	Outbound	Total	
Existing	0.5	1.6	2.1	4.5
Proposed project	0.7	0.5	1.2	6.8
Public Parking Variant	1.4	1.1	2.5	6.8
Residential/Hotel Variant	1.6	1.6	3.2	6.7

Source: Adavant Consulting, July 2012

The total number of vehicles expected to access the garage under the proposed project would be about 40 percent lower than existing conditions. The number of vehicles accessing the garage under the Public Parking Variant would be about 20 percent higher than existing, and approximately 52 percent higher than existing under the Residential/Hotel Mixed Use Variant. Although the proposed project and its variants would provide fewer parking spaces than currently provided by the existing parking garage, the different utilization of those spaces by the proposed new land uses (residential and hotel, which have a higher evening demand than the nearby office buildings that generate most of the parking demand for the existing garage) would cause the increase in driveway traffic shown in Table 4.E.21. The future number of pedestrians traversing the garage driveway would also increase due to the new proposed activities generated by the proposed project and the variants, with the total pedestrian flow being about 50 percent higher under all three future scenarios than under existing conditions.

Nonetheless, the vehicle and pedestrian flow values resulting from the proposed project and its variants would be relatively small (about one vehicle and 2.5 pedestrians every twenty seconds on average); therefore, neither the proposed project nor the variants would likely cause any major conflict or interfere with pedestrian movements in the area.

Since pedestrian and vehicle flows adjacent to the project site would be moderate in this area, with the crosswalks and sidewalks operating at acceptable LOS, the proposed driveway would not be expected to significantly impact pedestrian conditions. However, in order to improve visibility and awareness of cars and pedestrians at the garage entrance, the TIS identifies an Improvement Measure, presented as Improvement Measure I-TR-E on p. 4.E.56, to install mirrors and an audible and visual device at the garage entrance to automatically alert pedestrians when a vehicle is exiting the facility.

Therefore, since the additional pedestrians generated by the proposed project and its variants would not reduce the pedestrian LOS such that it would result in substantial overcrowding on public sidewalks or crosswalks, nor would the proposed project and its variants create potentially hazardous conditions for pedestrians by generating substantial numbers of vehicles crossing the sidewalk at the driveway curbcut, or otherwise interfere with pedestrian accessibility to the site and adjoining areas, the impacts of the proposed project and its variants would be less than significant, and no mitigation is required.

Improvement Measure I-TR-C: Driveway Operations Plan

The owner/operator of the proposed project shall implement and adhere to all aspects of the *Driveway Operations Plan*, presented in the 75 Howard Street Project Transportation Study. The *Driveway Operations Plan* shall be a living document for the life of the project driveway, recorded with the Planning Department as part of the project case file. All updates to the *Driveway Operations Plan* shall be reviewed and approved by the Director of Planning, or his or her designee.

Upon the request of the Director of Planning, or his or her designee, the owner/operator shall submit to the Department evidence of compliance with the *Driveway Operations Plan*, including but not limited to, records of loading dock activity and security camera footage.

If the Planning Director, or his or her designee, suspects that the facility owner/operator is not adhering to the *Driveway Operations Plan*, the Planning Department shall notify the property owner in writing. If after 90 days since written notification, the Department determines that the owner/operator is still not adhering to the *Driveway Operations Plan*, the driveway shall be considered in violation of the Condition of Approval.

Improvement Measure I-TR-D: Vehicle Queues and Pedestrian Conflicts

It shall be the responsibility of the owner/operator of the proposed project to ensure that vehicle queues do not block any portion of the sidewalk or roadway of Howard Street, including any portion of any travel lanes or bike lanes. The owner/operator shall also ensure that no substantial pedestrian conflict as defined below is created at the project driveway.

A vehicle queue is defined as one or more stopped vehicles destined to the project garage blocking any portion of the Howard Street sidewalk or roadway for a consecutive period of three minutes or longer on a daily or weekly basis, or for more than five (5) percent of any 60-minute period. Queues could be caused by unconstrained parking demand exceeding parking space or valet/mechanical parking system capacity; vehicles waiting for safe gaps in high volumes of pedestrian traffic; car or truck congestion within the parking garage or loading area; or a combination of these or other factors.

A substantial pedestrian conflict is defined as a condition where drivers of inbound and/or outbound vehicles, frustrated by the lack of safe gaps in pedestrian traffic, unsafely merge their vehicle across the sidewalk while pedestrians are present and force pedestrians to stop or change direction to avoid contact with the vehicle, and/or contact between pedestrians and the vehicle would occur.

If vehicle queues or substantial conflicts occur, the owner/operator of the facility shall employ abatement methods as needed to abate the queue and/or conflict. Appropriate abatement methods would vary depending on the characteristics and causes of the queue and conflict. 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 additional valet attendants or improved mechanical parking system; use of off-site parking facilities or shared parking with nearby uses; travel demand management strategies such as additional bicycle parking or resident/visitor shuttles; parking demand management strategies such as time-of-day parking surcharges; and/or limiting hours of access to the project driveway during periods of peak pedestrian traffic.

If the Planning Director, or his or her designee, suspects that vehicle queues or a substantial conflict are present, the Planning Department shall notify the property owner in writing. The owner/operator shall hire a qualified transportation consultant to evaluate the conditions at the site for no less than seven days. The consultant shall submit a report to the Department documenting conditions. Upon review of the report, the Department shall determine whether or not queues and/or a substantial conflict exists, and shall notify the garage owner/operator of the determination in writing.

If the Department determines that queues or a substantial conflict do exist, upon notification, the facility owner/operator shall have 90 days from the date of the written determination to carry out abatement measures. If after 90 days the Department determines that vehicle queues and/or a substantial conflict are still present or that the owner/operator has been unsuccessful at abating the identified vehicle queues or substantial conflicts, the hours of inbound and/or outbound access of the project driveway shall be limited during peak hours. The hours and directionality of the access limitations shall be determined by the Planning Department, communicated to the owner/operator in writing, and recorded in an updated *Driveway Operations Plan*. The owner/operator shall be responsible for limiting the hours of project driveway access as specified by the Planning Department.

Improvement Measure I-TR-E: Installation of Pedestrian Alerting Devices

As an improvement measure to minimize conflicts between pedestrians and vehicles in front of the proposed project, a mirror and an audible and visual device would be installed at the garage entrance to automatically alert pedestrians when a vehicle is exiting the facility.

Bicycle Impacts

Impact TR-4: The proposed project and its variants would not create potentially hazardous conditions for bicyclists, or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas. (*Less than Significant)*

Bicycle Parking

Pursuant to Planning Code Sections 155.2, 155.4, and 155.5, the proposed project would be required to provide a minimum of 59 bicycle parking spaces, the Public Parking Variant would be required to provide 64 bicycle parking spaces, and the Residential/Hotel Mixed Use Variant would be required to provide 60 bicycle parking spaces. In summary, the requirements are:

- For residential projects over 50 dwelling units, 25 Class 1 bicycle spaces are required, plus one bicycle space for every four dwelling units over 50; therefore, 172 residential units (project and Public Parking Variant) would require 59 Class 1 bicycle spaces, while 103 residential units (Residential/Hotel Mixed Use Variant) would require 40 Class 1 bicycle spaces.
- Garages that offer between 120 and 500 automobile parking spaces are required to provide one Class 1 or Class 2 bicycle space for every 20 automobile spaces; therefore 93 non-residential spaces (Public Parking Variant) would require five Class 1 or Class 2 bicycle spaces, while 161 non-residential spaces (Residential/Hotel Mixed Use Variant) would require eight Class 1 or Class 2 bicycle spaces.
- Hotel uses above 100,000 gsf (Residential/Hotel Mixed Use Variant) require 12 Class 1 or Class 2 bicycle spaces.
- Bicycle parking would not be required for the café and restaurant uses, with an area of less than 25,000 gsf.

The Planning Code bicycle parking requirements are shown in Table 4.E.22: Minimum San Francisco Planning Code Bicycle Parking Requirements for Existing plus Project and Variants.

Table 4.E.22: Minimum San Francisco Planning Code Bicycle Parking Requirements for Existing plus Project and Variants

Scenario	Residential [a]	Restaurant/ Café [b]	Public Garage [b]	Hotel [b]	Total
Proposed Project	59	0	0	0	59
Public Parking Variant	59	0	5	0	64
Residential/Hotel Variant	40	0	8	12	60

Notes:
[a] Class 1 bicycle spaces are facilities which protect the entire bicycle, its components and accessories against inclement weather, including wind-driven rain.
[b] Class 1 or Class 2 bicycle spaces. Class 2 bicycle spaces permit the locking of the bicycle frame and one wheel to the rack, which supports the bicycle in a stable position without damage to wheels, frame or components.

Source: SF Planning Code, Adavant Consulting, July 2013

The proposed project and the variants would provide 64 Class 1 bicycle parking spaces on Basement Level 1. Under the proposed project and the Public Parking variant, 59 bicycle spaces would be allocated to residents and five spaces would be available to visitors and employees. Under the Residential/Hotel Variant, 40 Class 1 bicycle spaces would be allocated to residents and 24 spaces would be available to visitors, employees, and hotel guests. Thus, the bicycle parking provided in the proposed project and variants would meet the Planning Code requirements.

All the bicycle parking spaces would be located near the residential and public elevators, which would be sized appropriately to accommodate bicycles. Cyclists would also have the option to ride or walk their bike down the garage ramp, rather than use the elevators. Pursuant to Planning Code Section 155.3, the residential and hotel components of the proposed project and the variants would be exempt from providing shower and clothes locker facilities. The café and restaurant uses would also be exempt since their combined area is no greater than 10,000 gsf.

Thus, as currently defined, the proposed project and variants would meet or exceed the Planning Code requirements for the provision of bicycle parking.

Bicycle Travel

The proposed project and variants would result in an increase in the number of bicycles in the vicinity of the project site. However, this increase would not, in itself, be substantial enough to affect bicycle travel in the area. In addition, there would be an increase in passenger and freight loading and unloading activity at the driveway of the proposed garage, at the Steuart Street cul-de-sac, and at the proposed loading zone on Howard Street. This activity would result in more automobile and bicycle conflicts.

Project vehicles accessing the garage driveway could conflict with eastbound bicycle traffic on Howard Street. Although eastbound Howard Street is not part of the City's designated bicycle network, 12 bicyclists have been observed traveling eastbound on Howard Street during the p.m. peak hour, and 5 bicyclists were observed during the Saturday midday peak hour.

Automobile-bicycle conflicts already occur in the area, since a driveway entrance/exit already exists on Howard Street to access the 75 Howard Garage at the same location where the proposed project driveway would be located. These conflicts could become more frequent due to an increase in vehicles entering and exiting the parking garage from/to Howard Street; however, the overall traffic volume entering or exiting the proposed garage at Howard Street during the p.m. peak hour would be lower (up to about three vehicles per minute in total), which combined with the low bicycle traffic (one bicycle every five minutes) would result in a relatively minor potential for automobile-bicycle conflicts. Implementation of the queue abatement program, identified on pp. 4.E.55-4.E.56 as Improvement Measure I-TR-D under Impact TR-3, would ensure that vehicle queues do not block any portion of the roadway of Howard Street, including any portion of any travel lanes or bike lanes. This Improvement Measure would also be applicable to Impact TR-4.

The increase in the number of automobile-bicycle conflicts at this location would not be expected to result in potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the site and adjoining area.

Thus the proposed project or variants would not be expected to significantly impact bicycle parking or cyclists ability to bike safely. The proposed project and its variants would have a less-than-significant impact on bicycle transportation, and no mitigation measures are required.

While no mitigation would be required, improvement measures were identified in the TIS to improve bicycle transportation conditions for the proposed project and its variants. Improvement Measure I-TR-F: Installation of Bicycle Racks on the Steuart Street Plaza and Improvement Measure I-TR-G: Provision of Bicycle Signage and Information would be applicable to the proposed project and its variants while Improvement Measure I-TR-H: Bicycle Availability to Hotel Guests would be applicable only to the Residential/Hotel Mixed Use Variant.

Improvement Measure I-TR-F: Installation of Bicycle Racks on the Steuart Street Plaza

As an improvement measure to accommodate hotel and restaurant/retail visitors arriving by bicycle, the project sponsor would coordinate the installation of bicycle racks on the Steuart Street plaza with the San Francisco Municipal Transportation Agency. The project sponsor would work with SFMTA to establish the appropriate number and best location of the bicycle racks.

Improvement Measure I-TR-G: Provision of Bicycle Signage and Information

As an improvement measure to facilitate bicycle travel the project sponsor will add appropriate signage and information in/near bicycle parking areas describing access to local bicycle routes and entries/exits to and from the bicycle parking area.

Improvement Measure I-TR-H: Bicycle Availability to Hotel Guests

As an improvement measure to encourage bicycling to local destinations by hotel guests, the hotel operator will make bicycles available for use by hotel guests. Information about the program characteristics and requirements will be provided on the hotel website. The hotel operator will also provide information to hotel guests about purchasing a short-term membership in the City's bicycle share program, if implemented.

Loading Impacts

Impact TR-5: The loading demand of the proposed project and variants during the peak hour of loading activities would be accommodated within the proposed on-site loading facilities or within convenient on-street loading zones, and would not create potentially hazardous traffic conditions or significant delays involving traffic, transit, bicycles, or pedestrians. (*Less than Significant*)

The proposed project and the variants would provide two off-street freight loading spaces in Basement Level 1; both loading bays would be 35 feet in length and 12 feet in width, with a minimum vertical clearance of 14 feet. Delivery and service vehicles would travel down the garage ramp where a loading turntable and parking attendant would assist the vehicles with entering the loading space and with exiting the garage via the ramp. Deliveries would reach the upper floors via a service elevator accessible from the loading dock.

Off-Street Loading Space Code Requirements

Planning Code Section 152.1 requires two off-street loading spaces for the proposed project and the Public Parking Variant (residential use between 200,000 and 500,000 gsf), while two off-street loading spaces would also be required for the Residential/Hotel Mixed Use Variant (one each for the residential and hotel uses of between 100,000 and 200,000 gsf). Also, based on the same Planning Code section, off-street freight loading spaces would not be required for the café and restaurant uses, since they would have a combined total area of less than 10,000 gsf.

Pursuant to Planning Code Section 162, the Residential/Hotel Mixed Use Variant would be exempt from providing a tour bus parking space since the proposed number of hotel rooms would fall below the minimum threshold of 201 hotel rooms.

Thus, the proposed project and the variants would meet the Planning Code requirements for the provision of off-street freight loading facilities.

Off-Street Loading Space Demand

Loading demand is summarized in Table 4.E.14 (p. 4.E.40), which shows that the proposed project and the Public Parking Variant would generate a loading demand for 1.4 spaces during the average loading hour and 1.7 spaces during the peak loading hour, while the Residential/Hotel Mixed Use Variant would generate a loading demand for 1.7 spaces during the average loading hour and 2.1 spaces during the peak loading hour.

The proposed project and the Public Parking Variant would meet the loading demand by supplying two off-street loading spaces. The average loading hour demand for the Residential/Hotel Mixed Use Variant would also be met with the proposed off-street loading space supply, while the peak loading hour demand would be 0.1 spaces higher than the number of available off-street spaces.

About 40 metered spaces designated for commercial loading already exist on Steuart Street, north of Howard Street, several of them near the intersection of Howard and Steuart streets. Any of these spaces could be used if the on-site loading spaces in the loading dock area were occupied.

Truck access to the project loading areas would be from Howard Street, similar to the existing vehicular entrance/exit operations at the 75 Howard Garage. Since typical delivery trucks would not be large semi tractor-trailers or concentrated during the peak commute hours, it is anticipated that delays to existing traffic due to truck operations in and out of the loading dock would be minimal.

Passenger Loading and Unloading

Passenger loading and unloading activities could occur at two proposed locations, subject to approval from SFMTA through the Color Curb Program. Residential pick-up and drop-off operations, and hotel pick-up and drop-off operations with the Residential/Hotel Mixed Use Variant, would occur at the proposed 68-foot-long pull-out area on the west side of the Steuart Street cul-de-sac. Under the Residential/Hotel Mixed Use Variant, this pick-up and drop-off area would be shared by building residents and hotel guests. Restaurant customer pick-ups and drop-offs could occur at the proposed 40-foot passenger zone located on the south side of Howard Street, in front of the restaurant entry near Steuart Street. These two passenger loading areas would be expected to be used by both private vehicles and taxis. The peak passenger vehicle loading/unloading demand during the peak 15 minutes for the hotel use under the Residential/Hotel Mixed Use Variant has been estimated to be one vehicle, which could be accommodated in the proposed area at the hotel entrance that would have the capacity to accommodate three vehicles.

Garbage Pick-Up

The proposed project and its variants would have a separate enclosed trash area in Basement Level 1, immediately adjacent to and accessible from the loading docks. Garbage and recycling trucks would enter the loading dock area from Howard Street via the garage ramp for pick-up, and use the truck turntable for maneuvering.

The *Driveway Operations Plan* to be implemented for the project driveway, identified as Improvement Measure I-TR-C on p. 4.E.55, would prohibit trucks entering the project driveway between 7 and 9 a.m., and 4 and 7 p.m. on weekdays. Trucks would be permitted to exit the project driveway at any time, but truck drivers exiting during the restricted hours would be actively guided by a driveway attendant.

Therefore, since the proposed project and project variants would accommodate commercial and passenger loading demand, and would not create potentially hazardous traffic conditions or significant delays involving traffic, transit, bicycles, or pedestrians, the proposed project and its variants would have less-than-significant impacts on loading, and no mitigation is required.

Although no mitigation would be required because the proposed project and its variants would not result in significant loading impacts, the following improvement measures are identified to improve loading operations and minimize indirect effects on transportation operating conditions in the project vicinity.

Improvement Measure I-TR-I: Sidewalk Widening

To improve pedestrian conditions in the area and to facilitate pedestrian movement in front of the project site, the project sponsor would work with SF Planning, SFMTA, and DPW to consider the potential construction of a wider sidewalk on the south side of Howard Street. The south sidewalk would be widened by approximately 7 feet, from the an existing width of about 13.5 feet to approximately 21.5 feet, starting at the west edge of the project site and extending east through the proposed Steuart Street Plaza, and onto The Embarcadero. The project sponsor would be required to fund the design and construction of this improvement.

To facilitate passenger drop offs and pick ups, the existing 16-foot-wide sidewalk would not be widened for an approximate length of 35 feet at the proposed curbside white zone in front of the restaurant entrance near Steuart Street. Thus, the sidewalk widening would extended for a total distance of approximately 273 feet, 115 ft. from the west edge to Steuart Street, excluding the proposed passenger zone, 76 feet through the proposed Steuart Street Plaza, and 82 feet to The Embarcadero.

This improvement measure would require that the proposed 24-foot wide curb cut that provides access into the Basement Level 1 parking garage and loading docks be widened to about 26 feet, in order to facilitate truck turning movements in and out of the building.

This improvement measure would also require the additional elimination of four automobile and two motorcycle metered spaces on the south side of Howard Street (two automobile spaces in front of the project site, and two automobile and two motorcycle spaces west of Steuart Street), resulting in the elimination of a total of 15 automobile and two motorcycle metered spaces by the proposed project and the two variants. The increase in parking utilization created by the elimination of these on-street spaces would add to the expected parking deficits in the area during the midday period, but would be expected to be accommodated by other existing on-street spaces in the area during the evening period. The parking deficits associated with the proposed project and Variants would not create a significant parking impact.

Improvement Measure I-TR-J: Reservation of Curb Parking for Residential Move-In and Move-Out

The project sponsor shall ensure that parking spaces on Howard Street, adjacent to the project site, are reserved as needed through the SFMTA by calling the San Francisco Customer Service Center (311) prior to move-in and move-out activities. This would reduce the potential for double parking on Howard Street during move-in and move-out activities. The project sponsor could also require tenants to schedule and coordinate move-in and move-out activities with building management to space out loading activities.

Emergency Access Impacts

Impact TR-6: Construction and operation of the proposed project or its variants would not result in inadequate emergency access. (*Less than Significant*)

Access to the project site would remain similar to existing conditions. The existing sidewalks on the east and west sides of the Steuart Street cul-de-sac would be widened and the total roadway width reduced from the existing 44.5 feet (one lane each way with on-street parking on each side) to 26 feet (one lane each way with no on-street parking allowed, except at the passenger curbside drop-off and pick-up zone). This dimension complies with the minimum requirement stated by the Bureau of Equipment of the SFFD, which calls for a minimum of 20 feet of unobstructed roadway (SF Fire Code Section 503.2.1). The project sponsor would be required to receive approval from the SFFD for the proposed sidewalks and resulting roadway width on Steuart Street, and the need, or lack of a turnaround or emergency vehicle access at the end of the Steuart Street cul-de-sac. If needed by SFFD, the design of Steuart Street could accommodate additional emergency vehicle access.

Therefore, the proposed project and its variants would result in a less-than-significant impact to emergency vehicle access, and no mitigation is required.

Parking Impacts

Impact TR-7: Construction and operation of the proposed project or its variants would not have a significant effect on the environment as they would not result in a substantial parking deficit that could create hazardous conditions or significant delays affecting traffic, transit, bicycles or pedestrians nor would the proposed project or its variants exhibit particular characteristics that would demonstrably render use of other modes infeasible. ***(Less than Significant)***

Parking conditions are not static, as 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. While parking conditions change over time, a substantial deficit in parking caused by a project that creates hazardous conditions or significant delays to traffic, transit, bicycles or pedestrians could adversely affect the physical environment. Whether a deficit in parking creates such conditions will depend on the magnitude of the shortfall and the ability of drivers to change travel patterns or switch to other travel modes. If a substantial deficit in parking caused by a project creates hazardous conditions or significant delays in travel, such a condition could also result in secondary physical environmental impacts (e.g., air quality or noise impacts cause by congestion), depending on the project and its setting.

The absence of a ready supply of parking spaces, combined with available 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 *San Francisco General Plan* Polices, including those in the Transportation Element. The City's Transit First Policy, established in the City's Charter 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 is unavailable on the project site. The secondary effects of drivers searching for parking is typically offset by a reduction in vehicle trips due to others who are aware of constrained parking conditions in a given area, and thus choose to reach their destination by other modes (i.e. walking, biking, transit, taxi). If this occurs, any secondary environmental impacts that may result from a shortfall in parking in the vicinity of the proposed project would be minor, and the traffic assignments used in the transportation analysis, as well as in the associated air quality, noise and pedestrian safety analyses, would reasonably address potential secondary effects.

Parking Supply

The off-street parking supply in the proposed project and the two variants is summarized in Table 4.E.23: Parking Supply for Proposed Project and Variants.

Table 4.E.23: Parking Supply for Proposed Project and Variants

Scenario	Private Residential	Assigned to Commercial Uses	Reserved for Car-share	Public Garage	Total
Proposed Project	172	2	1	0	175
Public Parking Variant	172	2	3	91	268
Residential/Hotel Variant	103	7	4	154	268

Source: SOM, September 2012

The project would provide a total of 175 parking spaces in a parking garage located in Basement Level 2. One parking space would be reserved for car-share vehicles, 2 spaces would be allocated to commercial uses on site, and 172 parking spaces would be assigned to building residents. Parking spaces for residents would be unbundled from the sale of dwelling units, consistent with Planning Code Section 166. Public parking spaces would be priced according to the provisions of Planning Code Section 155(g).

The Public Parking Variant and the Residential/Hotel Mixed Use Variant would provide an additional 93 parking spaces in Basement Level 2, for a total of 268 parking spaces. The Public Parking Variant would provide 3 car-share parking spaces, 2 spaces for commercial use, 172 spaces reserved for building residents, plus 91 public parking spaces. The Residential/Hotel Mixed Use Variant would provide 4 car-share parking spaces, 7 spaces for commercial uses on the site (including the hotel), 103 parking spaces reserved for building residents, and 154 public parking spaces.

Planning Code Section 151.1 allows off-street accessory parking at up to 0.25 cars per residential unit as of right in C-3 Districts.[31] The Planning Commission may grant additional accessory off-street parking, subject to Planning Code Section 151.1(f) and Section 309, up to the following amounts: one car parked per each dwelling unit that has two or more bedrooms and is greater than 1,000 gsf in size, and 0.75 car parked per dwelling unit that has one or fewer bedrooms or is otherwise smaller than 1,000 gsf in size. Thus, as shown in Table 4.E.24: Parking Code Requirements for Proposed Project and Variants, under the proposed project and the Public Parking Variant, the project sponsor would request approval to provide a total of 174 off-street parking spaces, of which 172 spaces would be for residential uses, and 2 for commercial uses. Under the Residential/Hotel Mixed Use Variant, the project sponsor would request approval to provide a total of 110 off-street parking spaces, of which 103 spaces would be for residential uses and 7 for commercial uses, including the hotel.

Table 4.E.24: Planning Code Requirements for Proposed Project and Variants

	Proposed Project	**Public Parking Variant**	**Residential/Hotel Variant**
Permitted as of right			
Residential	47	47	27
Restaurant/Café	2	2	2
Hotel	0	0	5
Subtotal as of right	49	49	34
With Commission Approval	125	125	76
Non-accessory (public parking)	0	91	154
Car-share	1	3	4
TOTAL	**175**	**268**	**268**

Source: SOM, October 2012

For the Public Parking and Residential/Hotel variants that propose to provide 91 and 154 additional off-street parking spaces for the general public, respectively, the project sponsor will request that the Planning Commission grant a Conditional Use authorization, pursuant to Planning Code Sections 158 and 303, for the non-accessory parking garage use proposed as part of the two project variants.

Planning Code Sections 155(i) and 166 require the proposed project to provide seven handicap-accessible parking spaces and one car-share[32] parking space. The Public Parking Variant would be required to provide 11 handicap-accessible parking spaces and 3 car-share parking spaces,

[31] Car-share parking spaces are not considered off-street accessory parking under Planning Code Section 166.
[32] Off-street parking spaces dedicated for use as a car-share parking space are not to be counted toward the total parking allowed as accessory.

while the Residential/Hotel Mixed Use Variant would be required to provide 10 handicap-accessible parking spaces and four car-share parking spaces.[33]

Because all cars would be parked by attendants or using a robotic valet system in mechanically stacked spaces, all the parking spaces provided by the proposed project or the variants would be suitable as handicap-accessible and car-share parking spaces.[34] Thus, the proposed project and the two variants would meet the Planning Code requirements for provision of handicap-accessible and car-share parking spaces.

Planning Code Section 145.1(c)(2) limits the width of the parking and loading access driveway for the project to no more than 20 feet. The proposed driveway along Howard Street would be about 24 feet wide and therefore the project sponsor will seek approval from the Zoning Administrator of a variance from the Planning Code access width requirement.

Parking Demand

As shown in Table 4.E.15 (p. 4.E.42) and in Table 4.E.25, below, the proposed project and the Public Parking Variant would generate a total parking demand for 271 spaces during the midday and 318 spaces in the evening. The Residential/Hotel Mixed Use Variant would generate a total parking demand for 205 spaces during the midday and 248 spaces in the evening. In addition, the existing 540 public parking spaces at the 75 Howard Garage would be eliminated, increasing the total demand for off-street parking in the area.

Parking demand would not be accommodated within the proposed supply of off-street parking spaces for either the proposed project or the variants, as shown in Table 4.E.25: Parking Surplus/Deficit for Proposed Project and the Variants (Weekday Midday and Evening Periods). There would be a shortfall of 444 to 600 spaces during the weekday midday period and a shortfall of 118 to 278 spaces during the weekday evening period. As discussed in "Parking Conditions" (pp. 4.E.23-4.E.27), on-street parking spaces in the study area are almost full and there is very limited parking availability (approximately 200 spaces) at midday at the existing off-street parking facilities within the project area. While the off-street parking spaces proposed for the proposed project and Variants would be less than the anticipated parking demand at midday, the resulting net parking deficits of 244 to 400 spaces (taking into account the approximately 200 existing off-street spaces available) would not be expected to result in a significant parking impact. Due to the difficulty in finding parking during the midday, motorists may park outside of

[33] The handicapped and car-share parking requirement calculations are presented in the TIS, Appendix H.
[34] TIS, p. 83. There would be an area approximately 20 feet wide by 26 feet long that would be able to accommodate accessible vehicles, including vans.

Table 4.E.25: Parking Surplus/Deficit for Proposed Project and Variants (Weekday Midday and Evening Periods)

Scenario	Supply [a]	Midday (1 PM- 3 PM) Demand [b]	Midday (1 PM- 3 PM) Surplus/ Deficit	Evening (7 PM- 9 PM) Demand [b]	Evening (7 PM- 9 PM) Surplus/ Deficit
Proposed Project					
Residential	172	218	-46	258	-86
Commercial	2	53	-51	60	-58
Public Parking	0	503 [c]	-503	134 [c]	-134
Total	**174**	**774**	**-600**	**452**	**-278**
Public Parking Variant					
Residential	172	218	-46	258	-86
Commercial	2	53	-51	60	-58
Public Parking	91	503 [c]	-412	134 [c]	-43
Total	**265**	**774**	**-509**	**452**	**-187**
Residential/Hotel Mixed Use Variant					
Residential	103	130	-27	154	-51
Commercial and Hotel	7	75	-68	94	-87
Public Parking	154	503 [c]	-349	134 [c]	20
Total	**264**	**708**	**-444**	**382**	**-118**

Notes:
[a] Excludes parking spaces assigned to car-share vehicles.
[b] See Table 4.E.16, p. 4.E.43.
[c] Vehicles currently parking at the 75 Howard Garage.

Source: Adavant Consulting, July 2013

the study area or carpool, or alternatively, since the project area is well served by transit, bicycle, and pedestrian facilities, motorists might switch to transit, walking, or bicycling. In addition, San Francisco is in the process of implementing a more efficient way of managing its on-street and public garage parking supply though implementation of the SF*park* program administered by SFMTA, which includes the study area for this project. SF*park* uses new technologies and parking pricing policies to optimize the use of existing parking resources in order to make finding a parking space faster and easier and, by extension, reducing circling by vehicles looking for parking near their destination. Therefore, any unmet parking demand associated with the project would not materially affect the overall parking conditions in the project vicinity such that hazardous conditions or significant delays are created.

Table 4.E.8 (p. 4.E.26) shows that there are over 550 parking spaces available in the project area at the existing off-street parking facilities during the evening period, even with several of the existing garages being closed after 7 p.m. Thus, there would be a sufficient supply of off-street parking spaces during the weekday evening period to accommodate the expected parking demand generated by the proposed project and the variants, including those displaced by the elimination of the 75 Howard Garage.

On-Street Parking Modifications

The proposed project and its variants would eliminate a total of 11 metered on-street parking spaces – three metered spaces on the south side of Howard Street as a result of the relocation of the garage driveway to the west and the provision of a two-vehicle on-street passenger loading/unloading zone for the proposed restaurant, and an additional eight metered spaces on the Steuart Street cul-de-sac to provide additional landscaping and pedestrian amenities. Parallel on-street parking on the north side of Howard Street would continue to be provided as exists today.

The increase in parking utilization created by the elimination of the 11 spaces would add to the expected parking deficits in the area during the midday period. During the evening period, the displaced vehicles would be expected to be accommodated by other existing on-street spaces in the area.

Parking Operations

Vehicle access to the residential, commercial, and public underground parking would be via a 24-foot-wide two-way entrance at the west end of the proposed building along Howard Street, near the same northwest corner location as the entrance to the existing 75 Howard Garage.

As shown in Table 4.E.16 (p. 4.E.43), between 71 and 193 vehicles would access the project garage during the p.m. peak hour, depending on the project or the variants. These represent approximately three vehicles entering or exiting every minute. Using the expected ingress and egress traffic volumes and the fact that the proposed mechanical parking system with four elevators would be able to process about two vehicles per minute,[35] the estimated maximum inbound queue (90 percent probability) at the vehicular entrance would be about seven vehicles under the worst case scenario (for the Residential/Hotel Mixed Use Variant).[36]

The control point for the mechanical elevators in the garage would be located at the bottom of the ramp in Basement Level 1, approximately 200 feet away from the street,[37] within which there would be the ability to accommodate about nine to ten vehicles. Therefore, it is not anticipated that the proposed project or the variants would cause any traffic congestion resulting from queuing or interfere with loading operations.

While parking operations are not expected to result in queues that spill out of the parking garage and back onto Howard Street, the following improvement measure has been developed to ensure that recurring vehicle queues do not occur.

[35] TIS, p. 86.
[36] TIS, p. 86.
[37] TIS, p. 86.

Improvement Measure I-TR-K: Installation of Electronic "Parking Full" Sign

As an improvement measure to minimize traffic congestion and queuing on Howard Street, an electronic sign that can be operated from inside the garage to indicate when the garage is full would be installed at the project garage entrance.

In addition, a *Driveway Operations Plan*, identified as Improvement Measure I-TR-C on p. 4.E.55, would include a provision to restrict trucks from entering the driveway between 7 a.m. and 9 a.m. or between 4 p.m. and 7 p.m. on weekdays. This truck restriction, if implemented as part of Improvement Measure I-TR-C, would also help to reduce the potential for queues to extend onto Howard Street.

In summary, with the off-street parking provided under the proposed project and its variants, the proposed project would not result in a substantial parking deficit that would create hazardous conditions or significant delays affecting traffic, transit, bicycles or pedestrians. Therefore, impacts related to parking would be less than significant and no mitigation is required.

Construction Impacts

Impact TR-8: Construction of the proposed project and its variants would not result in significant transportation impacts. (*Less than Significant*)

Project construction would take about 30 months. Assuming that construction would begin in early 2014, the residential tower could be ready for occupancy in the summer of 2016. Demolition would take about 11 weeks. Basement construction would take a total of about 19 weeks (including the following overlapping phases: 14 weeks of excavation, 5 weeks of pile driving, and about 7 weeks to construct the mat and floor slabs and basement walls). Above-ground building construction would take about 70 weeks. The construction of the open space improvement area would likely occur during the last half of the construction period for the above-ground construction.

Construction and phasing under both variants would be similar to the proposed project. However, one week would be added to the overall schedule for the project variants to accommodate additional shoring, excavation and foundation work required for the construction of the deeper basement.

The excavation and shoring for the underground basement and parking garage (with an estimated duration of 21 to 22 weeks) represents the phase with the highest demand for construction workers and trucks, with an average of 38 one-way truck trips (102 one-way truck trips during the peak) that would travel to and from the site on a typical weekday. This phase would not be expected to have any overlap with other major project construction activities.[38]

While the exact routes that construction trucks would use would depend on the location of the available disposal sites, it is expected that Fremont Street, First Street, Howard Street, The Embarcadero, and Harrison Street would be the primary haul and access routes to and from U.S. 101 and I-80. Truck staging and loading activities would occur on site. The impact of construction truck traffic on those streets would be a temporary lessening of their traffic-carrying capacities due to the slower movement and larger turning radii of trucks, which may temporarily affect traffic and transit operations.

Construction-related activities would typically occur Monday through Friday, from 7 a.m. to 8 p.m. Some construction activities may occur later or on Saturdays, on an as-needed basis. The construction contractor(s) would be required to follow the most recent version of the *Regulations for Working in San Francisco Streets* manual (the "Blue Book"), available from SFMTA, which establishes rules and permit requirements so that construction activities can be done safely and with the lowest level of possible conflicts with pedestrians, bicyclists, transit, and vehicular traffic.

Construction staging would occur primarily within the project site and along the adjacent sidewalks on Howard and Steuart streets. Although the sidewalks adjacent to the project site could be closed for periods of time during project construction, these closures would be temporary in nature, and alternative pedestrian circulation routes along those streets would be provided during the construction duration.

If any temporary traffic lane, parking lane or sidewalk closures would be needed, the closures would be coordinated with City staff in order to minimize the effects on local traffic and circulation. In general, lane and sidewalk closures are subject to review and approval by the City's Transportation Advisory Staff Committee (TASC) that consists of representatives of City departments including SFMTA, DPW, SFFD, Police, Public Health, Port, and the Taxi Commission. There are no Muni bus stops adjacent to the project site, so none would need to be relocated, but the project sponsor and construction contractor(s) would contact Muni's *Street Operations and Special Events Office* to coordinate construction activities and minimize any potential delays to transit service near the project site, such as the 30X Marina Express, whose outbound terminal is located on the north side of Howard Street, at the northeast corner with Spear Street.

[38] TIS, p. 80.

An average of 60 construction workers and a peak of 72 workers could be on site during the highest demand phase of construction (excavation and shoring). The trip distribution and mode split of these workers is not available, but it is anticipated that the addition of the construction worker vehicle- and transit-trips would not substantially affect the transportation conditions, as any impacts on the vehicular and transit network would be at least 50 percent less than those associated with the proposed project or the variants. In addition, construction workers would cause a temporary parking demand. Since the nearby public off-street and on-street parking facilities in the vicinity of the project site to the north currently have some availability during the day, it is anticipated that construction worker parking demand (at most 72 vehicles) could be accommodated without substantially affecting area-wide parking conditions.

Overall, the construction-related transportation impacts of the proposed project and project variants would be less than significant. The project sponsor or construction contractor would be required to prepare a traffic control plan for the project construction period, which would seek to reduce potential conflicts between construction activities and pedestrians, transit, and vehicles at the project site, as well as with other projects under construction in the area. The project sponsor and construction contractor(s) would meet with the Traffic Engineering Division of SFMTA, DPW, SFFD, Muni Operations, and other City agencies to coordinate feasible measures to reduce traffic congestion and other measures to reduce potential traffic and transit disruption and pedestrian circulation effects during construction of the proposed project.

Since the impacts from construction of the proposed project or variants would be less than significant, no mitigation is required.

While no mitigation is required, the following improvement measures are identified to further reduce potential conflicts between construction activities and pedestrians, transit and vehicles, carpool and transit access for construction workers, and project construction updates for adjacent businesses and residents:

Improvement Measure I-TR-L: Expanded Traffic Control Plan for Construction

To reduce potential conflicts between construction activities and pedestrians, transit and vehicles at the project site, the project sponsor and project contractor would be required to prepare a Traffic Control Plan (TCP) for the project construction period. In addition to the standard elements of the TCP such as coordination with the San Francisco Municipal Transportation Agency, Department of Public Works, San Francisco Fire Department, etc., and the mandatory compliance with the *San Francisco Regulations for Working in San Francisco Streets* (the “Blue Book”), the expanded TCP could include:

- Implementation of any necessary lane closures during times that avoid the a.m. and p.m. peak commute periods;
- Stationing of uniformed off-duty San Francisco Police officers at various locations to facilitate the movement of pedestrians, bicyclists and transit vehicles;

- Scheduling of construction truck trips during hours of the day other than the peak morning and evening commute periods; and
- Development of a construction activities plan so that certain activities such as pile driving do not disturb the Muni Metro tunnel located west of the project site.

Improvement Measure I-TR-M: Carpool and Transit Access for Construction Workers

As an improvement measure to minimize parking demand and vehicle trips associated with construction workers, the construction contractor would include methods to encourage carpooling and transit access to the project site by construction workers as part of a Construction Management Plan.

Improvement Measure I-TR-N: Project Construction Updates for Adjacent Businesses and Residents

As an improvement measure to minimize construction impacts on access to nearby locations, the project sponsor would provide nearby residences and adjacent businesses with regularly-updated information regarding project construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), travel lane closures, parking lane and sidewalk closures. A web site could be created by the project sponsor that would provide current construction information of interest to neighbors, as well as contact information for specific construction inquiries or concerns.

CUMULATIVE IMPACT EVALUATION

Impact C-TR-1: The proposed project would contribute considerably to reasonably foreseeable future cumulative traffic increases that would cause levels of service to deteriorate to unacceptable levels at the intersection of Spear and Howard streets. (*Significant and Unavoidable with Mitigation*)

The 2035 Cumulative intersection operating conditions for the weekday p.m. peak hour are presented in Table 4.E.26: Intersection Level of Service for Existing and 2035 Cumulative Conditions (Weekday PM Peak Hour).

Under 2035 Cumulative conditions, vehicle delays would be greater at the study intersections compared to existing conditions. Three of the nine study intersections would operate at LOS C or LOS D, while the other six intersections of The Embarcadero/Mission Street, The Embarcadero/Howard Street, The Embarcadero/Folsom Street, The Embarcadero/Harrison Street, Spear/Howard streets, and Spear/Folsom streets would degrade to LOS E or LOS F. The most substantial change in LOS would occur along Spear Street due to the elimination of one or two southbound travel lanes between Market Street and Folsom Street, and their conversion into one northbound travel lane as part of the TDCP Public Realm Plan.

The contribution of the proposed project and the variants to critical movements was examined at the six intersections operating at LOS E or LOS F in 2035 to determine whether the vehicle trips generated by the proposed project or either variant would contribute considerably to critical

Table 4.E.26: Intersection Level of Service for Existing and 2035 Cumulative Conditions (Weekday PM Peak Hour) [a]

	Intersection Name	Existing		2035 Cumulative	
		Delay [b]	LOS	Delay [b]	LOS
1	The Embarcadero/Mission St.	36.3	D	**> 80**	**F**
2	The Embarcadero/Howard St.	44.6	D	**> 80**	**F**
3	The Embarcadero/Folsom St.	42.8	D	**> 80 [c]**	**F [c]**
4	The Embarcadero/Harrison St.	40.3	D	**> 80**	**F**
5	Steuart St./Mission St.	17.1	B	23.6	C
6	Steuart St./Howard St.	14.3	B	32.0	D
7	Spear St./Howard St.	24.4	C	**71.6 [c]**	**E [c]**
8	Spear St./Folsom St.	16.0	B	**> 80 [c]**	**F [c]**
9	Fremont St./Folsom St./I-80 WB off-ramp	35.4	D	48.8 [c]	D [c]

Notes:
[a] Data in **bold** indicates intersection operating at LOS E or F.
[b] Intersection delay presented in seconds per vehicle.
[c] Reflects intersection modifications being proposed as part of the Public Realm Plan of the TCDP.
Source: Adavant Consulting, July 2013

movements operating at LOS E or LOS F.[39] The TIS concluded that the proposed project and both variants would have minimal contributions to the critical movements operating at LOS E or LOS F at five of the six intersections. Therefore, the contribution of the proposed project and its variants to the 2035 Cumulative impacts at the five intersections operating unacceptably (LOS E or F) would not be considered significant.

The vehicle trips generated by the proposed project and both variants would contribute considerably to the critical movements at the intersection of Spear and Howard streets. At that intersection the proposed project and the Public Parking Variant would add a total of 102 vehicle trips during the weekday p.m. peak hour, and the Residential/Hotel Mixed Use Variant would add 91 vehicles during the same p.m. peak period. The proposed project and the Public Parking Variant would add 52 vehicle trips to the southbound left/through/right critical movements that would operate at LOS F, while the Residential/Hotel Mixed Use Variant would add 37 vehicle trips to the same critical movements. The proposed project and Public Parking Variant contribution to the southbound movement would be 8.5 percent, while the Residential/Hotel Mixed Use Variant contribution would be 6.1 percent. Therefore, the contributions of the project and the two variants to the 2035 Cumulative impact at the intersection of Spear and Howard streets would be considered significant.

It is important to note that this significant impact would only materialize when the recommendations of the TCDP Public Realm Plan on Spear Street are implemented, as assumed in the 2035 Cumulative scenario. The *TCDP Transportation Impact Study* also identified a significant impact at the intersection of Spear Street and Howard Street. To improve operations

[39] TIS, p. 91.

at this intersection, the *TCDP Transportation Impact Study* identified Mitigation Measure PRP-TRAFFIC-1i,[40] which proposed a reduction in the extent of or the removal of the bulb-outs proposed by the Public Realm Plan along Spear Street to allow for striping of left turn pockets on the northbound and southbound Spear Street approaches. This measure is shown below as Mitigation Measure M-C-TR-1. In addition, Mitigation Measure PRP-TRAFFIC-1i would optimize the signal timing plan and prohibit eastbound left turns during the weekday p.m. peak hour at this intersection. The *TCDP Transportation Impact Study* established the feasibility of this mitigation measure as uncertain and considered mitigation to less-than-significant conditions infeasible. For this reason the *TCDP Transportation Impact Study* identified the future cumulative impacts of the Public Realm Plan at the intersection of Spear and Howard streets as significant and unavoidable.

Consistent with the *TCDP Transportation Impact Study* findings, in order to improve operations at the intersection of Spear and Howard streets in the year 2035 as part of the proposed project and its variants, the configuration of the northbound and southbound approaches would have to be modified to incorporate left-turn-only lanes, and minor adjustments to the traffic signal timing would have to be implemented, in which case the average vehicle delays would decrease and the intersection operations would improve to LOS D during the weekday p.m. peak hour. Based on these results, it would not be necessary to also prohibit eastbound left turns during the weekday p.m. peak hour under 2035 conditions, as also called for in the TCDP *Transportation Impact Study* in order to mitigate the impact of the proposed project and its variants.

As stated above, no mitigation would be needed if the TCDP Public Realm Plan modifications to Spear Street were not implemented, because the LOS would not degrade to LOS E or F in the future; however, implementation of the TCDP Public Realm Plan is assumed for the 2035 cumulative conditions. Therefore, Mitigation Measure M-C-TR-1 has been identified for the proposed project and its variants.

Mitigation Measure M-C-TR-1: Modifications to the Intersection of Spear and Howard Streets

If changes to the current configuration of Steuart Street were to be implemented as part of the TCDP Public Realm Plan, configuration of the northbound and southbound approaches along Spear Street shall be modified to incorporate left-turn-only lanes and minor adjustments to the traffic signal timings at the intersection of Spear and Howard streets.

In summary, implementation of Mitigation Measure M-C-TR-1 would reduce the impact of the proposed project or its variants to a less-than-significant levels (from LOS E to LOS D); however, this mitigation measure is considered infeasible. Therefore, the proposed project and its variants

[40] TIS, p. 86.

would have a significant and unavoidable impact at the intersection of Spear Street/Howard Street.

Impact C-TR-2: The proposed project would not contribute considerably to reasonably foreseeable future cumulative increases in transit ridership that would cause ridership to exceed capacity standards. (*Less than Significant*)

The analysis of cumulative conditions for transit operators considers likely changes to transit service between the existing year and the future year (2035). Included are changes to Muni service following implementation of the TEP recommendations, the Central Subway Project (which is scheduled to open in 2018), the new Transbay Transit Center, introduction of new ferry routes as part of the Water Emergency Transportation Authority (WETA) ferry network, electrification of Caltrain and associated capacity improvements, and other proposed changes identified in the short−range transit plan (SRTP) documents of the various transit operators.

The Muni and regional transit screenline ridership and capacity data for the p.m. peak hour are shown for the year 2035 in Table 4.E.27: Muni Screenline Analysis for the Outbound Direction, 2035 Cumulative Conditions (Weekday PM Peak Hour) and Table 4.E.28: Regional Transit Screenline Analysis for the Outbound Direction, 2035 Cumulative Conditions (Weekday PM Peak Hour), p. 4.E.77.[41]

Table 4.E.27 presents the Muni screenline data for 2035 Cumulative conditions. Between Existing and 2035 Cumulative conditions, weekday p.m. peak hour ridership demand at the four Muni screenlines is projected to increase by about 4,670 passengers (25 percent), while capacity is projected to increase by about 3,520 passengers (13 percent). None of the screenlines would operate at or above Muni's 85 percent capacity standard under 2035 cumulative conditions, although the Geary Corridor is expected to operate above Muni's 85 percent capacity standard.

The proposed project and the Public Parking Variant would generate about 36 outbound transit trips during the p.m. peak hour that would cross the Muni screenlines, of which 13 trips, 9 trips, 8 trips, and 6 trips would travel across the northeast, northwest, southeast, and southwest screenlines, respectively. Similarly, about 51 outbound transit trips would be generated by the Residential/Hotel Mixed Use Variant during the p.m. peak hour that would cross the Muni screenlines, of which 13 trips, 15 trips, 14 trips, and 9 trips would travel across the northeast, northwest, southeast, and southwest screenlines, respectively.

[41] Appendix E of the TIS contains the detailed 2035 Cumulative conditions for Muni and regional screenline analysis calculations.

Table 4.E.27: Muni Screenline Analysis for the Outbound Direction, 2035 Cumulative Conditions (Weekday PM Peak Hour)

Screenline	Project/ Public Parking Variant Trips	Residential/ Hotel Variant Trips	2035 Cumulative		
			Ridership	Capacity	Utilization
Northeast					
Kearny/Stockton	10	10	1,841	2,359	78%
Other Lines	3	3	799	1,218	66%
Subtotal	*13*	*13*	*2,640*	*3,577*	*74%*
Northwest					
Geary	3	5	3,267	3,826	**85%**
California	2	4	1,178	1,841	64%
Sutter/Clement	1	1	433	630	69%
Fulton/Hayes	2	3	1,081	1,386	78%
Balboa	1	2	730	929	79%
Subtotal	*9*	*15*	*6,689*	*8,612*	*78%*
Southeast					
Third Street	1	2	1,974	2,856	69%
Mission Street	3	5	2,104	2,836	74%
San Bruno/Bayshore	2	4	1,740	2,134	82%
Other Lines	2	3	1,189	1,801	66%
Subtotal	*8*	*14*	*7,007*	*9,627*	*73%*
Southwest					
Subway Lines	5	7	5,157	6,624	78%
Height/Noriega	1	2	1,248	1,554	80%
Other Lines	0	0	318	840	38%
Subtotal	*6*	*9*	*6,723*	*9,018*	*75%*
Total All Screenlines	**36**	**51**	**23,059**	**30,834**	**75%**

Note: Grey shading indicates that value exceeds Muni capacity utilization policy standard.
Source: SFMTA Transit Ridership Counts 2010/2011, Adavant Consulting, July 2013

The addition of these trips to the Muni screenlines and subcorridors would result in an average 0.2 percent and an up to 0.5 percent increase in 2035 Cumulative p.m. peak hour ridership, which would have a minimal contribution to the cumulative transit ridership and is well within the daily variation of transit demand, including proposed project and project variant contributions to the Geary Corridor that operates above the 85 percent capacity utilization threshold. Therefore, the proposed project and the two variants would not contribute considerably to significant cumulative impacts on Muni service under cumulative conditions.[42]

The regional transit screenline data for 2035 Cumulative conditions is shown in Table 4.E.28: Regional Transit Screenline Analysis for the Outbound Direction, 2035 Cumulative Conditions (Weekday PM Peak Hour). Between existing and 2035 Cumulative conditions, weekday p.m. peak hour ridership demand at the three regional screenlines is projected to increase by about 23,000 passengers (60 percent), while capacity is projected to increase by about 33,500

[42] TIS, p. 93.

Table 4.E.28: Regional Transit Screenline Analysis for the Outbound Direction, 2035 Cumulative Conditions (Weekday PM Peak Hour)

Screenline	Project/Public Parking Variant Trips	Residential/Hotel Variant Trips	2035 Cumulative		
			Ridership	Hourly Capacity	Capacity Utilization
East Bay					
BART	12	18	28,780	33,170	87%
AC Transit	1	2	7,000	12,000	58%
Ferry	0	1	5,319	5,940	90%
Subtotal	*13*	*21*	*41,099*	*51,110*	*80%*
North Bay					
GGT buses	4	4	2,070	2,817	73%
GGT Ferry	2	3	1,619	1,959	83%
Subtotal	*6*	*7*	*3,689*	*4,776*	*77%*
South Bay					
BART	4	5	13,847	24,182	57%
Caltrain	1	1	2,529	3,600	70%
SamTrans	0	0	150	320	47%
Ferries	0	0	59	200	30%
Subtotal	*5*	*6*	*16,585*	*28,302*	*59%*
Total All Screenlines	**24**	**34**	**61,373**	**84,188**	**73%**

Source: SF Planning Department, December 2012, Adavant Consulting, July 2013

passengers (66 percent). None of the capacity utilization of the regional screenlines is expected to be above each regional transit operator's load factor standards in 2035.

The proposed project and the Public Parking Variant would generate about 24 outbound transit trips during the p.m. peak hour that would cross the regional screenlines, of which 13 would travel on across the East Bay screenline, 6 across the North Bay screenline, and 5 across the South Bay screenline. Similarly, about 34 outbound transit trips would be generated by the Residential/Hotel Mixed Use Variant during the p.m. peak hour that would cross the regional screenlines, of which 21 would travel on across the East Bay screenline, 7 across the North Bay screenline, and 6 across the South Bay screenline. The addition of these trips to the regional screenlines and subcorridors would result in a less than 0.2 percent increase in 2035 Cumulative ridership, which would have a minimal contribution to the cumulative transit ridership and is well within the daily variation of transit demand. Therefore, the proposed project and variants would have a less-than-significant impact on the regional transit lines under cumulative conditions.

Thus, under 2035 Cumulative conditions, one Muni corridor on the Northwest screenline would exceed the capacity utilization standard, resulting in a significant cumulative impact. However, transit ridership generated by the proposed project and its variants would not contribute considerably at any of the Muni or regional screenlines. Therefore, the cumulative impact of the proposed project and its variants would be less than significant. Transit mitigation measures are not required.

Impact C-TR-3: Construction impacts of the proposed project or its variants would not result in a considerable contribution to a significant cumulative impact when combined with construction of other reasonably foreseeable future projects in the vicinity of the project site. (*Less than Significant*)

The construction of the proposed project may overlap with the construction of other projects proposed nearby, including the 120 Howard Street project, the 350 Mission Street project, the 177-187 Fremont Street project, the proposed Golden State Warriors arena project, the Transit Tower, and other development pursuant to the *Transit Center District Plan*. Construction associated with these projects would temporarily affect access, traffic, and pedestrians. The construction manager for each project would work with various City departments such as the San Francisco Fire Department and the San Francisco Municipal Transportation Agency to develop a detailed and coordinated plan that would address construction vehicle routing, traffic control, and pedestrian movement adjacent to the construction area for the duration of any overlap in construction activity.

The cumulative impacts of multiple nearby construction projects would not be cumulatively considerable, as the construction would be of temporary duration, and the sponsors and/or construction contractors of the proposed project or its variants would coordinate with various City departments such as SFMTA and DPW through the TASC to develop coordinated plans that would address construction-related vehicle routing and pedestrian movements adjacent to the construction area for the duration of construction overlap. Therefore, the proposed project and its variants would not contribute considerably to any significant construction transportation impacts, and the impact would not be significant. No mitigation measures are necessary.

Proposed Golden State Warriors Arena– 2040 Cumulative Traffic Conditions

As noted above on pp. 4.E.42-4.E.43, the transportation analysis performed for this project evaluates cumulative conditions for the year 2035, the latest year for which information is available, and is consistent with the most recent studies that had been conducted in the area, such as the 34th America's Cup EIR.

The 75 Howard Street project is located in within the study area for the proposed Golden State Warriors Arena and related development at Piers 30/32 and Seawall Lot 330. The Arena project is undergoing environmental review; however the data on transportation effects of the Arena project has not been fully developed. In addition, the City is in the process of updating its cumulative transportation analysis model to the year 2040, for use in analyzing the impacts of the Arena. This data and analysis are expected to be available the fall of 2013, considerably after the 75 Howard Street Project DEIR is published.

Given that the 2040 cumulative traffic estimates will not be available prior to the publication of the 75 Howard Street DEIR, a separate memorandum for the 75 Howard Street, *Assessment of Year 2040 Cumulative Traffic Conditions for the 75 Howard Street Project*, has been prepared to provide an assessment of the proposed Arena project in that context of future 2040 cumulative traffic conditions within the study area of the 75 Howard Street project.[43] As identified above in Table 4.E.26, p. 4.E.73, five of the nine study intersections are expected to operate at LOS F in 2035 (The Embarcadero/Mission Street, The Embarcadero/Howard Street, The Embarcadero/Folsom Street, The Embarcadero/Harrison Street, and Spear/Folsom streets) and would continue to do so by 2040. The intersection of Spear/Folsom streets is expected to operate at LOS E in 2035, but would likely degrade LOS F by 2040, as a result of background traffic growth. The proposed project and both Variants' contributions to the critical movements at these six locations would be similar to that calculated for 2035, or perhaps even somewhat lower as a result of the likely growth in background traffic.

Also identified in Table 4.E.26, p. 4.E.73, three of the nine study intersections would be expected to operate at a LOS D or better in 2035 (Steuart/Mission streets, Steuart/Howard streets, and Fremont/Folsom streets (1-80 westbound off-ramp). Under 2040 conditions some or all of these three intersections would experience an increase in vehicle delay, resulting in a degraded level of service: LOS E or perhaps LOS F for Steuart/Howard streets and Fremont/Folsom streets, and likely LOS E for Steuart/Mission streets. However, as shown in Table 4.E.29: Intersection Level of Service, Proposed Project and Variants' Maximum Net Contribution to the 2035 Critical Traffic Volumes Weekday PM Peak Hour, the maximum net contributions to the critical movements that either the proposed project or variants would make at these three locations would be similar (and somewhat lower as a result of the background traffic growth) to 2035 conditions. The contributions at these locations would be two percent or less; therefore, no significant project or variant contribution to cumulative traffic impacts would be expected to occur at these three intersections by 2040.

Therefore, based on the estimate of future cumulative traffic conditions in the year 2040 within the study area of the 75 Howard Street project, there would be no additional substantial project or variant contribution to cumulative traffic impacts expected to occur at the nine study intersections by the year 2040, beyond those already identified for the year 2035. However, similar to 2035 conditions, the proposed project and Variants would continue to have a significant and unavoidable cumulative traffic impact at the intersection of Spear/Howard streets.

[43] Adavant Consulting, *Assessment of the Year 2040 Cumulative Traffic Conditions for the 75 Howard Street Project, Case No. 2011.1122!*, June 27, 2013. A copy of this document is available for public review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2011.1122E.

Table 4.E.29: Intersection Level of Service, Proposed Project and Variants' Maximum Net Contribution to the 2035 Critical Traffic Volumes Weekday PM Peak Hour[a]

	Intersection Name	Proposed Project and Public Parking Variant	Residential/Hotel Mixed Use Variant
1	The Embarcadero / Mission St.	**3.3%**	**2.4%**
2	The Embarcadero / Howard St.	**0.0%**	**0.0%**
3	The Embarcadero / Folsom St.[c]	**4.9%**	**3.5%**
4	The Embarcadero / Harrison St.	**4.5%**	**3.2%**
5	Steuart St. / Mission St.	2.0%	1.5%
6	Steuart St. / Howard St.	0.0%	0.0%
7	*Spear St. / Howard St.[c]*	***8.5% [b]***	***6.1% [b]***
8	Spear St. / Folsom St.[c]	**4.7%**	**3.4%**
9	Fremont St. / Folsom St. / I-80 WB off-ramp[c]	0.0%	0.0%

Notes:
[a] Data in **bold** indicates intersection operating at LOS E or F.
[b] The project and two variants contribution to the 2035 cumulative impacts at this location are above 5%, and would therefore be considered significant.
[c] Reflects intersection modifications being proposed as part of the Public Realm Plan of the TCDP.

Source: Adavant Consulting, June 2013

F. NOISE

INTRODUCTION

Section F, Noise, summarizes and incorporates the results of the *Environmental Noise and Vibration Assessment* for the 75 Howard Street project.[1] As described in Appendix A, the Initial Study, pp. 60-61, the project site is not located within an area covered by an airport land use plan or within 2 miles of a public airport or public use airport; nor is it within the vicinity of a private airstrip. Therefore, the proposed project and project variants would not expose people residing or working in the area to excessive airport or airstrip noise. Therefore, these issues are not addressed in this EIR.

This section explains how sound and vibration are characterized, describes existing acoustic and vibration conditions on and near the project site, and summarizes relevant regulations and standards as part of the Environmental Setting. The Impacts discussion evaluates project-related noise and vibration impacts and assesses the project's potential to expose sensitive receptors to noise or to generate noise levels exceeding applicable standards. Also assessed are the compatibility of existing and proposed land uses with ambient noise levels and the exposure of persons to groundborne vibration. Mitigation measures that would reduce significant noise and vibration impacts are identified.

ENVIRONMENTAL SETTING

FUNDAMENTALS OF ENVIRONMENTAL NOISE

The traditional definition of noise is "unwanted" sound. Sound becomes unwanted when it interferes with normal activities, such as sleep or conversation, or causes actual physical harm such as hearing loss. Sound is characterized by various parameters that describe the rate of oscillation (frequency) of sound waves, the distance between successive troughs or crests in the wave, the speed that it travels, and the pressure level or energy content of a given sound. The sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound, and the decibel (dB) scale is used to quantify sound intensity. Because sound can vary in intensity by over one million times within the range of human hearing, a logarithmic loudness scale is used to keep sound intensity numbers at a convenient and manageable level. Since the human ear is not equally sensitive to all sound frequencies within the entire spectrum, human response is factored into sound descriptions in a process called "A-weighting," expressed as "dBA." The dBA, or A-weighted decibel, refers to a scale of noise measurement that

[1] Brown-Buntin Associates, Inc, *Environmental Noise and Vibration Assessment for the 75 Howard Street Project, San Francisco, California*, January 10, 2013 (hereinafter referred to as "*Environmental Noise and Vibration Assessment*"). This document is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2011.1122E.

approximates the range of sensitivity of the human ear to sounds of different frequencies. On this scale, the normal range of human hearing extends from about 0 dBA to about 140 dBA. A 10-dBA increase in the level of a continuous noise represents a perceived doubling of loudness. The noise levels presented herein are expressed in terms of dBA, unless otherwise indicated.
Table 4.F.1: Typical Sound Levels Measured in the Environment shows some representative noise sources and their corresponding noise levels in dBA.[2]

Table 4.F.1: Typical Sound Levels Measured in the Environment

Examples of Common, Easily Recognized Sounds	Decibels (dBA) at 50 feet	Subjective Evaluations
Near Jet Engine	140	Deafening
Threshold of Pain (Discomfort)	130	
Threshold of Feeling – Hard Rock Band	120	
Accelerating Motorcycle (at a few feet away)	110	
Loud Horn (at 10 feet away)	100	Very Loud
Noisy Urban Street	90	
Noisy Factory	85	
School Cafeteria with Untreated Surfaces	80	Loud
Near Freeway Auto Traffic	60	Moderate
Average Office	50	
Soft Radio Music in Apartment	40	Faint
Average Residence Without Stereo Playing	30	
Average Whisper	20	Very Faint
Rustle of Leaves in Wind	10	
Human Breathing	5	
Threshold of Audibility	0	

Note:
Continuous exposure above 85 dBA is likely to degrade the hearing of most people. Range of speech is 50 to 70 dBA.
Source: U.S. Department of Housing and Urban Development, *The Noise Guidebook*, 1985

Planning for acceptable noise exposure must take into account the types of activities and corresponding noise sensitivity in a specified location for a generalized land use type. Some general guidelines are as follows: sleep disturbance can occur at levels above 35 dBA; interference with human speech begins at about 60 dBA; and hearing damage can result from

[2] U.S. Department of Housing and Urban Development, *The Noise Guidebook*, 1985, p. 1. Available online at http://portal.hud.gov/hudportal/documents/huddoc?id=DOC_16414.pdf. Accessed March 11, 2013.

prolonged exposure to noise levels in excess of 85 to 90 dBA.[3] In general, traffic noise increases of less than 3 dBA are barely perceptible to people, while a 5-dBA increase is readily noticeable.[4]

Attenuation of Noise

Distance from a source affects how noise levels attenuate (decrease). Transportation noise sources that tend to be arranged linearly, such as roadway traffic, attenuate at a rate of 3.0 dBA to 4.5 dBA per doubling of distance from the source, based on the inverse square law and the equation for cylindrical spreading of noise waves over hard and soft surfaces.[5] Point sources of noise, including stationary, fixed, and idle mobile sources like idling vehicles or construction equipment, attenuate at a rate of 6.0 dBA to 7.5 dBA per doubling of distance from the source, based on the inverse square law and the equations for spherical spreading of noise waves over hard and soft surfaces.

Significant attenuation of noise levels can also be accomplished by "shielding" or providing a barrier, which may be in the form of an intervening structure or terrain. The amount of noise level reduction provided by a barrier close to a source is dependent on the potential for reflection of noise around the barrier and the frequency spectra of the noise. Buildings next to a roadway may shield receptors from traffic noise and provide about 5 dBA of reduction, for closely spaced buildings.[6] Atmospheric conditions such as wind speeds, wind direction, humidity, and temperature gradients also affect noise propagation at greater distances.

Noise Descriptors

Time variations in noise exposure are typically expressed in terms of a steady-state energy level (the equivalent noise level or "L_{eq}") that represents the acoustical energy of a given measurement. L_{eq} is used to describe noise over a specified period of time, in terms of a single numerical value. The L_{eq} is the constant sound level that would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period). Because community receptors are more sensitive to unwanted noise intrusion during the

3 U.S. Environmental Protection Agency (USEPA), Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, March 1974, Appendices C and D. A copy of this document is available for public review at the San Francisco Planning Department, 1650 Mission Street, in Case File No. 2011.1122E.

4 California Department of Transportation, Division of Environmental Analysis, "Technical Noise Supplement," November 2009, pp. 2-48 and 2-49. Available online at http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf. Accessed March 11, 2013.

5 The additional 1.5 dBA of attenuation is from ground-effect attenuation that occurs above soft absorptive ground (such as normal earth and most ground with vegetation). Over hard ground (such as concrete, stone, and very hard-packed earth) these effects do not occur. (U.S. Housing and Urban Development, *The Noise Guidebook*, 1985, p. 24.)

6 California Department of Transportation, Division of Environmental Analysis, "Technical Noise Supplement," November 2009, pp. 2-39 and 2-40. Available online at http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf. Accessed March 11, 2013.

evening and at night, for planning purposes, an increment of 10 dBA is added to nighttime (10:00 p.m. to 7:00 a.m.) noise levels to form a 24-hour noise descriptor called the day-night noise level (L_{dn}). The maximum noise level (L_{max}) is the maximum instantaneous noise level measured during the measurement period of interest. The L_{eq}, L_{max}, L_{dn}, and the other statistical descriptors for noise that are used here are defined in terms of dBA using the A-weighted sound pressure level (also called sound level or noise level) scale.

Health Effects of Environmental Noise

The World Health Organization (WHO) is perhaps the best source of current knowledge regarding health impacts because European nations have continued to study noise and its health effects, while the U.S. Environmental Protection Agency (USEPA) all but eliminated its noise investigation and control program in the 1970s.[7] According to WHO, sleep disturbance can occur when continuous indoor noise levels exceed 30 dBA or when intermittent interior noise levels reach 45 dBA, particularly if background noise is low. With a bedroom window slightly open (a reduction from outside to inside of 15 dB), the WHO criteria suggest that exterior continuous (ambient) nighttime noise levels should be 45 dBA or below, and short-term events should not generate noise in excess of 60 dBA. WHO also notes that maintaining noise levels within the recommended levels during the first part of the night is believed to be effective for the ability to fall asleep.[8]

Other potential health effects of noise identified by WHO include decreased performance for complex cognitive tasks, such as reading, attention span, problem solving, and memorization; physiological effects such as hypertension and heart disease (after many years of constant exposure, often by workers, to high noise levels); and hearing impairment (again, generally after long-term occupational exposure, although possible due to shorter-term exposure to very high noise levels, for example, exposure several times a year to concert noise at 100 dBA). Finally, noise can cause annoyance and can trigger emotional reactions like anger, depression, and anxiety. WHO reports that during daytime hours, few people are seriously annoyed by activities with noise levels below 55 dBA, or moderately annoyed by activities with noise levels below 50 dBA. The importance of noise to receptors depends on both time and context. For example, long-term high noise levels from heavy traffic volumes can make conversation at a normal voice level difficult or impossible, while short-term peak noise levels occurring at night can disturb sleep.

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[7] The *San Francisco General Plan* Land Use Compatibility Guidelines for Community Noise are from this era.

[8] World Health Organization, Guidelines for Community Noise, 1999, Chapter 3, p. 46. Available online at http://www.who.int/docstore/peh/noise/guidelines2.html. Accessed March 11, 2013.

EXISTING NOISE ENVIRONMENT

Environmental noise in the dense urban setting of the proposed project is primarily dependent on proximity to vehicle traffic and the mix of vehicle types. As is the case in most urban areas, ambient noise in the project area is predominantly a result of surface traffic (motor vehicles), including the San Francisco Municipal Railway (Muni) Metro rail transit system. The Muni Metro light rail line is between the northbound and southbound lanes of The Embarcadero, with a ramp and tunnel portal approximately 175 feet east of the project site. Rail transit vehicles cause pass-by noise and noise from horns and bells for signals, announcements, and on-board mechanical systems. In addition, one Muni bus line (30X Marina Express) operates on Howard Street at the site. Howard Street and The Embarcadero are each major arterial streets with multiple travel lanes each way at the site. Noise from auto, truck, and bus traffic occurs, with about 10,000 vehicles per day on Howard Street and 30,000 vehicles per day on The Embarcadero.

Traffic noise also occurs as vehicles access off-street parking for the surrounding buildings (201 Spear Street and 2 Folsom Street) on the driveway that passes through the project site, on the Steuart Street right-of-way south of Howard Street. The Embarcadero generates most of the motor vehicle traffic noise in the area, with high volumes of through traffic, heavy-duty vehicles, and occasional sirens from emergency vehicles. Highway noise from the Bay Bridge also adds to the baseline noise levels and ensures that traffic is always audible, even during hours when foreground streets are quiet. The existing ambient noise environment at the project site is thus dominated by the rail transit, Muni buses, and motor vehicle noise generated on Howard Street, The Embarcadero, and the Bay Bridge.

The *San Francisco General Plan* includes a map of background noise levels throughout the City, based on noise modeling done by the San Francisco Department of Public Health of baseline traffic from the San Francisco County Transportation Authority travel demand model. The map of background noise levels shows the range of L_{dn} values that occurs along every street in San Francisco. The maps show that the adjacent roadway segments of Howard Street and The Embarcadero have noise levels in excess of 70 dBA (L_{dn}) at the project site.[9]

While continuous traffic noise dominates the environment, distinctive types of noise with shorter-term peaks are associated with truck back-up beepers, trucks unloading and loading material, car doors slamming, and engines revving during deliveries and pick-ups. These short-term noise events are capable of causing disturbance and annoyance, but they generally contribute very little to 24-hour noise levels due to their brief nature. The importance of noise to receptors depends on both time and context. For example, long-term high noise levels from large traffic volumes can

[9] *San Francisco General Plan*, Background Noise Levels, 2009. Available online at http://www.sf-planning.org/ftp/General_Plan/images/I6.environmental/ENV_Map1_Background_Noise%20 Levels.pdf. Accessed March 11, 2013.

make conversation at a normal voice level difficult or impossible, while short-term peak noise levels, if they occur at night, can disturb sleep.

The project site is within the *Transit Center District Plan* (TCDP) area, which does not contain a substantial number of stationary sources of noise that would be associated with heavy commercial or light industrial uses.[10] The primary stationary noise sources in the TCDP area are mechanical (heating, ventilation, and air conditioning) equipment on building roofs. Complaints have arisen in recent years when new residential uses were introduced to areas historically dominated by heavy commercial and light industrial uses. Because the TCDP area is substantially dominated by existing office uses, such conflicts are less likely to arise with new residential uses in the TCDP area, although it can be difficult to analyze or predict such conflicts in advance because noise measurements made at ground level often do not accurately reflect noise generated by rooftop equipment, especially when such equipment is many stories above grade.[11]

Buildings surrounding the project site include stationary sources of mechanical noise (such as ventilation equipment that is above grade). Mechanical noise sources and activity in the open space east of the proposed building site and the courtyard south of the garage also contribute to the setting.

Ambient Noise Measurements

An ambient noise survey was conducted by Brown-Buntin Associates for the proposed project in September 2012.[12] Ambient 24-hour and short-term noise measurement data were collected to establish the existing noise conditions in the project vicinity. The day-night noise level (L_{dn} over 24-hour period) was measured at one location outside the third level of the existing 75 Howard Garage structure beginning on September 6, 2012, and daytime and nighttime short-term noise levels (L_{eq} and L_{max}) were measured over 15-minute intervals at 10 locations in the project vicinity. Figure 4.F.1: Noise Measurement Locations illustrates the 24-hour and short-term noise measurement locations.

Table 4.F.2: 24-Hour Ambient Noise Levels in the Study Area, p. 4.F.8, presents the measured ambient noise levels, in terms of the hourly L_{eq} range and the L_{max}, as well as the calculated L_{dn} value. This table also identifies the noise level that is exceeded 90 percent of the time of each hour (L_{90} level). The L_{90} is generally considered to represent the residual (or background) noise level in the absence of identifiable or distinctive shorter-term high level noise events from vehicles, aircraft, or other sources.

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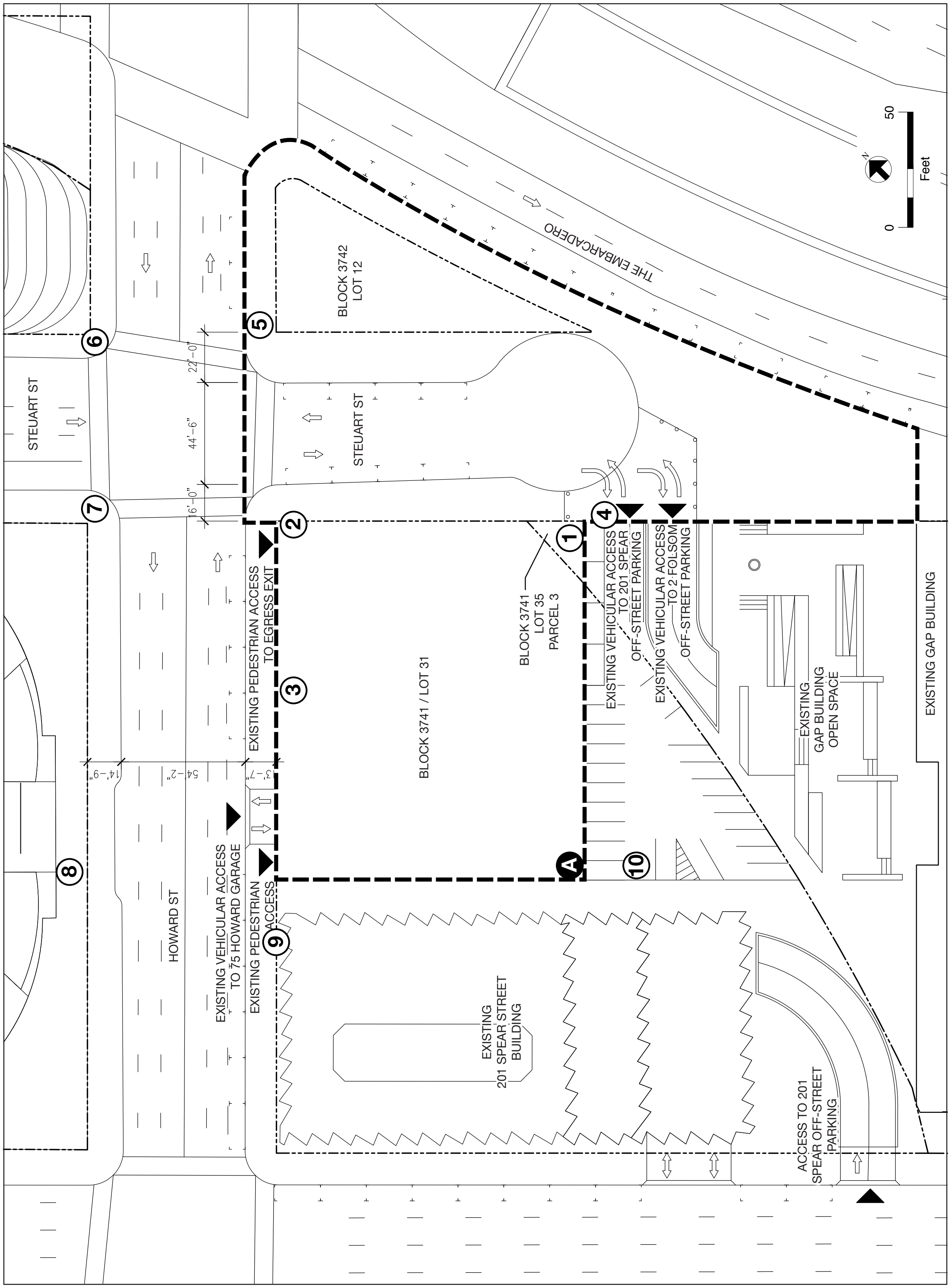
[10] TCDP EIR, p. 347.
[11] TCDP EIR, p. 347.
[12] *Environmental Noise and Vibration Assessment*, pp. 1-14.



SOURCE: Turnstone Consulting, SOM, Aspen Environmental

75 HOWARD STREET

PROJECT SITE BOUNDARY

A 24-HOUR NOISE MEASUREMENT

1 SHORT-TERM AMBIENT NOISE MEASUREMENT

FIGURE 4.F.1: NOISE MEASUREMENT LOCATIONS

Table 4.F.2: 24-Hour Ambient Noise Levels in the Study Area

Noise Measurement Location [a]	24-Hour Noise Level L_{dn}, dBA	Range of Hourly Noise Levels		
		L_{eq}, dBA	L_{max}, dBA	L_{90}, dBA
A: 75 Howard Garage, Third Level	67.5	56-65	66-84	51-62

Notes:
dBA = A-weighted decibels; L_{dn} = day-night noise level; L_{eq} = equivalent noise level; L_{max} = maximum noise level; L_{90} = noise level that is exceeded 90 percent of the time during of each hour.
[a] See Figure 4.F.1, p. 4.F.7, for noise measurement locations.
Source: Brown-Buntin Associates, Inc., 2013

Short-term (15-minute) noise measurements were performed in September 2012 at 10 locations on the roof of the 75 Howard Garage and at street level. Locations 1 to 3 were measured from the top of the garage, and Locations 4 to 10 were at the street level (see Figure 4.F.1, p. 4.F.7). These noise measurements included simultaneous observations of the dominant noise sources affecting the measurements (generally traffic, with nearby construction during daytime hours, and the voices of passers-by and light rail operations except during very early morning hours).
Table 4.F.3: Short-Term Noise Levels in the Study Area lists the short-term noise measurement results.

The background noise levels measured during the daytime hours (L_{eq}) were typically 6 to 9 dBA higher than noise levels in the nighttime hours. The levels at the short-term sites were in the range of 58 to 68 dBA (L_{eq}), with the highest levels as a result of a loud vehicle, emergency siren, or construction activities approaching 84 dBA (L_{max}). Residual noise levels reach a low of 51 to 55 dBA (L_{90}), indicating a persistence of traffic noise from surface streets and the nearby Bay Bridge during all hours. Based on short-term measurements taken several times throughout the daytime, nighttime, and very early morning hours, the 24-hour noise levels at Locations 1 to 4 were estimated to be in the range of 67 to 69 dBA (L_{dn}), which are consistent with modeling done for noise at street levels by the San Francisco Department of Public Health.

VIBRATION AND GROUNDBORNE NOISE

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Several different methods are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal in inches per second. The PPV is most frequently used to describe physical vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS.[13] In contrast to airborne noise, groundborne vibration is less

[13] Vibration velocity level is reported in decibels relative to a level of $1x10^{-6}$ inches per second and is denoted as VdB.

Table 4.F.3: Short-Term Noise Levels in the Study Area

Location Number	Noise Measurement Location [a]	Date and Time of Measurement		Noise Level		
		Date	Time	L_{eq}, dBA	L_{max}, dBA	L_{90}, dBA
1	Roof	9/5/12	2:31 PM	64.9	73.3	62.1
1		9/5/12	5:01 PM	65.3	74.1	62.3
1		9/5/12	9:15 PM	64.1	69.6	61.6
1		9/6/12	12:05 AM	61.4	64.1	58.8
1		9/6/12	3:25 AM	59.9	63.7	57.1
1		9/6/12	8:15 AM	65.8	70.3	63.0
1		9/6/12	12:15 PM	63.4	73.6	59.6
1		9/7/12	7:15 AM	64.8	70.8	61.1
2	Roof	9/5/12	2:46 PM	65.2	72.6	61.1
2		9/5/12	5:17 PM	65.1	71.9	61.0
2		9/6/12	9:31 PM	63.3	73.6	58.9
2		9/6/12	12:22 AM	61.9	64.4	57.8
2		9/6/12	3:43 AM	58.7	63.7	54.5
2		9/6/12	8:35 AM	68.1	77.5	64.2
2		9/6/12	12:34 PM	68.0	81.6	61.5
2		9/7/12	7:34 AM	67.9	80.8	63.0
3	Roof	9/5/12	3:05 PM	65.3	77.2	60.7
3		9/5/12	5:36 PM	66.4	78.7	61.9
3		9/6/12	9:48 PM	62.4	69.4	59.4
3		9/6/12	12:40 AM	61.4	62.9	57.0
3		9/6/12	4:01 AM	58.2	63.4	55.1
3		9/6/12	8:57 AM	68.2	80.0	63.4
3		9/6/12	12:52 PM	67.1	71.3	65.7
3		9/7/12	7:54 AM	67.5	76.5	63.9
4	Ground Level	9/5/12	3:29 PM	62.3	74.1	59.4
4		9/5/12	5:59 PM	64.0	77.7	61.0
4		9/5/12	10:09 PM	60.4	68.8	57.4
4		9/6/12	1:07 AM	58.5	64.6	54.5
4		9/6/12	4:21 AM	57.7	62.8	54.9
4		9/6/12	9:20 AM	64.7	74.8	61.5
4		9/6/12	10:46 AM	64.2	74.1	61.4
4		9/6/12	1:16 PM	62.6	77.0	58.2
4		9/7/12	8:22 AM	65.4	80.7	60.0
5	Ground Level	9/6/12	11:13 AM	68.0	82.6	61.3
6	Ground Level	9/6/12	11:32 AM	67.3	83.8	61.4
7	Ground Level	9/6/12	11:50 AM	67.3	75.8	62.0
8	Ground Level	9/6/12	1:44 PM	66.6	81.3	59.8
9	Ground Level	9/6/12	2:03 PM	64.6	75.6	60.2
10	Ground Level	9/6/12	2:20 PM	59.2	69.2	56.2

Notes:
L_{eq} = equivalent noise level; L_{max} = maximum noise level; L_{90} = noise level that is exceeded 90 percent of the time during each hour.
[a] See Figure 4.F.1, p. 4.F.7, for noise measurement locations.

Source: Brown-Buntin Associates, Inc. 2013 common, although the effects of energy transferred through the soils to building foundations can include perceptible movement of building floors or rumbling sounds. The rumbling sound caused by the vibration of room surfaces is called groundborne noise, which can occur as a result of the low-frequency components from a specific steady source of vibration, such as a rail line. Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Receptors sensitive to vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration-sensitive equipment.

Nearby sources of groundborne vibration include the Muni Metro light rail vehicles that use the ramp and portal east of the project block. Light rail pass-bys occur in each direction every 7 to 9 minutes during peak hours and every 10 to 12 minutes during the Saturday midday, with two routes in service, resulting in up to 30 train pass-bys per peak hour. Other potentially perceptible sources of vibration at the project site are heavy-duty trucks or buses that pass adjacent to the site along Howard Street. Equipment typically used for street work or maintenance (unrelated to the proposed project) may also occasionally and temporarily lead to nearby perceptible vibration.

EXISTING SENSITIVE RECEPTORS

Noise-sensitive land uses or receptors are those where noise exposure would result in adverse effects (i.e., injury or annoyance) to individuals and uses where quiet is an essential element of their intended purpose. Residences are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise. Other noise-sensitive land uses are hotels and motels, schools, preschools, libraries, places of worship, hospitals, senior care centers, nursing homes, retirement residences, and other places where low interior noise levels are essential to the use. Users of publicly accessible open space in a densely developed urban area are presumed to be accustomed to noise levels that would be otherwise considered excessive in an undeveloped area.

Land uses within and near the project site are described in detail in Chapter 2, Project Description, pp. 2.5-2.7. There are no schools, places of worship, hospitals, senior care centers, or convalescent homes in the project vicinity. Noise-sensitive residential and hotel uses are across Howard Street and on Steuart Street, north of Howard Street. The nearest noise- and vibration-sensitive land uses are at 88 Howard Street (Rincon Towers), approximately 95 feet north of the site. Apartments with balconies face the project site across Howard Street to the north. Day care centers and child care facilities are noise sensitive, and the nearest day care is at 220 Spear Street (Marin Day School), about 150 feet southwest of the project site, across Spear Street. Publicly accessible open space occurs south of the project site on the site of the Gap Building, and across The Embarcadero is Rincon Park, a waterfront open space, and the Embarcadero Promenade.

Similar to noise-sensitive receptors, vibration-sensitive land uses or receptors include residential, educational uses, places of worship, and hospitals because people in these uses can experience annoyance from groundborne vibration. Vibration-sensitive uses also include fragile buildings and underground facilities, in particular those that are considered historical, because groundborne vibration can result in structural damage. Brick sewers from the 19th century exist in the public rights-of-way of downtown San Francisco streets; these underground utilities are susceptible to settlement and can be damaged by small amounts of settlement. Aside from a wastewater line underneath Steuart Street, no other known historic or potentially fragile structures are adjacent to the project site. Office buildings and other structures adjacent to the project site are all modern or rehabilitated structures, with reinforced concrete and steel building materials that are not especially susceptible to vibration damage. Certain workplaces may also contain vibration-sensitive equipment (e.g., high-resolution lithography equipment, electron microscopes, or micro-electronics production equipment), although none of these vibration-sensitive facilities are near the project site. Typical office-based computing and communication equipment is not considered highly sensitive to vibration.

REGULATORY FRAMEWORK

FEDERAL

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (USEPA) Office of Noise Abatement and Control was originally established to coordinate Federal noise control activities, and the Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, which set programs and guidelines to identify and address the effects of noise on public health and welfare, and the environment. Although the primary responsibility of regulating noise was later transferred to State and local governments in 1982, the USEPA provided guidelines for noise levels that would be considered safe for community exposure without the risk of adverse health or welfare effects. The USEPA 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.[14]

[14] USEPA, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, March 1974, p. 4. A copy of this document is available for public review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2011.1122E.

Federal Transit Administration - Vibration

To address the human response to groundborne vibration, the Federal Transit Administration (FTA) has guidelines for maximum-acceptable vibration criteria for different types of land uses.[15] These guidelines recommend vibration levels (Lv) from 72 VdB to 80 VdB for residential uses and buildings where people normally sleep; and 75 VdB to 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, offices). The higher vibration levels in these ranges apply to infrequent events (less than 30 per day) and the lower levels apply to frequent vibration events (more than 70 per day). According to FTA guidelines, a vibration level of 65 VdB is the threshold of perceptibility for humans and 80 VdB is the level for a significant impact to occur.

STATE

Title 24 of the California Code of Regulations, Noise Insulation Standards

State regulations include standards that are intended to limit the extent of noise transmitted into habitable spaces of new multifamily residential units (including hotels, motels, apartment houses, and dwellings other than detached single-family dwellings). These requirements are collectively known as the California Noise Insulation Standards and are found in Title 24 of the California Code of Regulations. For limiting noise transmitted between adjacent dwelling units, the noise insulation standards specify the extent to which walls, doors, and floor-ceiling assemblies must block or absorb sound. For limiting noise from exterior sources, the noise insulation standards set forth an interior standard of 45 dBA (L_{dn}) in any habitable room and, where such units are proposed in areas subject to noise levels greater than 60 dBA (L_{dn}), a demonstration of how dwelling units have been designed to meet this interior standard is required. If the interior noise level depends upon windows being closed, the design for the structure must also include an HVAC system that will provide for adequate fresh air ventilation as specified by the building code. The City and County of San Francisco has adopted Title 24 of the California Code of Regulations and the code is enforceable by the Department of Building Inspection (DBI).

California Department of Transportation - Vibration

For the protection of buildings from groundborne vibration, the California Department of Transportation (Caltrans) recommends a limit of 0.5 inch per second peak particle velocity (in/sec PPV) for new residential buildings and 0.25 in/sec PPV for older or historically significant buildings.[16] To avoid human annoyance, Caltrans recommends that vibration levels at sensitive

[15] Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment, May 2006, p. 8-3. Available online at www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf. Accessed March 4, 2013.
[16] Caltrans, *Transportation and Construction-Induced Vibration Guidance Manual*, 2004, p. 27.

land uses be limited to 0.04 in/sec PPV for transient vibration and 0.01 in/sec PPV for continuous vibration.

REGIONAL/CITY/LOCAL

San Francisco General Plan

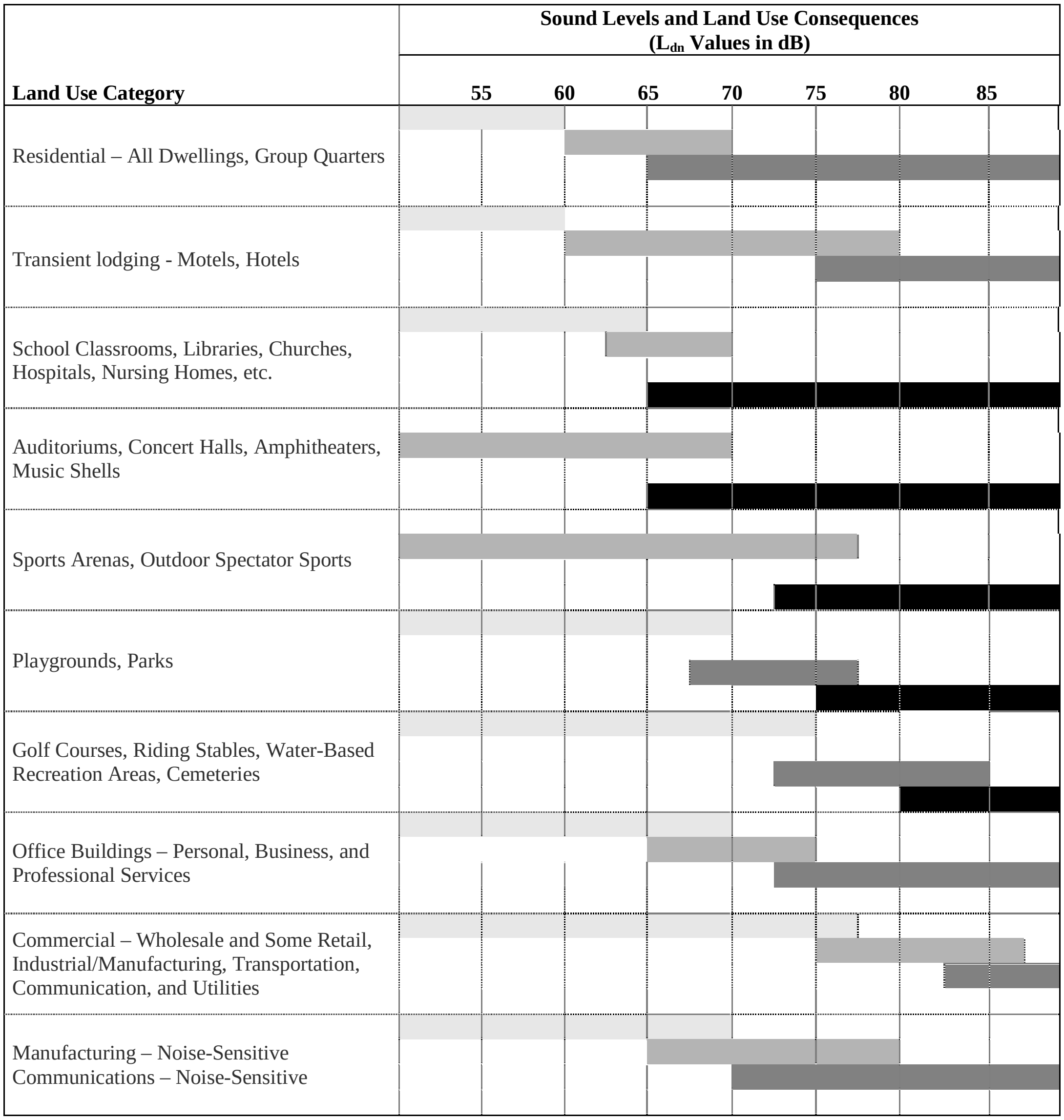
The *San Francisco General Plan* (*General Plan*) Environmental Protection Element focuses on the effect that noise from ground-transportation noise sources has on the community and includes a land use compatibility chart for community noise. This chart, presented as Table 4.F.4: San Francisco General Plan Land Use Compatibility Chart for Community Noise (p. 4.F.14), identifies a range of noise levels considered generally compatible or incompatible with various land uses and indicates when special noise reduction requirements should be considered or analyzed, such as providing sound insulation for affected properties. Residential and hotel uses are considered compatible 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.

The *General Plan* Housing Element (Part 1, pp. C.4-C.5) provides recommendations for identification of adequate sites to meet the City's housing needs. One of the implementing programs specifies that:

> "The Planning Department shall require the preparation of an analysis that includes a site survey to identify potential noise-generating uses within two blocks of the project site prior to completion of the environmental review for all residential projects located in areas exceeding 75 L_{dn}. The analysis shall include at least one 24-hour noise measurement (with maximum noise level readings taken at least every 15 minutes). The analysis shall demonstrate with reasonable certainty that Title 24 standards, where applicable, can be met. If there are particular circumstances about the proposed project site that appear to warrant heightened concern about noise levels in the vicinity, the Department may require the completion of a detailed noise assessment prior to the first project approval action, in order to demonstrate that acceptable interior noise levels consistent with those in the Title 24 standards can be attained."

The results of the survey prepared for Planning Department review of this project, shown in Table 4.F.2, p. 4.F.8, indicate that the proposed project would not be exposed to levels exceeding 75 L_{dn}.

Table 4.F.4: San Francisco General Plan 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 requirements must be made and needed noise insulation features included in the design.

New construction or development should generally not be undertaken.

Source: San Francisco General Plan, adopted on June 27, 1996. Environmental Protection Element, available online at http://www.sf-planning.org/ftp/General_Plan/I6_Environmental_Protection.htm

Transit Center District Plan

The *Transit Center District Plan* (TCDP) includes objectives and policies that would focus growth in close proximity to San Francisco's highest concentration of public transit. Although implementation of the TCDP would facilitate improvements in public health through policies related to the public realm and moving about, none of the TCDP policies specifically address environmental noise, vibration, or quiet.

San Francisco Noise Ordinance

The San Francisco Noise Ordinance (Noise Ordinance) regulates both construction noise and stationary-source noise within the City, including noise from transportation, construction, mechanical equipment, entertainment, and human or animal behavior. Found in Article 29, "Regulation of Noise," of the San Francisco Police Code, the Noise Ordinance addresses noise from construction equipment, nighttime construction work, and noise from stationary mechanical equipment and waste processing activities.[17] The purpose of the Noise Ordinance is stated in Section 2900:

Sec. 2900, Declaration of Policy

> (a) Building on decades of scientific research, the World Health Organization and the U.S. Environmental Protection Agency have determined that persistent exposure to elevated levels of community noise is responsible for public health problems including, but not limited to: compromised speech, persistent annoyance, sleep disturbance, physiological and psychological stress, heart disease, high blood pressure, colitis, ulcers, depression, and feelings of helplessness.
>
> (b) The General Plan for San Francisco identifies noise as a serious environmental pollutant that must be managed and mitigated through the planning and development process. But given our dense urban environment, San Francisco has a significant challenge in protecting public health from the adverse effects of community noise arising from diverse sources such as transportation, construction, mechanical equipment, entertainment, and human and animal behavior.
>
> (c) In order to protect public health, it is hereby declared to be the policy of San Francisco to prohibit unwanted, excessive, and avoidable noise. It shall be the policy of San Francisco to maintain noise levels in areas with existing healthful and acceptable levels of noise and to reduce noise levels, through all practicable means, in those areas of San Francisco where noise levels are above acceptable levels as defined by the World Health Organization's Guidelines on Community Noise.

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[17] City and County of San Francisco, 2012, Article 29 of the San Francisco Police Code, Regulation of Noise. Available online at http://www.sfdph.org/dph/EH/Noise/default.asp. Accessed March 11, 2013.

> (d) It shall be the goal of the noise task force described in this Article to determine if there are additional adverse and avoidable noise sources not covered in this statute that warrant regulation and to report to the Board of Supervisors and recommend amendments to this Article over the next three years. In addition, the noise task force shall develop interdepartmental mechanisms for the efficient disposition and any enforcement required in response to noise complaints.

Sections 2904, 2907, 2908, 2909, and 2910 of the Noise Ordinance are all applicable to the proposed project and are described below.

Section 2904, Waste Disposal Services

This section of the Noise Ordinance limits the noise level produced by waste disposal activities on garbage trucks to 75 dBA when measured at a distance of 50 feet from the equipment. The maximum noise level does not apply to the noise associated with crushing, compacting, dropping, or moving garbage on the truck, but only to the truck's mechanical processing system.

Section 2907, Construction Equipment, and Section 2908, Construction Work at Night

These sections of the Noise Ordinance establish noise levels for construction equipment. Section 2907(a) limits noise levels from construction equipment as specified under the ordinance to 80 dBA L_{eq} at 100 feet (or other equivalent sound levels at other distances) from construction equipment 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 dBA at the nearest property plane unless a special permit is granted before such work by the Director of Public Works or the Director of Building Inspection. If night work is in the general public interest, under Section 2908, the Director of Public Works or the Director of Building Inspection shall prescribe such conditions, working times, types of construction equipment to be used, and permissible noise emissions. The provisions of Section 2907(a) do not apply to impact tools and equipment if the impact tools and equipment have intake and exhaust mufflers as recommended by the manufacturers and are approved by the Director of Public Works or the Director of Building Inspection as accomplishing maximum noise attenuation. The noise exemption also does not apply to pavement breakers and jackhammers, which also must be equipped with acoustically attenuating shields or shrouds as recommended by the manufacturers and 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 Ordinance regulates noise from mechanical equipment and other similar sources. (As stated in the ordinance, "No person shall produce or allow to be produced by any machine, or device, music or entertainment, or any combination of same . . .") This would include all equipment–e.g., electrical equipment (transformers, emergency generators) as well as mechanical equipment–that is installed on commercial/industrial and residential properties. Mechanical equipment operating on commercial or industrial property must not produce a noise level more than 8 dBA above the ambient noise level at the property plane. Equipment operating on residential property must not produce a noise level more than 5 dBA above the ambient noise level at the property boundary.

Section 2909 also states in subsection (d) that no fixed (permanent) noise source (as defined by the Noise Ordinance) may cause the noise level inside any sleeping or living room in a dwelling unit on residential property to exceed 45 dBA between 10 p.m. and 7 a.m. or 55 dBA between 7 a.m. and 10 p.m. when windows are open, except where building ventilation is achieved through mechanical systems that allow windows to remain closed.

Section 2910, Variances

This section of the Noise Ordinance empowers the Directors of Public Health, Public Works, and Building Inspection and the Entertainment Commission, and the Chief of Police to grant variances to noise regulations, over which they have jurisdiction pursuant to Section 2916. All administrative decisions granting or denying variances may be appealed to the San Francisco Board of Appeals.

IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

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 adopted and modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the project would result in a significant impact on noise and vibration. Implementation of the proposed project and project variants would have a significant noise or vibration impact if the project were to:

- F.1 Expose people to or generate noise levels in excess of standards established in the San Francisco General Plan or Noise Ordinance (Article 29 of the Police Code);
- F.2 Expose people to or generate excessive groundborne vibration or groundborne noise levels;
- F.3 Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- F.4 Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project; or
- F.5 Be substantially affected by existing noise levels.

PROJECT FEATURES

The proposed project consists of the construction of a new approximately 31-story, 348-foot-tall, high-rise tower with up to 186 residential units, retail/commercial use at the ground floor and second floor, and below-grade parking. The building would provide outdoor common open space from the ground level to the second floor on the south edge of the site, and building residents would have access to a balcony on the second floor and an outdoor terrace on the 30th floor. Many of the new residential units would also have private balconies. The tower would include six feet of rooftop screening and mechanical enclosures for ventilation equipment and an emergency standby power generator and engine that would be stationary sources of noise. Construction of the new high-rise tower would require a deep foundation with excavation for the two underground garage levels and installation of driven or drilled steel piles supporting a reinforced concrete mat foundation. Up to about 400 driven or drilled piles could be anticipated.

New landscaping and paving improvements would provide publicly accessible open space adjacent to and east of the new high-rise tower. The segment of Steuart Street south of Howard Street would be retained and narrowed while continuing to provide access to the surface parking and subsurface parking for the office buildings that surround the site.

The proposed project would be a high-density, mixed-use infill development in a setting that provides a high level of pedestrian access. Parking and loading access to the below-grade garage would occur along Howard Street, and, as in the existing conditions, the entry would be a source of traffic noise from vehicular ingress and egress.

The proposed project includes two project variants: the Public Parking Variant and the Residential/Hotel Mixed Use Variant. Under the proposed Public Parking Variant, uses would be the same as those under the proposed project, although both project variants would have a greater depth and duration of excavation for the basement garage levels, to as much as 70 feet below the ground surface (11 feet deeper than the proposed project). The proposed Residential/Hotel Mixed Use Variant would provide a mix of approximately 109 residential units and 82 hotel rooms with associated hotel amenity space and 103 additional non-accessory off-street public parking spaces for a total of 268 parking spaces. Hotel rooms would be located on floors 3 through 7 and floors 10 through 12, and residential units would be located on floors 13 through 31. Similar to the proposed project, the Residential/Hotel Mixed Use Variant would include a lobby, restaurant, and amenity space on the first and second floors.

APPROACH TO ANALYSIS

Temporary, construction-related noise impacts associated with the proposed project and project variants are analyzed in this EIR in a manner consistent with analyses of other development projects within San Francisco. Generally, compliance with the Noise Ordinance, which is required by law, and implementation of project-specific mitigation measures would reduce construction noise effects from any development phase of a project to less-than-significant levels.

This analysis identifies potential noise impacts associated with future development that could result from the proposed project. Operational noise issues evaluated in this section include: (1) noise generated by the proposed project created by mobile sources (e.g., motor vehicles) and new fixed, stationary sources (e.g., building mechanical systems, standby power generator, trash removal, ventilation equipment, etc.); and (2) compatibility of proposed project uses with noise insulation standards in Title 24 of the California Code of Regulations, mechanical equipment and other noise limitation requirements in the Noise Ordinance, including Section 2909(d), and performance standards for noise compatibility in the *San Francisco General Plan* Land Use Compatibility Guidelines.

Groundborne vibration impacts associated with the proposed project are described using a general assessment methodology established in the FTA Transit Noise and Vibration Guidelines. A general assessment uses a reference level for vibration from typical construction equipment and measured levels from Muni Metro light rail vehicles with standardized propagation curves to predict vibration levels at a given distance. If the general assessment reveals project-related groundborne vibration levels greater than 72 VdB at residential uses, it would indicate that additional study is needed or that site-specific measures are necessary to reduce or avoid the impact. Human annoyance due to any infrequent event would be expected to occur with vibration levels over 80 VdB.

IMPACT EVALUATION

Construction

Impact NO-1: Construction of the proposed project and project variants would generate noise levels in excess of standards established in the *San Francisco General Plan* or Noise Ordinance and 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 proposed project foundation, excavation, and building construction activities (which encompass the demolition phase) over approximately 30 months, with one week added for the project variants, would temporarily and intermittently increase noise in the project vicinity to levels that could be considered an annoyance by occupants of nearby properties. Construction activities would require the use of heavy trucks, demolition tools, concrete breakers, excavating equipment, debris and material loaders, cranes, and other mobile and stationary construction equipment. Construction activities associated with the proposed project and its variants are anticipated to begin in early 2014 and continue to the summer of 2016.

The greatest construction noise impacts would generally occur over the initial 30 weeks of demolition and basement construction (including the overlapping phases of excavation, pile driving, and constructing the mat and floor slabs and basement walls), with one week added for additional shoring, excavation, and foundation work for both project variants. Above-ground exterior structural and façade elements would be completed over about 70 weeks. Interior improvements and finishing and construction of the open space improvement area, which would involve fewer large pieces of heavy-duty construction equipment, would occur during the last half of construction. Once the façade is in place, noise from interior finishing would generally be contained within the building envelope and would not be expected to generate excessive noise.

Construction noise levels would fluctuate depending on construction phase, equipment type and duration of use, distance between noise source and listener, and presence or absence of barriers. Construction-related material haul trips would raise ambient noise levels along truck routes, depending on the number of haul trips made and types of vehicles used. In addition, certain types of construction equipment generate impulsive noises (such as pile driving), which can be particularly annoying.

Table 4.F.5: Typical Noise Levels from Construction Equipment provides typical noise levels produced by various types of construction equipment that would be used for construction.

Table 4.F.5: Typical Noise Levels from Construction Equipment

Construction Equipment	Noise Level (dBA, L_{eq} at 50 feet)
Truck	88
Air Compressor	81
Concrete Mixer	85
Scraper	89
Jack Hammer	88
Dozer	85
Paver	89
Generator	81
Pile Driver	101
Backhoe	80

Note:
L_{eq} = equivalent noise level

Source: Federal Transit Administration, 2006. Transit Noise and Vibration Impact Assessment, available online at www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf

Average noise levels at the nearest noise-sensitive residential use (discussed on p. 4.F.10) would vary by construction phase, and would depend on the type of equipment used, the duration of the construction phase, and the proximity of construction activity to the noise-sensitive receptors. Noise from construction activities generally attenuates at a rate of 6 to 7.5 dBA per doubling of distance from the noise source.

Pile driving or installation of drilled piles would be necessary to support the foundation over layers of fill and Bay Mud. The duration of the pile driving noise would be about 5 weeks, and the impulsive noise levels could be as high as 95 dBA at 100 feet. Non-impact tools used during construction, including drill rigs that would be preferentially used instead of pile driving, would be capable of generating average noise levels of approximately 80 dBA at 100 feet.

Based on the noise levels shown in Table 4.F.5 and the distance to adjacent sensitive receptors (as identified earlier on p. 4.F.10), construction noise would be substantially greater than existing ambient noise levels presented in Table 4.F.2 and Table 4.F.3, pp. 4.F.8 and 4.F.9, respectively, and would have the potential to result in significant impacts. The loudest construction activities, such as installing piles, demolition, and excavation, would occur over the first 30 weeks of the construction period, with one week added for both project variants, after which lower noise levels would be experienced by the affected sensitive receptors.

Proposed construction would be required to comply with the Noise Ordinance, which prohibits construction activities between 8:00 p.m. and 7:00 a.m., and limits noise from any individual piece of construction equipment, except impact tools, to 80 dBA at 100 feet unless the construction activity would occur during allowable hours.

Construction of the proposed project would temporarily increase ambient noise levels intermittently during the construction period. However, as long as feasible noise control measures are implemented, construction noise impacts at sensitive receptor locations would be reduced to less-than-significant levels and be consistent with all applicable construction noise standards established in the Noise Ordinance.[18]

The TCDP EIR analyzed the impact of construction noise due to development in the Plan area involving pile driving and construction near sensitive receptors in the Plan area.[19] The TCDP EIR concluded that construction noise levels could be reduced to a less-than-significant level with the implementation of specific noise control measures for pile driving and other general construction activity. Implementation of the Mitigation Measure M-NO-1a: Noise Control Measures During Pile Driving and Mitigation Measure M-NO-1b: General Construction Noise Control Measures (Mitigation Measure M-NO-2a and M-NO-2b, respectively, in the TCDP EIR) would be applicable to the proposed project and project variants. Implementation of these measures would reduce this impact to a less-than-significant level by ensuring that construction noise is reduced to the maximum amount feasible. Specifically, implementation of Mitigation Measure M-NO-1a would require the use of feasible noise-reducing techniques for installing piles such as erecting barriers and pre-drilling pile holes where feasible. Implementation of Mitigation Measure M-NO-1b would require the project contractor to use equipment with lower noise emissions and

18 Police Code, Article 29: Regulation of Noise; Section 2907, Construction Equipment.
19 TCDP EIR, p. 360.

sound controls where feasible, locate stationary equipment as far as possible from sensitive receptors, designate a construction noise complaint and enforcement manager, and provide advance notification to surrounding receptors. The combination of these measures would decrease construction noise levels and minimize the proposed project and project variants' significant effects.

Mitigation Measure M-NO-1a: Noise Control Measures During Pile Driving [TCDP EIR M-NO-2a]

A set of site-specific noise attenuation measures shall be completed under the supervision of a qualified acoustical consultant. These attenuation measures shall include as many of the following control strategies, and any other effective strategies, as feasible:

- The project sponsor shall require the construction contractor to erect temporary plywood noise barriers along the boundaries of the project site to shield potential sensitive receptors and reduce noise levels;
- The project sponsor shall require the construction contractor to implement "quiet" pile-driving technology (such as predrilling of piles, sonic pile drivers, and the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions;
- The project sponsor shall require the construction contractor to monitor the effectiveness of noise attenuation measures by taking noise measurement; and
- The project sponsor shall require that the construction contractor limit pile driving activity to result in the least disturbance to neighboring uses.

Mitigation Measure M-NO-1b: General Construction Noise Control Measures [TCDP EIR M-NO-2b]

To ensure that project noise from construction activities is minimized to the maximum extent feasible, the project sponsor shall undertake the following:

- The project sponsor shall require the general contractor to ensure that equipment and trucks used for project construction utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible).
- The project sponsor shall require the general contractor to locate stationary noise sources (such as compressors) as far from adjacent or nearby sensitive receptors as possible, to muffle such noise sources, and to construct barriers around such sources and/or the construction site, which could reduce construction noise by as much as five dBA. To further reduce noise, the contractor shall locate stationary equipment in pit areas or excavated areas, if feasible.
- The project sponsor shall require the general contractor to use impact tools (e.g., jack hammers, pavement breakers, and rock drills) that are hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of

pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used, along with external noise jackets on the tools, which could reduce noise levels by as much as 10 dBA.

- The project sponsor shall include noise control requirements in specifications provided to construction contractors. Such requirements could include, but not be limited to, performing all work in a manner that minimizes noise to the extent feasible; use of equipment with effective mufflers; undertaking the most noisy activities during times of least disturbance to surrounding residents and occupants, as feasible; and selecting haul routes that avoid residential buildings inasmuch as such routes are otherwise feasible.
- Prior to the issuance of the building permit, along with the submission of construction documents, the project sponsor shall submit to the Planning Department and Department of Building Inspection (DBI) a list of measures to respond to and track complaints pertaining to construction noise. These measures shall include (1) a procedure and phone numbers for notifying DBI, the Department of Public Health, and the Police Department (during regular construction hours and off-hours); (2) a sign posted on-site describing noise complaint procedures and a complaint hotline number that shall be answered at all times during construction; (3) designation of an on-site construction complaint and enforcement manager for the project; and (4) notification of neighboring residents and non-residential building managers within 300 feet of the project construction area at least 30 days in advance of extreme noise generating activities (defined as activities generating noise levels of 90 dBA or greater) about the estimated duration of the activity.

With implementation of Mitigation Measure M-NO-1a and Mitigation Measure M-NO-1b, the proposed project and its variants would implement feasible noise control measures and result in a less-than-significant impact with respect to construction noise impacts at sensitive receptor locations.

Impact NO-2: Construction of the proposed project and project variants would result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. *(Less than Significant with Mitigation)*

The proposed project and its variants would require driven or drilled steel piles to support the building foundation over layers of fill and Bay Mud; up to about 400 driven or drilled piles could be anticipated. Impact pile driving would be limited to about 5 weeks of the building construction phase, during which potential groundborne vibration and noise impacts would occur. Other proposed project construction phases, including demolition and excavation and the construction-related truck trips, would also temporarily generate groundborne vibration in the project vicinity. Perceptible vibration from truck trips would increase along the routes to access the site, notably along Howard Street. However, vibration from on-road mobile sources over rough surfaces tends to occur for only brief periods, is intermittent in nature, and would not lead to excessive vibration levels. With the exception of pile driving, the groundborne vibration levels caused by most construction activities would not be likely to cause structural damage but could be considered an annoyance by occupants of adjacent properties.[20] Pile driving would most adversely affect the sensitive residential uses that are 95 feet from the project site boundary (Rincon Towers across Howard Street to the north), as identified on p. 4.F.10.

On-site demolition and excavation activities would result in varying degrees of temporary groundborne vibration with the highest levels expected during demolition and the installation of approximately 400 piles and two basement levels in the first 30 weeks of construction, with one week added for additional shoring, excavation, and foundation work for both project variants. Impulsive sources, including those used for demolition and impact pile driving, would be most likely to produce detectable vibration within nearby buildings. Continuous sources, such as vibratory pile drivers or drill rigs, could create resonant responses leading to groundborne noise in buildings. Heavy construction equipment (e.g., large bulldozers and loaded trucks) frequently generates between 85 and 87 VdB at 25 feet, while pile driving may generate between 104 and 112 VdB at 25 feet from the source.[21]

Vibration energy decreases rapidly as the distance between the activity and vibration-sensitive receptor increases. This means that pile driving would not normally cause a level exceeding 0.2 in/sec PPV or an adverse effect to any structure, except for those uses most susceptible to vibration damage, at distances of 100 feet or more. There are no adopted State or local policies or standards for groundborne vibration or noise. As identified in the “Regulatory Framework” discussion above, the FTA and Caltrans have published guidance relative to vibration impacts. Construction-related vibration over 0.25 in/sec PPV would trigger a potential structural impact for older or historically significant buildings, and over 80 VdB would be a level where a significant vibration impact could be considered to occur due to human annoyance.

The potential for human annoyance would occur over a greater area of impact than the potential for structural damage. Table 4.F.6: Modeled Vibration Levels due to Construction without Mitigation shows the predicted maximum ground vibration levels for impact pile driving and for loaded trucks along access routes. Vibration levels associated with an alternative pile insertion method are also shown. For locations within 300 feet of the source, impact pile driving could cause over 80 VdB, which would be over the threshold for potential annoyance for occupants of buildings in the area. Pile insertion using a sonic pile driver would cause lower vibration levels of about 73 VdB at 300 feet, but vibration levels would still be over the threshold for potential annoyance (80 VdB) for residential uses within 175 feet of pile driving, including the Rincon Towers across Howard Street. Other potentially sensitive uses at distances over 175 feet would not experience levels over the threshold for potential annoyance during sonic pile insertion.

[20] TCDP EIR, p. 362.
[21] FTA, Transit Noise and Vibration Impact Assessment, May 2006, Table 12-2.

Table 4.F.6: Modeled Vibration Levels due to Construction without Mitigation

Modeled Location Source: Pile Driver (Impact)	Distance to Project Site (feet)	PPV (in/sec)	Approximate Vibration Level (Lv, VdB)	Exceeds Threshold? Potential Building Damage	Exceeds Threshold? Potential Human Annoyance
Adjacent to Construction Activity	25	1.518	112	Yes	Yes
Rincon Towers	95	0.205	95	No	Yes
Other Off-site Buildings	300	0.037	80	No	No
Modeled Location Source: Pile Driver (Sonic)					
Adjacent to Construction Activity	25	0.734	105	Yes	Yes
Rincon Towers	95	0.099	88	No	Yes
Other Off-site Buildings	300	0.018	73	No	No
Modeled Location Source: Loaded Trucks					
Adjacent to Construction Activity	25	0.076	86	No	Yes
Rincon Towers	95	0.010	69	No	No
Other Off-site Buildings	300	0.002	54	No	No

Notes:
in/sec = inches per second; Lv = vibration levels; VdB = vibration velocity level is reported in decibels relative to a level of $1x10^{-6}$ inches per second.
Vibration levels over 0.25 in/sec PPV would trigger a potential structural impact for older or historically significant buildings, and over 80 VdB would be a level where a significant vibration impact could be considered to occur due to human annoyance.
Source level of 112 VdB for pile driver (impact) or 105 VdB for pile driver (sonic): Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006. Available online at www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf

Source: Aspen Environmental Group, Turnstone Consulting, 2013

Feasible control measures to reduce the potential impact of human annoyance from excessive groundborne vibration during construction would be applicable to the proposed project and project variants. Implementation of Mitigation Measure M-NO-1a: Noise Control Measures During Pile Driving (Mitigation Measure M-NO-2a in the TCDP EIR), p. 4.F.22, would reduce this impact to a less-than-significant level by requiring use of “quiet” pile insertion techniques that would reduce vibration levels and duration (pre-drilling piles, using sonic pile drivers, and using more than one pile driver to shorten the duration) where feasible.

The potential to cause structural damage occurs at vibration levels much higher than those that could cause human annoyance. This means that structural damage would not be expected to occur if vibration levels are low enough to avoid human response. The office buildings and other buildings adjacent to the project site are modern structures, with reinforced concrete and steel building materials that are not especially susceptible to vibration damage. Impact pile driving associated with the proposed project and project variants could cause over 0.25 in/sec PPV for locations within 80 feet, which would be over the threshold for potential structural damage for older or historically significant buildings or structures. As noted on p. 4.F.11, brick sewers near the site are susceptible to settlement and can be damaged by small amounts of settlement. To reduce the potential impact to a wastewater line underneath Steuart Street, as part of the permitting process, the SFPUC would review and approve the underground excavation plan and require a shoring plan and vibration monitoring. The approved shoring design and monitoring would prevent damage and avoid excessive levels of vibration and settlement. By taking these steps, the potential impact to structures would be less than significant because no other historic or potentially fragile structures occur near the project site. Steps taken to minimize the pile driving noise (Mitigation Measure M-NO-1a: Noise Control Measures During Pile Driving, p. 4.F.22) would further reduce the potential for vibration-related structural damage, and no additional mitigation is required.

Project-related operations, after completion of construction, would involve few sources of groundborne vibration such as heavy-duty trucks for refuse collection. Because routine operation of motor vehicles or trucks within or near the project site would not involve heavy construction equipment, any potential vibration impacts associated with the proposed project and project variants' operational activities would be considered less than significant, and no mitigation is required.

Impact NO-2 would be avoided with implementation of Mitigation Measure M-NO-1a. With the recommended mitigation, the proposed project and its variants would implement feasible vibration control measures and result in a less-than-significant impact with respect human annoyance from excessive groundborne vibration during construction.

Operation

Impact NO-3: Operation of the proposed project and project variants would generate noise levels in excess of standards established in the *San Francisco General Plan* or Noise Ordinance and 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*)

Operation of the proposed project and its variants would introduce additional noise sources to the area, including additional motor vehicle traffic and new mechanical systems, such as ventilation equipment. The proposed project and either project variant would result in an increase of about 200 net-new vehicle trips in the vehicular peak hour (PM), but this would only be a small increase compared to the existing total peak hour traffic of more than 1,000 vehicles that pass during the peak hour on Howard Street or The Embarcadero in the vicinity of the project site. Generally, traffic must double in volume to produce a noticeable increase in noise levels. Based on baseline noise conditions (Table 4.F.2 and Table 4.F.3, p. 4.F.8 and 4.F.9, respectively) and existing traffic volumes on adjacent roadways, the addition of project-related vehicle trips to the circulation system and additional associated traffic noise would not result in a noticeable noise increase in the project surroundings compared to the existing noise levels generated by current traffic volumes on adjacent roadways.

The proposed project and its variants would replace the vehicular ingress and egress on Howard Street with a ramp to below-grade parking and loading areas (see "Project Features" on p. 4.F.18). Traffic noise generated by vehicles using the access would be comparable to that which occurs for the existing 75 Howard Garage, with the addition of occasional delivery and service vehicles (e.g., trash collection) on the ramp. Project-related vehicular noise would be brief and would not contribute to a substantial increase in 24-hour ambient noise levels for neighboring noise-sensitive residential uses. Therefore, increased vehicle trips associated with the proposed project would represent a less-than-significant increase in ambient noise levels.

The proposed project and its variants would include new mechanical equipment for building utilities, including ventilation equipment (HVAC equipment) and other building mechanical systems that may involve noise sources at grade or on upper floors. The standby power generator and other mechanical systems would be located on the southeast portion of the roof (see Figure 2.11: Proposed Roof Plan, p. 2.19). The details of the equipment are still in development, and final design would ultimately be presented in plans to be prepared in the future specifying the specific locations and performance requirements. Where possible, fixed sources of noise would generally be enclosed or below-grade, which provides noise insulation, but since cooling or dehumidification equipment and heat pumps would need to be exposed to the outside, these noise sources may be difficult to shield. As stated in the Environmental Setting, the City's Noise Ordinance limits noise from residential properties to 5 dBA over the ambient noise level. Although specific information regarding the proposed stationary noise sources is currently not available, building mechanical systems could generate noise levels in excess of applicable *San Francisco General Plan* noise-land use compatibility thresholds. To be conservative, this EIR considers the potential for equipment to be located on upper floors that could cause increased noise levels for neighboring noise-sensitive uses, especially for residential uses on the upper floors of the Rincon Towers across Howard Street to the north.

As discussed in the TCDP EIR, the existing mix of uses in the TCDP area includes residential uses and necessitates the maximum feasible reduction of building equipment noise, such as through the enclosure of building mechanical equipment.[22] Implementation of Mitigation Measure M-NO-3: Interior Mechanical Equipment (Mitigation Measure M-NO-1e in the TCDP EIR), p. 4.F.28, would be applicable to the proposed project and project variants. Implementation of Mitigation Measure M-NO-3 would require that the project sponsor fully enclose and noise-proof building mechanical equipment by using acoustical insulation and/or incorporating the equipment into the building interior. Incorporating this measure into the proposed project would ensure that project-related stationary noise sources would be controlled to the maximum extent feasible, consistent with the *San Francisco General Plan*, resulting in a less-than-significant increase in ambient noise levels.

[22] TCDP EIR, p. 357.

Noise from truck deliveries or service vehicles at the loading docks for the proposed project would occur underground in the proposed basement. Regularly scheduled garbage collection service or other deliveries or pick-ups could occur in the nighttime or early morning hours, and residences nearest to and overlooking the parking and loading entryways would experience this noise the most. It is not generally practical to limit the hours of garbage collection, as this task must be completed on an area-wide basis in the morning before traffic and parked vehicles become hindrances. The loading areas for this development would be below grade, isolated from nearby noise-sensitive residential uses, and subject to additional review during the Design Development phase. The location of the loading areas would enclose the activity and shield receptors from the noise of deliveries and pick-ups to avoid substantial noise from truck deliveries or garbage collection.

With the incorporation of Mitigation Measure M-NO-3: Interior Mechanical Equipment (TCDP EIR M-NO-1e), project-related operational noise would not significantly increase the ambient noise levels of the area and would be consistent with the *San Francisco General Plan* Land Use Compatibility Guidelines for Community Noise.

Mitigation Measure M-NO-3: Interior Mechanical Equipment [from TCDP EIR M-NO-1e, p. C&R-128]

The project sponsor shall require that effects of mechanical equipment noise on adjacent and nearby noise-sensitive uses be evaluated by a qualified acoustical consultant and that control of mechanical noise, as specified by the acoustical consultant, be incorporated into the final project design of new buildings to achieve the maximum feasible reduction of building equipment noise, consistent with *Building Code* and Noise Ordinance requirements and CEQA thresholds, such as through the use of fully noise-insulated enclosures around rooftop equipment and/or incorporation of mechanical equipment into intermediate building floor(s).

With implementation of Mitigation Measure M-NO-3, the proposed project and its variants would control project-related stationary noise sources to the maximum extent feasible, resulting in a less-than-significant operational noise impact.

Impact NO-4: The proposed project's new residential uses and open spaces and project variants would not be substantially affected by existing noise levels. *(Less than Significant)*

The proposed project and project variants would introduce new noise-sensitive residential uses and a hotel mixed use under the Residential/Hotel Mixed Use Variant to a densely developed urban neighborhood with elevated ambient noise levels. The Environmental Setting section, pp. 4.F.1-4.F.11, explains that sleep disturbance can occur when continuous interior noise levels exceed 30 dBA or when intermittent interior noise levels exceed 45 dBA. The *General Plan* Land Use Compatibility Guidelines for Community Noise (see Table 4.F.4 on p. 4.F.14) indicate that any new residential construction or development in areas with noise levels above 60 dBA

(L_{dn}) should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features are included in the design. In areas where exterior noise levels exceed 65 dBA (L_{dn}), new residential construction or development is generally discouraged, but if it does proceed, a detailed analysis of noise reduction requirements must be undertaken and needed noise insulation features included in the design of such development. Since ambient noise measurements indicate that exterior noise levels on the boundaries of the project site are at least 67 dBA (L_{dn}), the proposed new residential uses could experience potentially significant impacts due to land use-noise incompatibility.

Because the proposed project and project variants' new residential development would be attached units (i.e., multi-family residential), the new residential development would be subject to noise insulation standards in Title 24 of the California Code of Regulations. The new hotel use under the Residential/Hotel Mixed Use Variant would also be subject to Title 24. This State standard requires meeting an interior noise level of 45 dBA (L_{dn}) in any habitable room. Where such units are proposed in areas subject to outdoor noise levels greater than 60 dBA (L_{dn}), the standard requires designing the dwelling units to meet this 45 dBA L_{dn} interior noise level. Achieving compliance with the Title 24 standards would ensure sufficient noise insulation for the proposed project and variants' new residential and hotel uses and would result in an interior noise level consistent with the *General Plan* Land Use Compatibility Guidelines for Community Noise (see Table 4.F.4, p. 4.F.14) for noise-sensitive development within the project site. The DBI enforces the Title 24 requirements as part of the building permit and inspection process.

Existing noise levels within the project site were measured at locations on the roof of the 75 Howard Garage and at street level, and they range from approximately 67 dBA to 69 dBA (L_{dn}) (refer to Table 4.F.2 and discussion on pp. 4.F.6-4.6.8). Applicable *General Plan* guidelines indicate that a detailed analysis of noise reduction requirements should be completed for the proposed project future residential uses. Due to the elevated levels of existing ambient noise, and potential noise increases with associated cumulative conditions (discussed below under Impact C-NO-2, p. 4.F.34-4.F.35), the proposed project and variants' residential and hotel uses would need to achieve about 25 dBA in exterior-to-interior noise reduction through building and window insulation to comply with applicable performance standards and achieve interior noise levels below 45 dBA. New residential uses would experience a potentially significant impact due to existing outdoor noise levels; however, compliance with Title 24 standards for interior noise would ensure sufficient exterior-to-interior noise reduction.

The TCDP EIR analyzed the impact of introducing new sensitive uses that would be affected by existing noise levels and specified that a noise study must be completed for each new residential project in the TCDP area to ensure that interior noise levels would be suitable for residential use

(Mitigation Measure M-NO-1a in the TCDP EIR).[23] The results of the project-specific noise survey[24] indicate that achieving 25 dBA in exterior-to-interior noise reduction would ensure that interior noise levels for the new residential and hotel uses do not occur in excess of Title 24 of the California Code of Regulations (*Building Code*), San Francisco Noise Ordinance (per Police Code Section 2909(d)), or *General Plan* Land Use Compatibility Guidelines. Achieving this level of exterior-to-interior noise reduction is feasible with currently available materials normally used for high-rise residential buildings if windows and doors may remain closed. For example, a façade consisting of an exterior wall and window/wall assemblies having a minimum laboratory-tested sound transmission class (STC) rating of 35 would provide sufficient insulation. Examples of STC 35 window assemblies include a single layer of ¼-inch laminated glass or a one-inch-thick insulated glazing unit consisting of two layers of ¼-inch glass separated by a ½-inch airspace. Other glazing combinations could be used to achieve the same or better acoustical performance. Requiring that it be possible for exterior windows and doors to remain closed for the required interior sound insulation means that the project would include air conditioning or mechanical ventilation. The *General Plan* Housing Element program specification would be satisfied because the Title 24 standards would be met.

The TCDP EIR also identified the potential impacts of excessive exterior noise to new residential open spaces and the impact of excessive noise from rooftop mechanical equipment near new residential uses.[25] Because the proposed residential use would be likely to achieve 25 dBA in exterior-to-interior noise reduction, the proposed project and project variants with exterior windows and doors remaining closed would provide the necessary noise insulation to protect interiors from the noise of rooftop mechanical equipment on the upper floors of nearby buildings.

Users of residential and public open spaces included as part of the proposed project and project variants would be exposed to traffic noise and other environmental noise of the dense urban setting. The publicly accessible Open Space Improvement Site, including Assessor's Block 3742/Lot 12, would not be within the TCDP area. Because project residential open spaces (private terraces and balconies) would be located in a densely developed urban area, users of these spaces are presumed to be accustomed to noise levels that, under other circumstances, would be considered excessive.[26] Implementing a site design that uses the building itself to shield on-site open space from the greatest noise sources, or constructing noise barriers between noise sources and residential open spaces would not be feasible. No additional noise minimization techniques would be necessary for the open spaces of the project to be consistent

[23] TCDP EIR, p. 356.
[24] Brown-Buntin Associates, Environmental Noise and Vibration Assessment, 75 Howard Street Project (BBA Report No. 12-027), January 10, 2013. This document is available for public review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2011.1122E.
[25] TCDP EIR, pp. 356-357.
[26] TCDP EIR, p. 357.

with the Land Use Compatibility Guidelines for Community Noise. The proposed project's residential use and open spaces, as well as the project variant's hotel use, would experience less-than-significant effects from existing noise levels. No mitigation is necessary.

Impact NO-5: The proposed project and project variants would not expose people to excessive groundborne vibration or groundborne noise levels and the proposed project's new residential or hotel uses would not be substantially affected by existing vibration levels. ***(Less than Significant)***

The proposed project and project variants would introduce a new residential use and hotel use near the Muni Metro light rail line between the traffic lanes of The Embarcadero, approximately 175 feet east of the project site. Train vehicles operating along the ramp and portal east of the site are a source of groundborne vibration and potentially groundborne noise that could disturb or annoy new residents who are vibration sensitive. Locations along the light rail alignment experience up to 30 train pass-bys per peak hour, and the groundborne vibration from each train pass-by could be intrusive for the proposed residential use.

Generalized groundborne vibration levels published by the FTA indicate that light rail vehicles cause approximately 75 VdB at 40 feet and less than 72 VdB for locations beyond 60 feet from the track centerline.[27] Vibration levels measured for an unrelated project along the 19th Avenue Muni Metro light rail alignment were substantially higher than assumed for typical operations by the FTA, up to 93 VdB at 40 feet,[28] possibly because no vibration isolation is designed into the rail bed at that location. At these measured source levels and at the setback of the proposed project's residential building, the distance would allow attenuation of the impact to approximately 50 VdB. Levels of 50 VdB or lower per rail transit pass-by would be below the lower-limit of the FTA guidelines (72 VdB) and below the level of perceptibility (65 VdB) for the proposed residential use. Because the proposed residential building would be sufficiently distant from the track alignment, the proposed project residential use and proposed Residential/Hotel Mixed Use Variant hotel use would experience a less-than-significant impact from groundborne vibration and groundborne noise. No mitigation is necessary.

CUMULATIVE IMPACT EVALUATION

Reasonably foreseeable future development in the immediate vicinity of the project site consists primarily of development forecast to occur pursuant to the TCDP. Reasonably foreseeable cumulative development in the vicinity of the project site would be subject to the Noise Ordinance enforced by DBI and the Police Department, as well as Planning Department development standards including those found in the TCDP. Some of the new development expected to occur in the vicinity of the project site would be likely to occur at the same time that

[27] FTA 2006, Figure 10-1.
[28] BBA 2012, Table pp. 6-7.

the proposed project construction activities are planned, specifically the addition of three floors to the existing building at 120 Howard Street, one block from the project site, and the near-term development projects in the TCDP area such as the Transit Center and the Transit Tower.

Future year 2035 cumulative traffic noise conditions are also considered here. Based on projections developed for the TCDP EIR, the future traffic conditions take into account both the future development expected in the Plan area, as well as the expected growth in housing and employment for the remainder of San Francisco and the nine-county Bay Area.

Impact C-NO-1: Construction of the proposed project and project variants, in combination with other past, present, and reasonably foreseeable future projects in the project vicinity, would result in a cumulatively considerable contribution to significant temporary or periodic cumulative increases in ambient noise or vibration levels in the project vicinity above levels existing without the proposed project. ***(Less than Significant with Mitigation)***

Project construction would require approximately 30 months during construction of cumulative development projects. The highest noise and vibration levels generated by project construction are anticipated to occur during the initial 30 weeks of demolition and basement construction with one week added to the overall schedule for the project variants (including the overlapping phases of excavation, pile driving, and constructing the mat and floor slabs and basement walls). Lower project-related noise and vibration levels would occur after installation of exterior structural and façade elements.

Cumulative construction noise impacts would occur from other projects in the vicinity, including the approved expansion at 120 Howard Street and development that is expected as part of implementation of the TCDP, insofar as construction activities occurred at the same time as those of the proposed project or project variants. Other near-term TCDP area development projects, including the Transit Center and potential Caltrain extension, the planned Transit Tower high-rise building, and the high-rise tower at 177-187 Fremont Street and high-rise office building at 350 Mission Street (both under review), would be close enough to the project site to cumulatively affect noise levels at some of the same noise-sensitive uses that would be affected by construction noise from the proposed project, should such activities occur within the same time period. Construction of the Golden State Warriors arena, proposed approximately ¼ mile south of the project site on Piers 30/32, however, would be sufficiently distant from the project site and would occur south of traffic noise on the Bay Bridge, which would mask the cumulative project noise.

Construction noise is a localized impact that reduces as distance from the source increases and rapidly attenuates when line-of-sight is blocked by buildings or other intervening features. To the extent that simultaneous construction is undertaken in close enough proximity to the proposed project site and at the same time, such that cumulative effects related to construction noise would be anticipated, noise effects would be greater or last longer, or both.

Noise from project-related construction truck trips could combine with noise from trucks associated with the other nearby development projects. However, due to the urban nature and existing ambient daytime noise levels from traffic on roadways that are adjacent to and near the development sites, any cumulative increase in ambient noise levels from mobile construction-related traffic would be brief and intermittent in nature.

All construction activities at the project site and construction for off-site projects would generally be required to comply with the Noise Ordinance. As explained above, the Noise Ordinance prohibits construction activities between 8:00 p.m. and 7:00 a.m., and limits noise from any individual piece of construction equipment, except impact tools, to 80 dBA (Ldn) at 100 feet unless the construction activity would occur during allowable hours. This would minimize the potential of cumulative construction noise overlapping during construction on nearby development sites. Project-generated construction activities similarly would be required to meet all applicable construction noise standards established in the Noise Ordinance (Article 29 of the Police Code) and would be subject to enforcement of the Noise Ordinance by DBI and the Police Department. These requirements and implementation of Mitigation Measure M-NO-1a: Noise Control Measures During Pile Driving (p. 4.F.22) and Mitigation Measure M-NO-1b: General Construction Noise Control Measures (p. 4.F.22-4.F.23), identified in the discussion of project Impact NO-1, would minimize the incremental contribution of the project to short-term exposure of sensitive receptors to increased construction noise.

The potential impact of cumulative construction noise in the *Transit Center District Plan* area was analyzed in the TCDP EIR.[29] For nearby projects undertaken at the same time as the proposed project, the Planning Department and the Departments of Building Inspection, Public Works, and Public Health, along with the Transbay Joint Powers Authority (sponsor of the Transit Center) and the Peninsula Joint Powers Board (sponsor of the Caltrain extension), would be expected to work to ensure that all projects comply with the San Francisco Noise Ordinance and that project construction schedules are coordinated so as to minimize, to the extent feasible, construction noise that could be disruptive. Construction activities for the Transit Center and the potential Caltrain extension would occur at least 500 feet away from the project site. The majority of construction ongoing and proposed in the TCDP area would not occur in close enough proximity for the construction noise and vibration impacts to be significant for sensitive receptors near the project site. Implementation of Mitigation Measure M-C-NO-1a: Cumulative Construction Noise Control Measures (TCDP EIR Mitigation Measure M-C-NO), shown below, would also be applicable to the proposed project and project variants. This mitigation measure

[29] TCDP EIR, pp. 367-369.

would ensure that construction of the proposed project and project variants would not result in a cumulatively considerable contribution to temporary or periodic increases in ambient noise or vibration.

Mitigation Measure M-C-NO-1a: Cumulative Construction Noise Control Measures. [TCDP EIR M-C-NO]

The project sponsor shall cooperate with and participate in any City-sponsored construction noise control program for the Transit Center District Plan area or other City-sponsored areawide program developed to reduce potential effects of construction noise in the project vicinity. Elements of such a program could include a community liaison program to inform residents and building occupants of upcoming construction activities, staggering of construction schedules so that particularly noisy phases of work do not overlap at nearby project sites, and, potentially, noise and/or vibration monitoring during construction activities that are anticipated to be particularly disruptive

With implementation of Mitigation Measures M-NO-1a, M-NO-1b, and M-C-NO-1a, the proposed project and its variants would implement feasible cumulative construction noise control measures, and cumulative construction noise impacts would be reduced to a less-than-significant level.

Impact C-NO-2: Operation of the proposed project and project variants in combination with other past, present, and reasonably foreseeable future projects in the project vicinity would not result in a cumulatively considerable contribution to significant cumulative permanent increases in ambient noise levels in the project vicinity above levels existing without the project. *(Less than Significant)*

Each development project in the vicinity of the project site would generate operational noise and could contribute to an overall increase in ambient noise conditions of the area. The noise environment of the area would be influenced by traffic increases and stationary or fixed sources of noise included in cumulative development, such as new heating and ventilation equipment, emergency power generators, and other mechanical equipment.

Implementation of the proposed project and cumulative development projects would increase traffic noise levels in an environment that already experiences elevated ambient noise levels. Traffic noise on Howard Street in the project vicinity could be 1.0 to 1.1 dBA higher than existing traffic noise levels, according to future 2030 cumulative traffic increases presented in the TCDP EIR.[30] However, according to the future year 2035 cumulative conditions, including the recommended TCDP Public Realm Plan, 2035 traffic volumes on Howard Street at the project site would be comparable to existing conditions.[31] Traffic volumes on The Embarcadero would increase and cause about 1.2 dBA more noise under 2035 cumulative conditions. The increases

[30] TCDP EIR, Table 28, p. 354.
[31] 75 Howard Street Project, Transportation Study, May 2013, Figure 12 and Figure 22.

in traffic would not be expected to produce a noticeable increase in noise levels.[32] Therefore, the cumulative impact of traffic-generated noise levels in the project vicinity would not cause sensitive receptors to be substantially affected by noise levels, and this impact would not be significant. The contribution of noise from project-generated roadway traffic to cumulative traffic noise levels in the project vicinity would not be cumulatively considerable in this context.

Noise from stationary mechanical equipment associated with cumulative TCDP area development could cause a substantial increase in the noise environment for noise sensitive receptors near each project. However, no cumulative development projects would be located near enough to the project site to potentially affect the noise-sensitive receptors that could also be potentially affected by the proposed project. Noise from mechanical equipment at the cumulative development sites would be subject to the Noise Ordinance, and as such, these projects would not have the potential to result in a cumulatively considerable contribution to significant cumulative long-term noise impacts. Project-related mechanical noise sources could result in a potential noise impact that could be mitigated to a less-than-significant level with implementation of Mitigation Measure M-NO-3, on p. 4.F.28. This measure would require the project sponsor to fully enclose and noise-proof building mechanical equipment noise by using acoustical insulation and/or incorporating the equipment into the building interior.

Project-related operational noise would be less than significant with implementation of Mitigation Measure M-NO-3 and compliance with applicable performance standards. As a result, the project and its variants would not result in a cumulatively considerable contribution to significant cumulative exposure of receptors to ambient noise levels. This impact would be less than significant, and no additional mitigation is required.

[32] Overall growth in p.m. peak hour traffic would result in an increase in traffic volumes to about 150 percent of existing, which is less than double the existing traffic volumes. A doubling of daily traffic volumes (200 percent) generally causes an increase in ambient noise levels of about 3 dBA, and would be noticeable to most people in an urban environment. Although the traffic data are for the peak hour only, it is reasonable to assume that daily traffic volumes would not increase by 200 percent, and future cumulative traffic-generated noise would not be noticeable to most people in the vicinity.

G. AIR QUALITY

INTRODUCTION

Section G, Air Quality, evaluates the potential air quality and health risks and hazards impacts that would result from short-term construction and long-term operation of the proposed project and project variants. It identifies both project-level and cumulative environmental impacts, as well as feasible mitigation measures that could reduce or avoid the identified impacts. This section summarizes and incorporates the results of the *75 Howard Air Quality Technical Memo*.[1]

As described in Appendix A, the Initial Study, pp. 61-62, concluded that project impacts related to the Air Quality subtopic of objectionable odors affecting a substantial number of people would be less than significant. Therefore, this subtopic is not addressed in the EIR.

ENVIRONMENTAL SETTING

REGIONAL AIR QUALITY

The project site and vicinity is within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). Winds from the northwest, west-northwest, west, and west-southwest dominate at the project site such that area-wide emissions tend to be carried eastward over San Francisco Bay (see Figure 2.1: Project Location, in Chapter 2, Project Description, p. 2.2). The BAAQMD is a 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. As part of the region's efforts to achieve and maintain Federal and State ambient air quality standards, the BAAQMD maintains the regional emission inventory of air pollution sources, including stationary, mobile, and area-wide sources. The 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 regional prevailing winds, topography, and weather, including sunlight and high temperatures, also play a role in regional air quality problems. Warmer temperatures create the conditions that can increase ozone formation. In addition, higher temperatures would likely result in increased electricity use to power air conditioners and refrigerators, which can cause increased operation of the region's fossil-fuel-fired power plants to meet the demand.

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1 Aspen Environmental Group, *75 Howard Air Quality Technical Memo and Background Air Quality Emission Calculations with Activity Details and Stationary Sources*, March 8, 2013 (hereinafter referred to as "*Air Quality Technical Report*"). This document is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2011.1122E.

Climate, Topography, and Meteorology

The San Francisco Bay Area has a Mediterranean climate characterized by mild, dry summers and mild, moderately wet winters (about 90 percent of the annual total rainfall occurs during the November to April period), moderate daytime onshore breezes, and moderate humidity. The climate is dominated by a strong, semi-permanent, subtropical high-pressure cell over the northeastern Pacific Ocean. Weather is moderated by the adjacent oceanic heat reservoir that leads to fog. In summer, the northwest winds to the west of the coastline are drawn into the interior valleys through the Golden Gate and over the lower topography of the San Francisco Peninsula. This channels wind so that it sweeps eastward and widens downstream across the region. In winter, periods of storminess tend to alternate with periods of stagnation and light winds.

CRITERIA AIR POLLUTANTS

As required by the 1970 Federal Clean Air Act, the United States Environmental Protection Agency (USEPA) initially identified six criteria air pollutants that are pervasive in urban environments and for which State and Federal health-based ambient air quality standards have been established. USEPA calls these pollutants “criteria air pollutants” because the agency has regulated them by developing specific public-health-based and welfare-based criteria as the basis for setting permissible emission levels. Ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead are the six criteria air pollutants originally identified by USEPA. Since that time, subsets of particulate matter have been identified for which permissible levels have been established. These include particulate matter of 10 microns in diameter or less (PM_{10}) and particulate matter of 2.5 microns in diameter or less ($PM_{2.5}$).

The BAAQMD’s air quality monitoring network provides information on ambient concentrations of criteria air pollutants at various locations in the San Francisco Bay Area. The BAAQMD monitoring station at 16th and Arkansas streets in San Francisco’s lower Potrero Hill area is the closest monitoring station to the project site. Table 4.G.1: Summary of San Francisco Air Quality Monitoring Data (2008–2012) is a five-year summary of the highest annual criteria air pollutant concentrations collected at that monitoring station.[2] Table 4.G.1 compares measured pollutant concentrations with the most stringent applicable ambient air quality standards (State or Federal).

[2] Data from this single location does not describe pollutant levels throughout San Francisco, as these levels may vary depending on distance from key emissions sources and local meteorology. However, the BAAQMD monitoring network does provide a reliable picture of pollutant levels over time.

Table 4.G.1: Summary of San Francisco Air Quality Monitoring Data (2008–2012)

Pollutant	Most Stringent Applicable Standard	Number of Days Standards Were Exceeded and Maximum Concentrations Measured 2008	2009	2010	2011	2012
Ozone						
- Days 1-hour Std. Exceeded	>90 ppb [a]	0	0	0	0	0
- Max. 1-hour Conc. (ppb)		82	72	79	70	69
- Days 8-hour Std. Exceeded	>70 ppb [a]	0	0	0	0	0
- Max. 8-hour Conc. (ppb)		66	56	51	54	48
Carbon Monoxide (CO)						
- Days 1-hour Std. Exceeded	>20 ppm [a]	0	0	0	0	0
- Max. 1-hour Conc. (ppm)		5.7	4.3	1.8	1.8	2.0
- Days 8-hour Std. Exceeded	>9 ppm [a]	0	0	0	0	0
- Max. 8-hour Conc. (ppm)		2.3	2.9	1.4	1.2	1.2
Suspended Particulates (PM_{10})						
- Days 24-hour Std. Exceeded[c]	>50 μg/m^3 [a]	0	0	0	0	1
- Max. 24-hour Conc. (μg/m^3)		41	36	40	46	51
- Annual Average (μg/m^3)	>20 μg/m^3 [a]	**22.0**	18.7	19.9	19.5	17.4
Suspended Particulates ($PM_{2.5}$)						
- Days 24-hour Std. Exceeded	>35 μg/m^3	0	1	3	2	1
- Max. 24-hour Conc. (μg/m^3)		29.4	**35.6**	**45.3**	**47.5**	**35.7**
- Annual Average (μg/m^3)	>12 μg/m^3 [a, d]	9.8	9.7	10.5	9.5	8.2
Nitrogen Dioxide (NO_2)						
- Days 1-hour Std. Exceeded	>100 ppb [b, e]	0	0	0	0	1
- Max. 1-hour Conc. (ppb)		62	59	93	93	**124**
- Annual Average (ppb)	>30 ppb [a]	16	15	13	14	13
Sulfur Dioxide (SO_2)						
- Days 1-hour Std. Exceeded	>75 ppb [b, e]	N/A	N/A	N/A	N/A	N/A
- Max. 1-hour Conc. (ppb)		N/A	N/A	N/A	N/A	N/A
- Days 24-hour Std. Exceeded	>40 ppb [a]	0	N/A	N/A	N/A	N/A
- Max. 24-hour Conc. (ppb)		5	N/A	N/A	N/A	N/A

Notes:
Bold values are in excess of applicable standard. "N/A" indicates that data is not available. An exceedance is not necessarily a violation of the standard and only persistent exceedances lead to designation of an area as nonattainment.
conc. = concentration; ppm = parts per million; ppb=parts per billion; μg/m^3 = micrograms per cubic meter; > means greater than
[a] State standard, not to be exceeded.
[b] Federal standard, not to be exceeded.
[c] Based on a sampling schedule of one out of every six days, for a total of approximately 60 samples per year.
[d] In March 2013, the U.S. EPA implemented a new annual $PM_{2.5}$ standard of 12.0 μg/m^3.
[e] New 1-hour Federal standards introduced in 2010.

Source: BAAQMD, Bay Area Air Pollution Summary, 2008-2012. Website accessed on May 9, 2013 at http://www.baaqmd.gov/Divisions/Communications-and-Outreach/Air-Quality-in-the-Bay-Area/Air-Quality-Summaries.aspx.

Ozone

Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxides (NOx). The main sources of ROG and NOx, often referred to as ozone precursors, are combustion processes (including motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the Bay Area, automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.[3] Table 4.G.1 shows that, according to published data, the most stringent applicable standards (the State 1-hour standard of 90 parts per billion [ppb] and the State 8-hour standard of 70 ppb) were not exceeded in San Francisco between 2008 and 2012.

Carbon Monoxide

CO is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles; the highest emissions occur during low travel speeds, stop-and-go driving, cold starts, and hard acceleration. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue; impair central nervous system function; and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal. As shown in Table 4.G.1, the more stringent State CO standards were not exceeded between 2008 and 2012. Measurements of CO indicate hourly maximums ranging between 15 to 25 percent of the State standard, and maximum 8-hour CO levels that are approximately 30 percent of the allowable 8-hour standard.

Particulate Matter (PM_{10} and $PM_{2.5}$)

Particulate matter is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from manmade and natural sources. PM_{10} is often termed “coarse” particulate matter and is made of particulates that are 10 microns in diameter or smaller. $PM_{2.5}$, termed “fine” particulate matter, is composed of particles that are 2.5 microns or less in diameter. In the Bay Area, motor vehicles generate about one-half of the air basin’s particulates, through tailpipe emissions as well as brake pad and tire wear. Wood burning in fireplaces and stoves, industrial

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[3] Bay Area Air Quality Management District (BAAQMD), *California Environmental Quality Act Air Quality Guidelines*, adopted June 2010 and updated May 2011 and May 2012 (hereinafter “BAAQMD, *CEQA Air Quality Guidelines*”), p. C-15. Available online at http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Updated-CEQA-Guidelines.aspx. Accessed February 13, 2013.

facilities, and ground-disturbing activities such as construction are other sources of such fine particulates. These fine particulates are small enough to be inhaled into the deepest parts of the human lung and can cause adverse health effects.

According to the California Air Resources Board (ARB), studies in the United States and elsewhere "have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks," and studies of children's health in California have demonstrated that particle pollution "may significantly reduce lung function growth in children." The ARB also reports that statewide attainment of particulate matter standards could prevent thousands of premature deaths, lower hospital admissions for cardiovascular and respiratory disease and asthma-related emergency room visits, and avoid hundreds of thousands of episodes of respiratory illness in California.[4] Among the regulated criteria air pollutants, particulates are a serious ongoing health hazard contributing to the death of approximately 200 to 500 people per year in the Bay Area. High levels of particulates can exacerbate chronic respiratory ailments, such as bronchitis and asthma, and have been associated with increased emergency room visits and hospital admissions.[5,6]

Table 4.G.1 shows that exceedances of the State annual average PM_{10} standard (20 $\mu g/m^3$) have not occurred in San Francisco since 2009. It is estimated that the State 24-hour PM_{10} standard has not been exceeded except for 6 days in 2012.[7] The BAAQMD began monitoring $PM_{2.5}$ concentrations in San Francisco in 2002. Table 4.G.1 shows that the State standard and the new 2013 Federal standard for annual average $PM_{2.5}$ (12 $\mu g/m^3$) was not exceeded in San Francisco between 2008 and 2012. However, on the 24-hour averaging basis, concentrations of $PM_{2.5}$ have exceeded the Federal 24-hour $PM_{2.5}$ standard (35 $\mu g/m^3$), and in San Francisco this level was exceeded once in 2012, twice in 2011, and three times in 2010. $PM_{2.5}$ is of particular concern because epidemiologic studies have demonstrated that people who live near freeways and high-traffic roadways have poorer health outcomes, including increased asthma symptoms and respiratory infections and decreased pulmonary function and lung development in children.[8]

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4 California Air Resources Board (ARB), "Review of the Ambient Air Quality Standards for Particulate Matter and Sulfates" Staff Report, May 2002, pp. 9-18 to 9-24. Available online at http://www.arb.ca.gov/research/aaqs/std-rs/pm-final/pm-final.htm. Accessed February 22, 2013.

5 ARB, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005 (hereinafter "ARB, *Air Quality and Land Use Handbook")* p. 12. Available online at http://www.arb.ca.gov/ch/landuse.htm. Accessed February 22, 2013.

6 BAAQMD, *CEQA Air Quality Guidelines*, May 2011, pp. 5-2, D-38.

7 PM_{10} is sampled every sixth day; therefore, for each day sampled at a level over the standard, up to six actual days are estimated to be over the standard.

8 San Francisco Department of Public Health (SFDPH), *Assessment and Mitigation of Air Pollutant Health Effect from Intra-urban Roadways: Guidance for Land Use Planning and Environmental Review*, May 2008, p. 7. Available online at http://www.sfdph.org/dph/files/EHSdocs/AirQuality/ MitigateRoadAQLUConlicts.pdf. Accessed February 14, 2013.

Based on regionally persistent exceedances of the Federal 24-hour $PM_{2.5}$ standard, in 2009, the USEPA designated the SFBAAB as "nonattainment" for the $PM_{2.5}$ Federal standard.

Nitrogen Dioxide

NO_2 is a reddish brown gas that is a byproduct of combustion processes. Mobile sources (motor vehicles and other transportation sources) and industrial operations are the main sources of nitrogen oxides, which include NO_2. Aside from contributing 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 on high pollution days, especially in conjunction with high ozone levels. In 2010, the USEPA implemented a new 1-hour NO_2 standard. Table 4.G.1 shows that the current Federal and State standards for NO_2 have been met in the Bay Area except for one day of exceedance in San Francisco in 2012. Currently, the USEPA has designated the SFBAAB as an unclassifiable/attainment area for the new Federal 1-hour NO_2 standard, which is based on a 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each monitoring site.

The USEPA has also established requirements for a new monitoring network to measure NO_2 concentrations near major roadways in urban areas with a population of 500,000 or more. Sixteen new near-roadway monitoring sites will be required in California, three of which will be in the Bay Area. These monitors will be deployed in phases between 2013 and 2017. The new monitoring data may result in a need to change area designations in the future. The ARB will revise the area designation recommendations, as appropriate, once the new monitoring data become available.

Sulfur Dioxide

SO_2 is a colorless acidic gas with a strong odor. It is produced by the combustion of sulfur-containing fuels such as oil, coal, and diesel. SO_2 has the potential to damage materials and can cause health effects at high concentrations. It can irritate lung tissue and increase the risk of acute and chronic respiratory disease. Table 4.G.1 shows that the State's 24-hour standard for SO_2 was met in San Francisco as of 2008; however, more recent data is not available. In 2010, the USEPA implemented a new 1-hour SO_2 standard. Pollutant trends suggest that these standards will continue to be met for the foreseeable future. The USEPA anticipates initially designating areas based on 2008-2010 monitoring data, or refined dispersion modeling results if provided by the State by June 2012. Similar to the new Federal standard for NO_2, the USEPA has established requirements for a new source-oriented monitoring network to measure SO_2 concentrations to be deployed by 2017. The new monitoring data may result in a need to change area designations in the future.

Lead

Leaded gasoline (phased out in the United States beginning in 1973), paint (on older houses and cars), smelters (metal refineries), and the manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere. Lead has a range of adverse neurotoxic health effects, and children are at special risk. Some lead-containing chemicals cause cancer in animals. Lead levels in the air have decreased substantially since leaded gasoline was eliminated. Ambient lead concentrations are only monitored on an as-warranted, site-specific basis in California. On October 15, 2008, the USEPA strengthened the national ambient air quality standard for lead by lowering it from 1.5 $\mu g/m^3$ to 0.15 $\mu g/m^3$. The USEPA revised the monitoring requirements for lead in December 2010. These requirements focus on airports and large urban areas, resulting in an increase of 76 monitors nationally.

TOXIC AIR CONTAMINANTS

Introduction

Toxic air contaminants (TACs) are defined in California Health and Safety Code Section 39655 as an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than that of another.

TACs do not have ambient air quality standards, but are regulated by the BAAQMD using a risk-based approach. The approach uses a health risk assessment to determine what sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated, and considered together with information regarding the toxic potency of the substances, to provide quantitative estimates of health risks.[9]

In addition to monitoring criteria air pollutants, both the BAAQMD and the ARB operate TAC monitoring networks in the San Francisco Bay Area. These stations measure 10 to 15 TACs, depending on the specific station. The TACs selected for monitoring are those that have

[9] In general, a health risk assessment is required if the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified stationary source suggest a potential public health risk. Such an assessment evaluates the chronic, long-term health effects, calculating the increased risk of cancer as a result of exposure to one or more TACs for the source in question.

traditionally been found in the highest concentrations in ambient air, and therefore tend to be substantial contributors to community health risk.

The BAAQMD collects ambient TAC emissions data at its 16th and Arkansas Street monitoring station in San Francisco, which is the only monitoring site for air toxics in San Francisco. Table 4.G.2: Carcinogenic Toxic Air Contaminants - Annual Average Ambient Concentrations shows ambient concentrations of carcinogenic TACs measured at the Arkansas Street monitoring station and the estimated cancer risks from lifetime (70 years) exposure to these substances.

Table 4.G.2: Carcinogenic Toxic Air Contaminants – Annual Average Ambient Concentrations

Substance	Mean Concentration	Cancer Risk Per Million [a]
Gaseous TACs	(ppb)	
Acetaldehyde	0.68	3
Benzene	0.229	21
1,3-Butadiene	0.044	17
Para-Dichlorobenzene	0.15	10
Carbon Tetrachloride	0.088	23
Ethylene Dibromide	0.006	3
Formaldehyde	1.32	10
Perchloroethylene	0.018	0.7
Methlylene Chloride	0.12	0.4
Methyl tertiary-Butyl Ether (MTBE)	0.26	0.3
Chlorform	0.023	0.6
Trichloroethlene	0.01	0.1
Particulate TACs	(ng/m^3)	
Chromium (Hexavalent)	0.05	8

Notes:
All values are from BAAQMD 2011 monitoring data from the 16th and Arkansas Street station, except for Para-Dichlorobenzene (2006), Ethylene Dibromide (1992), and MTBE (2003).
ppb=parts per billion; ng/m^3 = nanograms per cubic meter
[a] Cancer risks were estimated by applying published unit risk values to the measured concentrations.

Source: California Air Resources Board, Ambient Air Toxics Summary, 2011. Available online at http://www.arb.ca.gov/adam/toxics/sitesubstance.html. Accessed February 12, 2013.

When TAC measurements at the Arkansas Street monitoring station are compared to ambient concentrations of various TACs for the Bay Area as a whole, the cancer risks associated with mean TAC concentrations in San Francisco are similar to those for the Bay Area as a whole. Therefore, the estimated average lifetime cancer risk resulting from exposure to TAC concentrations monitored at the Arkansas Street monitoring station does not appear to be any greater than for the Bay Area as a region.

Roadway-Related Pollutants

Motor vehicles are responsible for a large share of air pollution and also contribute to particulates by generating road dust and through tire wear. Vehicle tailpipe emissions contain numerous TACs, including benzene, 1,3-butadiene, formaldehyde, acetaldehyde, acrolein, naphthalene, and diesel exhaust.[10] Engine exhaust, from diesel, gasoline, and other combustion engines, is a complex mixture of particles and gases, with collective and individual toxicological characteristics. While each constituent pollutant in engine exhaust may have a unique toxicological profile, health effects have been associated with proximity, or exposure, to vehicle-related pollutants collectively as a mixture.[11] 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.[12] As discussed above on p. 4.G.5, people living in proximity to freeways or busy roadways have poorer health outcomes. Air pollution monitoring done in conjunction with epidemiological studies has confirmed that roadway-related health effects vary with modeled exposure to particulate matter and NO_2. In traffic-related studies, the additional non-cancer health risk attributable to roadway proximity was seen within 1,000 feet of the roadway and was strongest within 300 feet. As a result, the ARB recommends that new sensitive land uses not be located within 500 feet of a freeway or urban roads carrying 100,000 vehicles per day.[13,14] In 2008, San Francisco adopted amendments to the Health Code (discussed under "Regulatory Framework," on pp. 4.G.17-4.G.18), requiring new residential projects near high-volume roadways to be screened for exposure hazards and, where indicated, to conduct an analysis of exposure and to mitigate hazards through design and ventilation. In addition to $PM_{2.5}$, diesel particulate matter (DPM) is also of concern.

[10] SFDPH, *Assessment and Mitigation of Air Pollutant Health Effects from Intra-Urban Roadways: Guidance for Land Use Planning and Environmental Review*, May 2008. Available online at http://www.sfdph.org/dph/files/EHSdocs/AirQuality/MitigateRoadAQLUConlicts.pdf. Accessed February 14, 2013.

[11] Delfino RJ, 2002, "Epidemiologic evidence for asthma and exposure to air toxics: linkages between occupational, indoor, and community air pollution research," Environmental Health Perspectives, 110(S4):573-589.

[12] SFDPH, *Assessment and Mitigation of Air Pollutant Health Effects from Intra-Urban Roadways: Guidance for Land Use Planning and Environmental Review*, May 2008. Available online at http://www.sfdph.org/dph/files/EHSdocs/AirQuality/MitigateRoadAQLUConlicts.pdf. Accessed February 14, 2013.

[13] ARB, *Air Quality and Land Use Handbook*, p. 4, Table 1-1. Available online at http://www.arb.ca.gov/ch/landuse.htm. Accessed February 12, 2013.

[14] This recommendation is put forth to minimize potential non-cancer health effects of exposure to pollutants known to increase incidence of asthma and other respiratory ailments, particularly fine particulates, as well as cancer risk from exposure to DPM and chemicals from automobile exhaust.

Diesel Particulate Matter

The ARB identified DPM as a TAC in 1998, primarily based on evidence demonstrating cancer effects in humans.[15] The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Mobile sources such as trucks and buses are among the primary sources of diesel emissions, and concentrations of DPM are higher near heavily traveled highways. The estimated cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other toxic air pollutant routinely measured in the region. The ARB estimated the average Bay Area cancer risk from DPM, based on a population-weighted average ambient diesel particulate concentration, at about 480 in one million, as of 2000. The risk from diesel particulate matter declined from 750 in one million in 1990 to 570 in one million in 1995; by 2000, ARB estimated the average statewide cancer risk from DPM at 540 in one million.[16,17]

Recent air pollution studies have shown an association between respiratory and other non-cancer health effects and proximity to high traffic roadways. The ARB community health risk assessments and regulatory programs have produced air quality information about certain types of facilities for consideration by local authorities when siting new residences, schools and educational facilities, day care centers, parks and playgrounds, and medical facilities (i.e., sensitive land uses). Sensitive land uses deserve special attention because children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the non-cancer effects of air pollution. There is also substantial evidence that children are more sensitive to cancer-causing chemicals.[18]

In 2000, the ARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. Subsequent ARB regulations apply to new trucks and to diesel fuel. With new controls and fuel requirements, 60 trucks built in 2007 would have the same soot exhaust emissions as one truck built in 1988.[19]

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[15] ARB, Fact Sheet, "The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines", October 1998. Available online at http://www.arb.ca.gov/toxics/dieseltac/factsht1.pdf. Accessed February 14, 2013.

[16] ARB, California Almanac of Emissions and Air Quality - 2009 Edition, Table 5-44 and p. 5-44. Available online at http://www.arb.ca.gov/aqd/almanac/almanac09/pdf/chap509.pdf. Accessed February 14, 2013.

[17] This calculated cancer risk values from ambient air exposure in the Bay Area can be compared against the lifetime probability of being diagnosed with cancer in the United States, from all causes, which is more than 40 percent (based on a sampling of 17 regions nationwide), or greater than 400,000 in one million, according to the National Cancer Institute.

[18] ARB, *Air Quality and Land Use Handbook*, p. ES-1. Available online at http://www.arb.ca.gov/ch/landuse.htm. Accessed February 12, 2013.

[19] Pollution Engineering, New Diesel Fuel Rules Start. Available online at http://www.pollution engineering.com/articles/85480-new-clean-diesel-fuel-rules-start. Accessed February 14, 2013.

Despite notable emission reductions, the ARB recommends that proximity to sources of DPM emissions be considered in the siting of new sensitive land uses. The ARB notes that these recommendations are advisory and should not be interpreted as defined “buffer zones.” ARB acknowledges that land use agencies must balance other considerations, including housing and transportation needs, the benefits of urban infill, community economic development priorities, and other quality-of-life issues. With careful evaluation of exposure, health risks, and affirmative steps to reduce risk where necessary, ARB’s position is that infill development, mixed-use, higher density, transit-oriented development, and other concepts that benefit regional air quality can be compatible with protecting the health of individuals at the neighborhood level.[20]

SENSITIVE RECEPTORS

Air quality does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than others. As noted above, population subgroups sensitive to the health effects of air pollutants include the elderly and the young, those with higher rates of respiratory disease such as asthma and chronic obstructive pulmonary disease, and those with other environmental or occupational health exposures (e.g., indoor air quality) that affect cardiovascular or respiratory diseases. Sensitive receptors are defined by the BAAQMD as “Facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals and residential areas.” Compared to commercial and industrial areas, people generally spend longer periods of time at their residences, with associated greater exposure to ambient air quality conditions.[21]

The nearest existing sensitive receptors to the project site are residences located at 88 Howard Street (Rincon Towers), a 24-story, approximately 280-foot-tall, 320-unit residential tower, approximately 95 feet north of the project site. Additional nearby residences are located at 75 Folsom Street (Hills Plaza) approximately 470 feet southeast of the project site and at 301 Main Street (Infinity I) and 300 Spear Street (Infinity II), approximately 620 feet and 545 feet southeast of the project site. Additionally, the proposed project would introduce new sensitive receptors (residential) to the vicinity of existing nearby sources of emissions. There are also several hotels within two blocks of the project site: 155 Steuart Street (Hotel Griffon), 165 Steuart Street (Harbor Court Hotel), and 8 Mission Street (Hotel Vitale).

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[20] ARB, *Air Quality and Land Use Handbook*, p. ES-2.

[21] The factors responsible for variation in exposure are also often similar to factors associated with greater susceptibility to air quality health effects.

The licensed child-care centers near the project site are sensitive to air pollution. These include the nearest day care at 220 Spear Street (Marin Day School), about 150 feet from the project site, and other facilities within commercial buildings at 221 Main Street (Bright Horizons), 2 Harrison Street (Marin Day School), and 342 Howard Street (Marin Day School), and 77 Beale Street (Pacific Gas & Electric).[22]

REGULATORY FRAMEWORK

FEDERAL/STATE

Federal Ambient Air Quality Standards

The 1970 Clean Air Act (as amended in 1990) required that regional planning and air pollution control agencies prepare a regional air quality plan to outline the measures by which both stationary and mobile sources of pollutants will be controlled in order to achieve all standards by the deadlines specified in the Clean Air Act. These ambient air quality standards are intended to protect the public health and welfare, and they specify the concentration of pollutants (with an adequate margin of safety) to which the public can be exposed without adverse health effects. They are designed to protect those segments of the public most susceptible to respiratory distress, including asthmatics, the very young, the elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels that are somewhat above ambient air quality standards before adverse health effects are observed.

The current attainment[23] status for the SFBAAB, with respect to Federal standards, is summarized in Table 4.G.3: State and Federal Ambient Air Quality Standards. The SFBAAB is designated as "nonattainment" for ozone and $PM_{2.5}$ Federal standards, "unclassified" for national PM_{10} and NO_2 standards, and "attainment" for Federal standards for other pollutants. In June 2004, the Bay Area was designated as a marginal nonattainment area of the national 8-hour ozone standard. USEPA lowered the national 8-hour ozone standard from 0.80 to 0.75 parts per million

22 California Community Care Licensing Division, Department of Social Services. Available at: https://secure.dss.cahwnet.gov/ccld/securenet/ccld_search/ccld_search.aspx. Accessed February 27, 2013.

23 "Attainment" status refers to those regions that are meeting Federal and/or State standards for a specified criteria air pollutant. "Non-attainment" refers to regions that do not meet Federal and/or State standards for a specified criteria air pollutant. "Unclassified" refers to regions where there is not enough data to determine the region's attainment status.

Table 4.G.3: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	(State) CAAQS[a] Standard	(State) CAAQS[a] Attainment Status	(Federal) NAAQS[b] Standard	(Federal) NAAQS[b] Attainment Status
Ozone	1 hour	0.09 ppm	**N**	---	See Note c
	8 hour	0.07 ppm	**N**[d]	0.075 ppm	**N**
Carbon Monoxide (CO)	1 hour	20 ppm	A	35 ppm	A
	8 hour	9 ppm	A	9 ppm	A
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm	A	0.100 ppm	U
	Annual	0.03 ppm	---	0.053 ppm	A
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm	A	0.075ppm	A
	24 hour	0.04 ppm	A	0.14 ppm	A
	Annual	---	---	0.03 ppm	A
Particulate Matter (PM_{10})	24 hour	50µg/m^3	**N**	150 µg/m^3	U
	Annual [e]	20µg/m^3	**N**	---	---
Fine Particulate Matter ($PM_{2.5}$)	24 hour	---	---	35µg/m^3	**N**
	Annual	12µg/m^3	**N**	12µg/m^3	See Note f
Sulfates	24 hour	25 µg/m^3	A	---	---
Lead	30 day	1.5 µg/m^3	---	---	---
	Quarterly	---	---	1.5µg/m^3	A
Hydrogen Sulfide	1 hour	0.03 ppm	U	---	---
Visibility-Reducing Particles	8 hour	See Note g	U	---	---

Notes:

A = Attainment; N = Nonattainment; U = Unclassified; --- = Not Applicable, no applicable standard; ppm = parts per million; µg/m^3 = micrograms per cubic meter.

[a] CAAQS = California ambient air quality standards. CAAQS for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All other State standards shown are values not to be equaled or exceeded.

[b] NAAQS = national ambient air quality standards. NAAQS, other than ozone and particulates, and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The 8-hour ozone standard is attained when the three-year average of the fourth highest daily concentration is 0.075 ppm or less. The 24-hour PM_{10} standard is attained when the three-year average of the 99th percentile of monitored concentrations is less than the standard. The 24-hour $PM_{2.5}$ standard is attained when the three-year average of the 98th percentile is less than the standard.

[c] The USEPA revoked the national 1-hour ozone standard on June 15, 2005.

[d] This State 8-hour ozone standard was approved in April 2005 and became effective in May 2006.

[e] State standard = annual geometric mean; national standard = annual arithmetic mean.

[f] In March 2013, the USEPA implemented a new annual $PM_{2.5}$ standard of 12.0 µg/m^3. Although SFBAAB is likely to meet the new 2013 Federal standard, the USEPA will not decide on attainment status until 2014 at the earliest.

[g] Statewide visibility-reducing particle standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Source: Bay Area Air Quality Management District, *Air Quality Standards and Attainment Status*, May 2013. Available online at http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm. Accessed May 9, 2013.

(ppm) effective May 27, 2008. On February 7, 2012 the USEPA proposed a rule that takes necessary steps to implement the 2008 national 8-hour ozone standard, establishing an approach for classification of nonattainment areas – areas not meeting the 2008 ozone standard.[24]

State Ambient Air Quality Standards

Although the Federal Clean Air Act established national ambient air quality standards, individual states retained the option to adopt more stringent standards and to include other pollution sources. California had already established its own air quality standards when Federal standards were established, and because of the differing implementing authorities in California, there is considerable diversity between the State and national ambient air quality standards, as shown in Table 4.G.3. California ambient standards tend to be at least as protective as national ambient air quality standards and are generally more stringent.

In 1988, California passed the California Clean Air Act (California Health and Safety Code Sections 39000 et seq.), which, like its Federal counterpart, called for the designation of areas as attainment or nonattainment, but based on State ambient air quality standards rather than the Federal standards. As indicated in Table 4.G.3, the SFBAAB is designated as "nonattainment" for State ozone, PM_{10}, and $PM_{2.5}$ standards, and attains the State standards for other pollutants.

Bay Area Air Quality Planning Relative to State and Federal Standards

Air quality plans developed to meet Federal requirements are referred to as State Implementation Plans. The Federal and State Clean Air Acts require plans to be developed for areas designated as nonattainment (with the exception of areas designated as nonattainment for the State PM_{10} standard). The *Bay Area 2010 Clean Air Plan* (*2010 CAP*) was adopted on September 15, 2010, by the BAAQMD, in cooperation with the Bay Area Metropolitan Transportation Commission (MTC), the Bay Conservation and Development Commission (BCDC), and the Association of Bay Area Governments (ABAG). The primary objectives of the *2010 CAP* are to attain air quality standards, reduce population exposure and protect public health in the San Francisco Bay Area; and reduce greenhouse gas emissions and protect the climate.

The *2010 CAP* represents the most current applicable air quality plan for the SFBAAB and the Bay Area's most recent triennial assessment of the region's strategy to attain the State one-hour ozone standard. The *2010 CAP* serves to (1) update the Bay Area *2005 Ozone Strategy*, adopted in 2006, in accordance with the requirements of the California Clean Air Act to (1) implement

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[24] USEPA, *Fact Sheet, Proposed Rule - Implementation of the 2008 National Ambient Air Quality Standards for Ozone: Nonattainment Area Classifications Approach and Attainment Deadlines*. Available online at http://www.epa.gov/air/ozonepollution/pdfs/20120203factsheet.pdf. Accessed February 14, 2013.

"all feasible measures" to reduce ozone; (2) provide a control strategy to reduce ozone, particulate matter, toxic air contaminants, and greenhouse gases in a single, integrated plan; (3) review progress in improving air quality in recent years; and (4) establish emission control measures to be adopted or implemented. The control strategy includes stationary-source control measures to be implemented through BAAQMD regulations; mobile-source control measures to be implemented through incentive programs and other activities; transportation control measures to be implemented through transportation programs in cooperation with the MTC, local governments, transit agencies, and others; and land use, energy, and climate control measures to be implemented primarily through State and local government regulations. The *2010 CAP* represents the Bay Area's most recent triennial assessment of the region's strategy to attain the State one-hour ozone standard.[25]

Toxic Air Contaminants

In 2005, the ARB approved a regulatory measure to reduce emissions of toxic and criteria air pollutants by limiting the idling of new heavy-duty diesel vehicles. The regulations generally limit idling of commercial motor vehicles (including buses and trucks) within 100 feet of a school or residential area for more than five consecutive minutes or periods aggregating more than five minutes in any one hour.[26] Buses or vehicles also must turn off their engines upon stopping at a school and must not turn their engines on more than 30 seconds before beginning to depart from a school. Also, Senate Bill 352 (SB 352) was adopted by the California legislature in 2003 and limits locating public schools within 500 feet of a freeway or busy traffic corridor (Section 17213 of the Education Code; Section 21151.8 of the Public Resources Code).

Bay Area Air Quality Management District

The BAAQMD is the regional agency with jurisdiction over the nine-county region located in the SFBAAB. ABAG, MTC, county transportation agencies, cities and counties, and various non-governmental organizations also join in the efforts to improve air quality through a variety of programs. These programs include the adoption of regulations and policies, as well as implementation of extensive education and public outreach programs.

[25] BAAQMD, *Bay Area 2010 Clean Air Plan*. Available online at http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/Clean-Air-Plans.aspx. Accessed February 13, 2013.

[26] There are 12 exceptions to this requirement (e.g., emergency situations, military, adverse weather conditions, etc.), including when a vehicle's power takeoff is being used to run pumps, blowers, or other equipment; when a vehicle is stuck in traffic, stopped at a light, or under direction of a police officer; when a vehicle is queuing beyond 100 feet from any restricted area; or when an engine is being tested, serviced, or repaired.

The BAAQMD is responsible for attaining and/or maintaining air quality in the region within Federal and State air quality standards. Specifically, the BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the region and to develop and implement strategies to attain the applicable Federal and State standards.

LOCAL

San Francisco General Plan Air Quality Element

The *San Francisco General Plan* (*General Plan*) includes the Air Quality Element.[27] 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.

Transit Center District Plan

The TCDP includes objectives and policies that would focus growth in close proximity to San Francisco's highest concentration of public transit. Implementation of the TCDP would facilitate improvements in air quality through policies related to land use (to increase densities and provide a mix of uses), the urban form (to maintain separations between tall buildings), the public realm and moving about (to facilitate convenient walking, augment bicycle facilities, encourage non-auto travel), and to ensure district sustainability (with high performance buildings and a potential future district energy distribution network involving combined heat and power). Implementing the TCDP policies would increase building performance and result in leading edge design in terms of sustainability, which would reduce the amount of energy and amount of fuel consumed to operate the proposed project. While TCDP objectives and policies would facilitate local improvements in air quality, none of the TCDP policies specifically address air quality or air pollution.

[27] City and County of San Francisco, Planning Department, Air Quality, An Element of the *General Plan* of the City and County of San Francisco, July 1997, updated in 2000.

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 within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specific dust control measures whether or not the activity requires a permit from the Department of Building Inspection (DBI). For projects over one-half acre, the Dust Control Ordinance requires that the project sponsor submit a Dust Control Plan for approval by the San Francisco Department of Public Health (DPH) prior to issuance of a building permit by the DBI.

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 miles per hour. Reclaimed water must be used if required by Article 21, Section 1100 et seq. of the San Francisco Public Works Code. The project site is approximately 1.2 acres in size. Therefore, the project sponsor would be required to prepare a Dust Control Plan.

San Francisco Health Code Provisions Regarding Roadway-Generated Pollutants (Article 38)

San Francisco adopted Article 38 of the San Francisco Health Code in 2008, requiring an Air Quality Assessment for new residential projects of 10 or more units located in proximity to high-traffic roadways, as mapped by the DPH, to determine whether residents would be exposed to unhealthful levels of $PM_{2.5}$. The air quality assessment evaluates the concentration of $PM_{2.5}$ from local roadway traffic that may impact a proposed residential development site. If the DPH air quality assessment indicates that the annual average concentration of $PM_{2.5}$ at the site would be greater than 0.2 $\mu g/m^3$, Health Code Section 3807 requires development on the site to be designed or relocated to avoid exposure greater than 0.2 $\mu g/m^3$, or a ventilation system to be installed that would be capable of removing 80 percent of ambient $PM_{2.5}$ from habitable areas of the residential units. The project site is identified by DPH as being within proximity to high-traffic roadways and subject to the provisions of Article 38. The maximum average annual exposure at receptors

35 feet above ground level and within the boundaries of the project site is estimated to be 0.02 $\mu g/m^3$, which is below the action threshold required by Article 38.[28]

IMPACTS AND MITIGATION MEASURES

Air quality impacts from land development projects result from project construction and operation. Construction emissions, primarily dust generated by earth-moving activities and pollutants emitted by construction vehicles, would have a short-term effect on air quality. Operational emissions generated by project-related traffic, combustion of natural gas for building space and water heating, and diesel fuel use for back-up power would affect air quality throughout the lifetime of the project.

SIGNIFICANCE CRITERIA

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 adopted and modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the project would result in a significant impact on air quality. Implementation of the proposed project and project variants would have a significant effect on air quality if the project would:

- G.1 Conflict with or obstruct implementation of the applicable air quality plan;
- G.2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- G.3 Result in a cumulatively considerable net increase of any criteria air pollutant for which the project region is in nonattainment under an applicable Federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors); or
- G.4 Expose sensitive receptors to substantial pollutant concentrations.

PROJECT FEATURES

The proposed project includes a 31-story, high-rise tower that would contain up to 186 residential units, 5,658 gsf of retail use, a 26,701-gsf two-level underground parking garage, associated building services, and open space. Residential dwelling units would occupy building levels beginning on floor 3 (at approximately 35 feet tall) through floor 31. The proposed project would include the siting of new sensitive receptors as well as the introduction of new stationary sources

[28] City and County of San Francisco Department of Public Health (DPH), Air, Noise and Radiation Program, Re: 75 Howard Street – Air Quality Assessment. March 5, 2013. This document is available for review at the San Francisco Planning Department,1650 Mission Street, Suite 400, in Case File No. 2011.1122E.

of emissions subject to permitting requirements: a diesel-fueled back-up emergency generator and natural gas–fired mechanical systems or boilers. The emergency generator and other mechanical systems would be located on the southeast portion of the roof (see Figure 2.11: Proposed Roof Plan, p. 2.19). The boiler room, chiller room, and other mechanical space would be located along the southern portion of the building site at Basement Level 1 (see Figure 2.12: Proposed Basement Level 1 Plan, p. 2.21). Development of the proposed project would introduce additional vehicular traffic in the project vicinity. Implementation would require demolition of the existing parking garage on the building site and excavation of up to approximately 59 feet below the ground surface. Approximately 45,000 cubic yards of soil would be excavated and removed from the project site. Installation of the landscape and hardscape improvements at the open space improvement site could require additional excavation up to ten feet deep on portions of the improvement site and up to 5,000 cubic yards of soil that would be excavated and removed from the site.

Project construction would take about 30 months. Demolition would take about 11 weeks. Basement construction would take a total of about 19 weeks (including the following overlapping phases: 14 weeks of excavation, 5 weeks of pile driving, and about 7 weeks to construct the mat and floor slabs and basement walls). Above-ground building construction would take about 70 weeks. The construction of the open space improvement area would likely occur during the last half of the construction period for the above-ground construction.

The proposed project includes two project variants: the Public Parking Variant and the Residential/Hotel Mixed Use Variant. Under the proposed Public Parking Variant, uses would be the same as those under the proposed project; however, there would be an additional 91 non-accessory public off-street parking spaces, and two additional car-share parking spaces for a total of 268 parking spaces, to partially offset the 540 public spaces lost by demolition of the 75 Howard Garage provided under this variant. Under the proposed Residential/Hotel Mixed Use Variant, there would be a mix of approximately 109 residential units and 82 hotel rooms with associated hotel amenity space. Hotel rooms would be located on floors 3 through 7 and floors 10 through 12, and residential units would be located on floors 13 through 31. Similar to the proposed project, the Residential/Hotel Mixed Use Variant would include a lobby, restaurant, and amenity space on the first and second floors. Parking under this variant would include a total of 268 stacked parking spaces on Basement Level 2 (the same total number of parking spaces as under the Public Parking Variant).

As with the proposed project, the project variants would include the siting of new sensitive receptors as well as the introduction of new mobile and stationary sources of emissions. Both project variants would have an estimated depth of excavation for the basement garage levels of as much as 70 feet below the ground surface (11 feet deeper than the proposed project) and for which approximately 54,000 cubic yards of soil (9,000 cubic yards more than the proposed project) would be excavated and removed from the project site. As with the proposed project, the project variants would include the development of the open space improvement site. Construction and phasing under both variants would be similar to the proposed project. However, one week would be added to the overall schedule for the project variants to accommodate additional shoring, excavation and foundation work required for the construction of the basement.

APPROACH TO ANALYSIS

This section discusses the thresholds for determining whether a project would result in a significant air quality impact in compliance with checklist questions in Appendix G of the State CEQA Guidelines (p. 4.G.18).

Air Quality Plan

The *2010 CAP* represents the most current applicable air quality plan for the SFBAAB. Consistency with this plan is the basis for determining whether the proposed project or its variants would conflict with or obstruct implementation of an applicable air quality plan.

Criteria Air Pollutants

As described above under Regulatory Framework, pp. 4.G.12-4.G.14, the SFBAAB experiences low concentrations of most pollutants when compared to Federal or State standards and is designated as either in attainment or unclassified for most criteria pollutants with the exception of ozone, $PM_{2.5}$, and PM_{10}, for which these pollutants are designated as non-attainment for either the State or Federal standards. By its very nature regional air pollution is largely a cumulative impact in that no single project is sufficient in size to, by itself, result in non-attainment 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 is considerable, then the project's impact on air quality would be considered significant.[29]

Land use projects may contribute to regional criteria air pollutants during the construction and operational phases of a project. This section discusses the thresholds for determining whether a project would result in a significant air quality impact. Table 4.G.4: Criteria Air Pollutant Significance Thresholds, below, identifies air quality significance thresholds followed by a discussion of each threshold.

[29] BAAQMD *CEQA Air Quality Guidelines*, May 2011, p. 2-1.

Table 4.G.4: Criteria Air Pollutant Significance Thresholds

Pollutant	Construction Thresholds: Average Daily Emissions (pounds/day)	Operational Thresholds: Average Daily Emissions (pounds/day)	Operational Thresholds: Annual Average Emissions (tons/year)
ROG[a]	54	54	10
NOx	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	

Note:
[a] ROG = Reactive Organic Gas

Source: BAAQMD, 2011

Projects that would result in criteria air pollutant emissions below these significance thresholds would not violate an air quality standard, contribute substantially to an air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants within the SFBAAB.

Ozone Precursors

As discussed above under Regulatory Framework, pp. 4.G.12-4.G.14, the SFBAAB is currently designated as non-attainment for ozone. 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, are based on the State and Federal Clean Air Acts emissions limits for stationary sources. The Federal New Source Review (NSR) program was created by the Federal CAA to ensure that stationary sources of air pollution are constructed in a manner that is consistent with attainment of Federal health-based ambient air quality standards. Similarly, to ensure that new stationary sources do not cause or contribute to a violation of an air quality standard, BAAQMD Regulation 2, Rule 2 requires that any new source that emits criteria air pollutants above a specified emissions limit must offset those emissions. For ozone precursors ROG and NO_x, the offset emissions level is an annual average of 10 tons per year (or 54 pounds [lbs] per day).[30] These levels represent emissions 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.

Although this regulation applies to new or modified stationary sources, land use development projects result in ROG and NO_x emissions as a result of increases in vehicle trips, architectural coating and construction activities. Therefore, the above thresholds can be applied to the construction and operational phases of land use projects, and those projects that result in

[30] BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 17.

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. Due to the temporary nature of construction activities, only the average daily thresholds are applicable to construction phase emissions.

Particulate Matter (PM_{10} and $PM_{2.5}$)

The BAAQMD has not established an offset limit for $PM_{2.5}$. However, the emissions limit in the Federal NSR for stationary sources in nonattainment areas is an appropriate significance threshold. For PM_{10} and $PM_{2.5}$, the emissions limit under NSR is 15 tons per year (82 lbs per day) and 10 tons per year (54 lbs per day), respectively. These emissions limits represent levels at which a source is not expected to have an impact on air quality.[31] Similar to ozone precursor thresholds identified above, land use development projects typically result in particulate matter emissions as a result of increases in vehicle trips, space heating and natural gas combustion, landscape maintenance, and construction activities. Therefore, the above thresholds can be applied to the construction and operational phases of a land use project. Again, because construction activities are temporary in nature, only the average daily thresholds are applicable to construction-phase emissions.

Emissions calculations of criteria air pollutants have been prepared for the proposed project.[32] The calculations present estimated construction and operational criteria air pollutant emissions from the proposed project.

Fugitive Dust

Fugitive dust emissions are typically generated during construction phases. Studies have shown that the application of best management practices (BMPs) at construction sites significantly controls fugitive dust.[33] Individual measures have been shown to reduce fugitive dust by anywhere from 30 to 90 percent.[34] The BAAQMD has identified a number of BMPs to control fugitive dust emissions from construction activities.[35] The City's Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008) requires a number of measures to control fugitive dust to ensure that construction projects do not result in visible dust. The BMPs

[31] BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 16.
[32] *Air Quality Technical Memo*, Attachment A01.
[33] Western Regional Air Partnership, *WRAP Fugitive Dust Handbook*, September 7, 2006. Available online at http://www.wrapair.org/forums/dejf/fdh/content/FDHandbook_Rev_06.pdf. Accessed February 18, 2013.
[34] BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 27.
[35] BAAQMD, *CEQA Air Quality Guidelines*, May 2012, pp. 8-3 to 8-4.

employed in compliance with the City's Construction Dust Control Ordinance is an effective strategy for controlling construction-related fugitive dust.

Local Health Risks and Hazards

In addition to criteria air pollutants, individual projects may emit TACs. TACs collectively refer to a diverse group of air pollutants that are capable of causing chronic (i.e., of long-duration) and acute (i.e., severe but of short-term) adverse effects to human health, including carcinogenic effects. Unlike criteria air pollutants, TACs do not have ambient air quality standards but are regulated by the BAAQMD using a risk-based approach. This approach uses a health risk assessment to determine which sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated, and considered together with information regarding the toxic potency of the substances, to provide quantitative estimates of health risks.[36]

As discussed above under Environmental Setting, p. 4.G.11, land uses such as residences, schools, children's day care centers, hospitals, and nursing and convalescent homes are considered to be the most sensitive to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress or, as in the case of residential receptors, their exposure time is greater than for other land uses. Exposure assessment guidance typically assumes that residences would be exposed to air pollution 24 hours per day, 350 days per year, for 70 years. Therefore, assessments of air pollutant exposure to residents typically result in the greatest adverse health outcomes of all population groups.

With respect to localized health risks, while most of San Francisco is endowed with good air quality, portions of the City that are close to freeways, busy roadways, and other sources of air pollution experience higher concentrations of air pollutants. These air pollution hot spots result in additional health risks for affected populations. In an effort to identify air pollution hot spots, San Francisco partnered with the BAAQMD to inventory and assess air pollution and exposures from mobile, stationary, and area sources within San Francisco. This modeling effort included dispersion modeling of emissions from the primary sources of air pollutants in San Francisco, and therefore, the results represent a comprehensive assessment of cumulative exposures to air pollution throughout the City. The BAAQMD conducted the citywide dispersion modeling using

[36] In general, a health risk assessment is required if the 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.

AERMOD[37] to assess the emissions from the following primary sources: roadways, permitted stationary sources, port and maritime sources, and Caltrain. PM_{10}, $PM_{2.5}$ and total organic gases (TOG) were modeled on a 20 meter by 20 meter receptor grid covering the entire City. The methodology and technical documentation for modeling citywide air pollution is available in the document entitled, *The San Francisco Community Risk Reduction Plan: Technical Support Documentation*.[38] Using the citywide air pollution model, air pollution hot spots for San Francisco were identified based on two health-protective criteria: (1) excess cancer risk from the contribution of emissions from all modeled sources, and (2) cumulative $PM_{2.5}$ concentrations. In determining the additional health impacts from $PM_{2.5}$ exposure, $PM_{2.5}$ concentrations throughout the City were modeled from the primary sources listed above and ambient $PM_{2.5}$ concentrations were then added to determine total $PM_{2.5}$ exposure concentrations. The following health protective criteria are used to determine air pollution hot spots and are further discussed below:

- Excess cancer risk from all sources > 100 per one million population; and
- Annual $PM_{2.5}$ concentrations from all sources including ambient > 10 micrograms per cubic meter ($\mu g/m^3$).

Excess Cancer Risk

The above one hundred per one million persons (100 excess cancer risk) criterion is based on the United State Environmental Protection Agency (USEPA) guidance for conducting air toxic analyses and making risk management decisions at the facility and community-scale level.[39] As described by the BAAQMD, the USEPA 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 (NESHAP) rulemaking,[40] the USEPA states that it "…strives to provide maximum feasible protection against risks to health from hazardous air pollutants by (1) protecting the greatest number of persons possible to an individual lifetime risk level no higher than approximately 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

37 AERMOD is the USEPA's preferred/recommended steady state air dispersion plume model. For more information on AERMOD and to download the AERMOD Implementation Guide, see: http://www.epa.gov/ttn/scram/dispersion_prefrec.htm#aermod. Accessed May 10, 2013.

38 BAAQMD, San Francisco Department of Public Health, and San Francisco Planning Department, *The San Francisco Community Risk Reduction Plan: Technical Support Documentation*, December 2012. A copy of this document is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2011.1122E.

39 BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 67.

40 54 Federal Register 38044, September 14, 1989.

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.[41]

Fine Particulate Matter

In April 2011, the USEPA published *Policy Assessment for the Particulate Matter Review of the National Ambient Air Quality Standards*, "Particulate Matter Policy Assessment." In this document, USEPA concludes the current Federal standard of 15 $\mu g/m^3$ for $PM_{2.5}$ should be revised to a level within the range of 13 to 11 $\mu g/m^3$, and in March 2013, the USEPA implemented a new annual $PM_{2.5}$ standard of 12 $\mu g/m^3$.

Identified air pollution hot spots in San Francisco are also based on the health protective annual $PM_{2.5}$ standard, as supported by the USEPA's Particulate Matter Policy Assessment. However, San Francisco's air pollution hot spots have been identified using a lower $PM_{2.5}$ concentration of 10 $\mu g/m^3$ in order to be even more health protective and to account for potential error bounds present in emissions modeling programs.

Projects within these air pollution hot spots require special consideration to determine whether the project's activities would expose sensitive receptors to substantial air pollutant concentrations or add emissions to areas already adversely affected by poor air quality. This EIR evaluates whether the proposed project would result in new sensitive land uses located within air pollution hot spots or whether the project would result in new sources of emissions that would substantially affect nearby sensitive receptors.

Cumulative Air Quality Impacts

Regional air quality impacts are by their very nature cumulative impacts. Emissions from past, present and future projects contribute to adverse regional air quality impacts on a cumulative basis. 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 adverse air quality impacts.[42] 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.

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[41] BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 67.

[42] BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, pp. 1, 27, and 37.

IMPACT EVALUATION

Construction Air Quality Impacts

Project-related air quality impacts fall into two categories: short-term impacts due to construction and long-term impacts due to project operation. The following addresses construction-related air quality impacts resulting from the proposed project and project variants.

Impact AQ-1: The proposed project's and project variants' construction activities would generate fugitive dust and criteria air pollutants, but would not violate an air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. ***(Less than Significant)***

Construction activities (short-term) typically result in emissions of fugitive dust, criteria air pollutants, and DPM. Emissions of criteria air pollutants and DPM are primarily a result of the combustion of fuel from on-road and off-road vehicles. (DPM is also discussed under Impact AQ-2.) However, ROGs are also emitted from activities that involve painting or other types of architectural coatings or asphalt paving activities. As described above under "Project Features" on pp. 4.G.18-4.G.20, the demolition and construction activities under the proposed project and project variants, including the open space improvements, would be similar. However, excavation under the project variants would be up to 11 feet deeper than that under the proposed project, which would extend to a depth of approximately 59 feet below the ground surface. As a result, approximately 9,000 more cubic yards of soil would be excavated and removed from the project site under the project variants. During the approximately 30-month construction period for the proposed project and project variants, construction activities would have the potential to result in fugitive dust emissions, criteria air pollutants and DPM.

Fugitive Dust

Project-related demolition, excavation, grading, and other construction activities may cause wind-blown dust that could contribute particulate matter into the local atmosphere. Although there are Federal standards for air pollutants and implementation of State and regional air quality control plans, air pollutants continue to have impacts on human health throughout the country. California has found that particulate matter exposure can cause health effects at lower levels than national standards. The current health burden of particulate matter demands that, where possible, public agencies take feasible available actions to reduce sources of particulate matter exposure. According to the ARB, reducing ambient particulate matter from 1998-2000 levels to natural background concentrations in San Francisco would prevent over 200 premature deaths.

Dust can be an irritant causing watering eyes or irritation to the lungs, nose, and throat. Demolition, excavation, grading, and other construction activities can cause wind-blown dust to add to particulate matter in the local atmosphere. Depending on exposure, adverse health effects can occur due to this particulate matter in general and also due to specific contaminants such as lead or asbestos that may be constituents of soil.

In response, the San Francisco Board of Supervisors approved a series of amendments to the San Francisco Building and Health Codes generally referred hereto as the Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008) with the intent of reducing the quantity of dust generated during site preparation, demolition and construction work in order to protect the health of the general public and of onsite workers, minimize public nuisance complaints, and to avoid orders to stop work by DBI.

The Ordinance requires that all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specified dust control measures whether or not the activity requires a permit from DBI. The Director of DBI may waive this requirement for activities on sites less than one-half acre that are unlikely to result in any visible wind-blown dust.

In compliance with the Construction Dust Control Ordinance, the project sponsor and the contractor responsible for construction activities at the project site would be required to use the following practices to control construction dust on the site or other practices that result in equivalent dust control that are acceptable to the Director. 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 miles per hour. Reclaimed water must be used if required by Article 21, Section 1100 et seq. of the San Francisco Public Works Code. If not required, reclaimed water should be used whenever possible. Contractors shall provide as much water as necessary to control dust (without creating run-off in any area of land clearing, and/or earth movement). During excavation and dirt-moving activities, contractors shall wet sweep or vacuum the streets, sidewalks, paths, and intersections where work is in progress at the end of the workday. Inactive stockpiles (where no disturbance occurs for more than seven days) greater than 10 cubic yards or 500 square feet of excavated materials, backfill material, import material, gravel, sand, road base, and soil shall be covered with a 10 millimeter (0.01 inch) polyethylene plastic (or equivalent) tarp, braced down, or use other equivalent soil stabilization techniques.

For projects with sites of over one-half acre, such as the proposed project, the Dust Control Ordinance requires that the project sponsor submit a Dust Control Plan for approval by the San Francisco Department of Public Health. DBI will not issue a building permit without written notification from the Director of Public Health that the applicant has a site-specific Dust Control Plan, unless the Director waives the requirement. Interior-only tenant improvement projects that are over one-half acre in size that will not produce exterior visible dust are exempt from the site-specific Dust Control Plan requirement.

The site-specific Dust Control Plan requires the project sponsor to submit a map to the Director of Public Health showing all sensitive receptors within 1,000 feet of the site; wet down areas of soil at least three times per day; provide an analysis of wind direction and install upwind and downwind particulate dust monitors; record particulate monitoring results; hire an independent, third-party to conduct inspections and keep a record of those inspections; establish shut-down conditions based on wind, soil migration, etc.; establish a hotline for surrounding community members who may be potentially affected by project-related dust; limit the area subject to construction activities at any one time; install dust curtains and windbreaks on the property lines, as necessary; limit the amount of soil in haul trucks to the size of the truck bed and secure with a tarpaulin; enforce a 15-mile-per-hour speed limit for vehicles entering and exiting construction areas; sweep affected streets with water sweepers at the end of the day; install and utilize wheel washers to clean truck tires; terminate construction activities when winds exceed 25 miles per hour; apply soil stabilizers to inactive areas; and sweep off adjacent streets to reduce particulate emissions. The project sponsor would be required to designate an individual to monitor compliance with these dust control requirements.

Compliance with these regulations and procedures set forth in the San Francisco Building Code would ensure that potential dust-related air quality impacts would be reduced to a less-than-significant level.

Criteria Air Pollutants

The proposed project and its variants include the demolition of the existing 8-story parking garage on the building site, excavation up to a depth of approximately 59 feet below the ground surface (70 feet for the project variants), and construction of a 31-story, residential, high-rise tower. Approximately 50,000 cubic yards of soil would be excavated and removed from the project site under the proposed project, while approximately 59,000 cubic yards of soil would be excavated and removed under the project variants. A detailed quantification of construction-related criteria air pollutant emissions was conducted for the proposed project and project variants due to the extensive material transport and haul truck activity related to the proposed excavation (i.e., greater than 10,000 cubic yards of material exported).[43] Because of the greater excavation under the project variants, higher levels of construction phase emissions would occur for both variants. Table 4.G.5: Estimated Average Daily Construction Emissions summarizes the modeled construction-related emissions of each criteria air pollutant and precursor. As shown in

[43] *Air Quality Technical Memo*, Attachment A01.

Table 4.G.5: Estimated Average Daily Construction Emissions

	Projected Emissions (pounds per day)[1]			
Average Daily Emissions	**ROG**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Proposed Project	5.54	46.53	2.42	1.84
Public Parking Variant and Residential/Hotel Mixed Use Variant	5.60	47.64	2.46	1.87
Significance Threshold	54	54	82	54

Note:
[1] Emission factors were generated by CalEEMod model for San Francisco County.
Source: Aspen Environmental Group, March 2013

the table, the proposed project's and project variants' construction-related emissions would be below the thresholds of significance, and construction would result in a less-than-significant criteria air pollutant impact.

Impact AQ-2: The proposed project's and project variants' construction activities would generate toxic air contaminants, including diesel particulate matter, which would expose sensitive receptors to substantial pollutant concentrations. *(Less than Significant with Mitigation)*

Off-road equipment (which includes construction-related equipment) is a large contributor to DPM emissions in California, although since 2007, the ARB has found the emissions to be substantially lower than previously expected.[44] Newer and more refined emission inventories have substantially lowered the estimates of DPM emissions from off-road equipment such that off-road equipment is now considered the fourth largest source of DPM emissions in California.[45] For example, revised estimates of particulate matter (PM) emissions (of which DPM is a major component) for the SFBAAB for the year 2010 have decreased by 83 percent from estimates of 2010 emissions.[46] Approximately half of the reduction in emissions can be attributed to the economic recession and half to updated methodologies used to better assess construction emissions.[47]

[44] ARB, *Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements*, October 2010, p. 1 and p. 13 (Figure 4).
[45] ARB, *Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements*, October 2010, p. 13.
[46] ARB, "In-Use Off-Road Equipment, 2011 Inventory Model," Available online at: http://www.arb.ca.gov/msei/categories.htm#inuse_or_category. Accessed February 22, 2013.
[47] ARB, *Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements*, October 2010, p. 17.

Additionally, a number of Federal and State regulations are requiring cleaner off-road equipment. Specifically, both the USEPA and 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 would be phased in between 2008 and 2015. To meet the Tier 4 emission standards, engine manufacturers will be required to produce new engines with advanced emission-control technologies. Although the full benefits of these regulations will not be realized for several years, the USEPA estimates that by implementing the Federal Tier 4 standards, NO_x and PM emissions will be reduced by more than 90 percent.[48] Furthermore, California regulations limit maximum idling times to five minutes, which further reduces public exposure to DPM emissions.[49]

In addition, construction activities do not lend themselves to analysis of long-term health risks because of their temporary and variable nature. As explained in the BAAQMD's *CEQA Air Quality Guidelines*:

> "Due to the variable nature of construction activity, the generation of TAC emissions in most cases would be temporary, especially considering the short amount of time such equipment is typically within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations. Concentrations of mobile-source diesel PM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (ARB 2005). In addition, current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 40, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. This results in difficulties with producing accurate estimates of health risk."[50]

Therefore, project-level analyses of construction activities have a tendency to produce overestimated assessments of long-term health risks. However, within air pollution hot spots, as discussed above, additional construction activity may adversely affect populations that are already at a higher risk for adverse long-term health risks from existing sources of air pollution.

The proposed project and project variants would require construction activities for the approximately 30-month construction phase. Proposed project and project variant construction activities would result in short-term emissions of diesel particulate matter and other toxic air contaminants that would add emissions to an identified air pollution hot spot as per the comprehensive health risk modeling undertaken by BAAQMD and San Francisco discussed in "Local Health Risks and Hazards" under "Approach to Analysis," pp. 4.G.23-4.G.24. This would result in a significant air quality impact to nearby sensitive land uses. Because the project site is

[48] USEPA, "Clean Air Nonroad Diesel Rule: Fact Sheet," May 2004.
[49] California Code of Regulations, Title 13, Division 3, Section 2485.
[50] BAAQMD, *CEQA Air Quality Guidelines*, May 2011, p. 8-6.

within the TCDP area, feasible construction emissions control strategies, such as avoiding the use of diesel fuel to power equipment, fitting equipment with lower-emitting engines, or retrofitting equipment with particulate matter emission controls, through TCDP area mitigation (TCDP EIR, Mitigation Measure M-AQ-5 Construction Vehicle Emissions Evaluation and Minimization) would be applicable to the proposed project and project variants. Implementation of the following emissions-reducing mitigation measure would be consistent with TCDP area mitigation and would reduce this impact to a less-than-significant level.

Mitigation Measure M-AQ-2: Construction Emissions Minimization [TCDP EIR M-AQ-5]

A. *Construction Emissions Minimization Plan.* Prior to issuance of a construction permit, the project sponsor shall submit a Construction Emissions Minimization Plan (Plan) to the Environmental Review Officer (ERO) for review and approval by an Environmental Planning Air Quality Specialist. The Plan shall detail project 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 are available, portable diesel engines shall be prohibited;
    b) All off-road equipment shall have:
        i. Engines that meet or exceed either U.S. Environmental Protection Agency (USEPA) or California Air Resources Board (ARB) Tier 2 off-road emission standards, *and*
        ii. Engines that are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy (VDECS).[51]
    c) Exceptions:
        i. Exceptions to A(1)(a) *may* be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that an alternative source of power is limited or infeasible at the project site and that the requirements of this exception provision apply. Under this circumstance, the sponsor shall submit documentation of compliance with A(1)(b) for on-site power generation.
        ii. Exceptions to A(1)(b)(ii) *may* be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that a particular piece of off-road equipment with an ARB Level 3 VDECS is: (1) technically not feasible, (2) would not produce desired emissions reductions due to expected operating modes, (3) installing the control device would create a safety hazard or impaired

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

visibility for the operator, or (4) there is a compelling emergency need to use off-road equipment that are not retrofitted with an ARB Level 3 VDECS and the sponsor has submitted documentation to the ERO that the requirements of this exception provision apply. If granted an exception to A(1)(b)(ii), the project sponsor must comply with the requirements of A(1)(c)(iii).

iii. If an exception is granted pursuant to A(1)(c)(ii), the project sponsor shall provide the next cleanest piece of off-road equipment as provided by the step down schedules in Table 4.G.6.

Table 4.G.6: Off-Road Equipment Compliance Step-down Schedule

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

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.
* Alternative fuels are not a VDECS.

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

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

4. The Plan shall include estimates of the construction timeline by phase with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information may include, but is not limited to: equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel 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 Plan shall be kept on-site and available for review by any persons requesting it and a legible sign shall be posted at the perimeter of the construction site indicating to the public the basic requirements of the Plan and a way to request a copy of the Plan. The project sponsor shall provide copies of Plan to members of the public as requested.

B. *Reporting*. Monthly reports shall be submitted to the ERO indicating the construction phase and off-road equipment information used during each phase including the information required in A(4). In addition, for off-road equipment using alternative fuels, reporting shall include the actual amount of alternative fuel used. Within six months of the completion of construction activities, the project sponsor shall submit to the ERO a final report summarizing construction activities. The final report shall indicate the start and end dates and duration of each construction phase. For each phase, the report shall include detailed information required in A(4). In addition, for off-road equipment using alternative fuels, reporting shall include the actual amount of alternative fuel used.

C. *Certification Statement and On-site Requirements.* Prior to the commencement of construction activities, the project sponsor must certify (1) compliance with the Plan, and (2) all applicable requirements of the Plan have been incorporated into contract specifications.

While the emissions reductions from limiting idling, educating workers and the public and properly maintaining equipment is difficult to quantify, other measures, specifically the requirement for equipment with Tier 2 engines and Level 3 VDECSs can reduce construction emissions by 89 to 94 percent compared to equipment with engines meeting no emission standards and without a VDECS. Emissions reductions from the combination of Tier 2 equipment with Level 3 VDECS are almost equivalent to requiring only equipment with Tier 4 Final engines, which are not yet available until model year 2015 for engine sizes subject to the mitigation. Therefore, compliance with Mitigation Measure M-AQ-2 would reduce temporary construction-related emissions impacts of the proposed project and project variants on nearby sensitive receptors to a less-than-significant level.

Operational Air Quality Impacts

Land use projects typically result in operational emissions of criteria air pollutants and toxic air contaminants primarily from an increase in motor vehicle trips. However, land use projects may also result in criteria air pollutants and toxic air contaminants from combustion of natural gas, landscape maintenance, use of consumer products, and architectural coating. The following addresses air quality impacts resulting from operation of the proposed project and project variants.

Impact AQ-3: During project operations, the proposed project and project variants would result in emissions of criteria air pollutants, but not at levels that would violate an air quality standard, contribute to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. *(Less than Significant)*

As described above in “Project Features,” pp. 4.G.18-4.G.20, the proposed project and the Public Parking Variant would entail the construction of a 432,253-gsf, 31-story high-rise tower that would contain up to 186 residential units, two below-grade parking levels, approximately 5,658 gsf of retail use, and associated building services. The Residential/Hotel Mixed Use Variant would contain up to 109 residential units and 82 hotel rooms. Both project variants would include 268 parking spaces. The proposed project and variants would be high-density mixed-use infill development in a transit-oriented area. Preliminary trip generation information indicates that the proposed project and Public Parking Variant would generate approximately 1,313 net new vehicle trips per day while the Residential/Hotel Mixed Use Variant would generate approximately 1,255 net new vehicle trips per day.[52] The proposed project and Public Parking Variant would be below the operational criteria air pollutant screening size for the Apartment, high-rise land use type (510 dwelling units) identified in the BAAQMD's *CEQA Air Quality Guidelines,* while the Residential/Hotel Mixed Use Variant would be below the operational criteria air pollutant screening size for the Apartment, high-rise and Hotel land use type (510 dwelling units; 489 rooms).[53] Quantification of project- and project-variant-generated operational criteria air pollutant emissions is provided in Table 4.G.7: Estimated Daily and Annual Operation-Related Emissions. There would be no notable differences in emissions during the operational phase of the project and both variants. As shown, the proposed project would not exceed any significance thresholds for criteria air pollutants, and therefore would result in a less-than-significant impact with respect to criteria air pollutants.

Table 4.G.7: Estimated Daily and Annual Operation-Related Emissions

	Daily Projected Emissions (pounds per day)			
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Project Area-Source Emissions	13.46	0.91	0.14	0.14
Project Mobile-Source (Vehicle) Emissions	5.03	7.94	7.30	0.53
Project Stationary Source Emissions	1.64	4.64	1.38	1.38
Total	**20.13**	**13.49**	**8.82**	**2.05**
Significance Threshold	54	54	82	54
	Annual Projected Emissions (tons per year)			
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Project Area-Source Emissions	2.41	0.15	0.02	0.02
Project Mobile-Source (Vehicle) Emissions	0.84	1.4	1.07	0.10
Project Stationary Source Emissions	0.30	0.85	0.25	0.25
Total	**3.55**	**2.4**	**1.34**	**0.37**
Significance Threshold	10	10	15	10

Notes: Neg: less than 0.005 tons/year
Source: Aspen Environmental Group, March 2013

[52] 75 Howard Street Project, Transportation Study (Trip Generation Calculations, Appendix G), May 2013.
[53] BAAQMD, *CEQA Air Quality Guidelines*, May 2011, Table 3-1 - Criteria Air Pollutants and Precursors and GHG Screening Level Sizes, p. 3-2.

Impact AQ-4: The proposed project and project variants would generate toxic air contaminants, including diesel particulate matter, and would expose sensitive receptors to substantial air pollutant concentrations. ***(Less than Significant with Mitigation)***

As discussed above on pp. 4.G.23-4.G.24, San Francisco, in partnership with the BAAQMD, has modeled and assessed air pollutant impacts from mobile, stationary, and area sources within the City. This assessment has resulted in the identification of air pollutant hot spots, or areas within the City that deserve special attention when siting uses that either emit toxic air contaminants or uses that are considered sensitive to air pollution. Sensitive residential land uses exist at 88 Howard Street (Rincon Towers), immediately north and within a 150-foot radius of the project site, and at 75 Folsom Street (Hills Plaza) and 301 Main Street/300 Spear (Infinity I and II), to the southeast and within 1,000 feet of the project site. With implementation of the proposed project new sensitive receptors would be introduced on the project site.

Sources of Toxic Air Contaminants

Individual projects result in emissions of toxic air contaminants primarily as a result of an increase in vehicle trips. However, new land uses that generate less than 10,000 vehicle trips per day would be "minor, low-impact" sources of toxic air contaminants that do not pose a significant health impact even in combination with other nearby sources. The proposed project's and Public Parking Variant's 1,313 net new daily vehicle trips and the 1,255 net new daily vehicle trips that would result with implementation of the Residential/Hotel Mixed Use Variant would be well below this level and would disperse among the various local roadway network;[54] therefore, the increase in vehicle trips under the proposed project and project variants would not generate a substantial amount of TAC emissions that could affect nearby sensitive receptors.

The proposed project would also include a back-up emergency generator. Emergency generators are regulated by BAAQMD through their New Source Review (Regulation 2, Rule 5) permitting process. The project applicant would be required to obtain applicable permits to operate an emergency generator from BAAQMD. Although emergency generators are intended only to be used in periods of power outages, monthly testing of the generator would be required. BAAQMD would limit testing to no more than 50 hours per year. Additionally, as part of the permitting process, BAAQMD would limit the excess cancer risk from any facility to no more than ten per one million population and requires any source that would result in an excess cancer risk greater than one per one million population to install Best Available Control Technology for Toxics (TBACT). However, because the site is located in an air pollution hot spot, the proposed generator has the potential to expose sensitive receptors to substantial concentrations of diesel

[54] 75 Howard Street Project, Transportation Study (Trip Generation Calculations, Appendix G), May 2013.

emissions, a known TAC, resulting in a significant air quality impact. The TCDP area mitigation to implement all feasible control measures (TCDP EIR, Mitigation Measure M-AQ-3: Siting of Uses that Emit DPM and Other TACs) would be applicable to the proposed back-up emergency generator. Implementation of the following mitigation measure would be consistent with TCDP area mitigation and would reduce this impact to a less-than-significant level.

Mitigation Measure M-AQ-4a: Best Available Control Technology for Diesel Generators [TCDP EIR M-AQ-3]

All diesel generators shall have engines that (1) meet Tier 4 Final or Tier 4 Interim emission standards, or (2) meet Tier 2 emission standards and are equipped with a California Air Resources Board (ARB) Level 3 Verified Diesel Emissions Control Strategy (VDECS).

Implementation of Mitigation Measure M-AQ-4a would reduce emissions by 89 to 94 percent compared to equipment with engines that do not meet any emission standards and without a VDECS. Therefore, although the proposed project and project variants would add a new source of TACs within an area that already experiences poor air quality, implementation of Mitigation Measure M-AQ-4a would reduce this impact to a less-than-significant level.

Siting Sensitive Land Uses

The proposed project and its Public Parking Variant would include development of 186 residential units on the project site, while 109 on-site residential units would be developed under the Residential/Hotel Mixed Use Variant. Residential development is considered a sensitive land use for purposes of air quality evaluation. As discussed above, the project site is located in an area that experiences higher levels of air pollution. The proposed project and project variants therefore would have the potential to expose sensitive receptors to substantial concentrations of air pollutants resulting in a significant impact. TCDP EIR Mitigation Measure M-AQ-2: Implementation of Risk and Hazard Overlay Zone and Identification of Health Risk Reduction Policies would be applicable to the proposed project and project variants. That measure requires the project sponsor to install ventilation and filtration systems, with provisions for ongoing maintenance and disclosure to occupants of the project. Mitigation Measure M-AQ-4b: Air Filtration Measures would be consistent with TCDP area mitigation; the mitigation would require the project sponsor to install a filtered air supply system capable of removing 80 percent of outdoor particulates indoors.

Mitigation Measure M-AQ-4b: Air Filtration Measures [TCDP EIR M-AQ-2]

Air Filtration and Ventilation Requirements for Sensitive Land Uses. Prior to receipt of any building permit, the project sponsor shall submit a ventilation plan for the proposed building(s). The ventilation plan shall show that the building ventilation system removes at least 80 percent of the outdoor $PM_{2.5}$ concentrations from habitable areas and be designed by an engineer certified by ASHRAE [the American Society of Heating, Refrigeration and Air Conditioning Engineers], who shall provide a written report documenting that the system meets the 80 percent performance standard identified in this measure and offers the best available technology to minimize outdoor to indoor transmission of air pollution.

Maintenance Plan. Prior to receipt of any building permit, the project sponsor shall present a plan that ensures ongoing maintenance for the ventilation and filtration systems.

Disclosure to buyers and renters. The project sponsor shall also ensure the disclosure to buyers (and renters) that the building is located in an area with existing sources of air pollution and as such, the building includes an air filtration and ventilation system designed to remove 80 percent of outdoor particulate matter and shall inform occupants of the proper use of the installed air filtration system.

With implementation of Mitigation Measure M-AQ-4b, the proposed project and its variants would result in a less-than-significant impact with respect to exposing sensitive receptors to substantial levels of air pollution.

Impact AQ-5: Construction and operation of the proposed project and project variants would not conflict with, or obstruct implementation of, the *Bay Area 2010 Clean Air Plan,* the applicable air quality plan. (*Less than Significant*)

The most recently adopted air quality plan for the SFBAAB is the *Bay Area 2010 Clean Air Plan* (*2010 CAP*). The *2010 CAP* is a road map showing how the San Francisco Bay Area will achieve compliance with the State ozone standards as expeditiously as practicable and how the region will reduce transport of ozone and ozone precursors to neighboring air basins. In determining consistency with the *2010 CAP*, this analysis considers whether the project would (1) support the primary goals of the *2010 CAP*, (2) include applicable control measures from the *2010 CAP*, and (3) avoid disrupting or hindering implementation of control measures identified in the *2010 CAP*.

The primary goals of the *2010 CAP* are to attain air quality standards, reduce pollutant exposure and protect public health, and reduce greenhouse gas (GHG) emissions. Project GHG emissions are discussed in the Initial Study, pp. 62-80 (see Appendix A). This discussion demonstrates that the proposed project and project variants would comply with the applicable provisions of the City's Greenhouse Gas Reduction Strategy.

The proposed project and project variants would be high-density, mixed-use infill developments in a transit-oriented area that would intensify the density of land uses on the site. Development of the proposed project and project variants would generate emissions during construction (see Table 4.G.5, p. 4.G.29) and would cause an increase in emissions from mobile sources due to motor vehicle trips and from other sources (area sources and the proposed stationary sources) during the operation of the project (see Table 4.G.7, p. 4.G.34); as shown above, the emission increases would not exceed the applicable significance thresholds.

The analysis above illustrates that neither construction nor operation of the proposed project and its variants would contribute substantial levels of pollutant emissions, and that project- or variant-related emissions would not be likely to impede attainment of the air quality standards. As the proposed project and project variants would not result in substantial, long-term increases in criteria air pollutants, the proposed project and its variants would support the primary goal of the *2010 CAP* to attain the air quality standards.

Project sources could increase exposure of sensitive receptors to pollutants that increase public health risks. Diesel-powered construction equipment emissions would increase exposure of sensitive receptors to TACs temporarily during construction, but Mitigation Measure M-AQ-4a, p. 4.G.36, would reduce these emissions to the maximum extent feasible and would reduce the impact to be less than significant with mitigation. The incremental exposure of receptors to TACs during operation would be due to the presence of existing sources, new stationary sources (the proposed back-up generator and natural-gas-fired mechanical systems and boilers), area sources, and mobile sources, but these sources would not expose receptors to substantial pollutant concentrations. As the proposed project and project variants would not expose receptors to substantial pollutant concentrations, the proposed project and its variants would support the primary goal of the *2010 CAP* to reduce pollutant exposure and protect public health.

In summary, as the proposed project and its variants would not result in substantial, long-term increases in criteria air pollutants, TAC, or GHG emissions, the proposed project and its variants would be considered to support the primary goals of the *2010 CAP*.

To meet the primary goals, the *2010 CAP* recommends specific control measures and actions. These control measures are grouped into various categories and include stationary and area source measures, mobile source measures, transportation control measures, land use measures, and energy and climate measures. The *2010 CAP* recognizes that to a great extent, community design dictates individual travel mode and that a key long-term control strategy to reduce emissions of criteria pollutants, air toxics, and GHGs from motor vehicles is to channel future Bay Area growth into vibrant urban communities where goods and services are close at hand, and people have a range of viable transportation options. To this end, the *2010 CAP* includes 55 control measures aimed at reducing air pollution in the SFBAAB.

The measures most applicable to the proposed project are transportation control measures and energy and climate control measures. The proposed project would be consistent with energy and climate control measures as discussed in the Initial Study, pp. 62-80 (see Appendix A). This discussion demonstrates that the proposed project and its variants would comply with the applicable provisions of the City's Greenhouse Gas Reduction Strategy.

The compact development of the proposed project and its variants and high availability of viable transportation options ensure that residents could bicycle, walk, and ride transit to and from the project site rather than using private automobiles. These options ensure that the proposed project and its variants would avoid substantial growth in automobile trips and vehicle miles traveled. The proposed project and its variants would be generally consistent with the *San Francisco General Plan,* as discussed in Chapter 3, Plans and Policies, pp. 3.2-3.5. Transportation control measures that are identified in the *2010 CAP* are implemented by the *San Francisco General Plan* and the Planning Code, for example, through the City's Transit First Policy, bicycle parking requirements, and transit impact development fees applicable to the proposed project and its variants. By complying with these applicable requirements, the proposed project and its variants would include relevant transportation control measures specified by the *2010 CAP*.

Examples of a project that could cause the disruption or delay of *2010 CAP* control measures are projects that would preclude the extension of a transit line or bike path, or projects that propose excessive parking beyond parking requirements. The proposed project and its variants would add residential, retail, and open space uses to a dense, walkable urban area near a concentration of regional and local transit service, services and other attractions. It would not preclude the extension of a transit line or a bike path or any other transit improvement, and as such, the proposed project and its variants would avoid disrupting or hindering implementation of control measures identified in the *2010 CAP*.

For the reasons described above, the proposed project and its variants would not interfere with implementation of the *2010 CAP*, and because the proposed project and its variants would be consistent with the air quality plan that shows how the region will improve ambient air quality and achieve the State and Federal ambient air quality standards, this impact would be less than significant. No mitigation measures are necessary.

CUMULATIVE IMPACT EVALUATION

Impact C-AQ-1: Construction and operation of the proposed project and project variants, in combination with past, present, and reasonably foreseeable future development in the project area, would contribute to cumulative air quality impacts. *(Less than Significant with Mitigation)*

As discussed above, regional air pollution is by its very nature largely a cumulative impact. Emissions from past, present, and future projects contribute to the region's adverse air quality on a cumulative basis. No single project by itself would be sufficient in size to result in regional nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative adverse air quality impacts.[55] The project-level thresholds for criteria air pollutants are based on levels by which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants. Therefore, because the proposed project's or project variants' construction (Impact AQ-1) and operational (Impact AQ-3) emissions would not exceed the project-level thresholds for criteria air pollutants, the proposed project and its variants would not be considered to result in a cumulatively considerable contribution to regional air quality impacts.

Although the proposed project and its variants would add a new residential land use and new sources of TACs (e.g., new vehicle trips and/or stationary sources) within an area of the City that is already adversely affected by poor air quality, the proposed project and project variants would include Mitigation Measure M-AQ-2, which could reduce construction period emissions by as much as 94 percent; Mitigation Measure M-AQ-4a, which requires best available control technology for the project's emergency back-up generator to reduce emissions by up to 94 percent; and Mitigation Measure M-AQ-4b, which requires that the building be designed to reduce outdoor infiltration of fine particulate matter indoors by 80 percent. Compliance with these mitigation measures would ensure that the proposed project's and project variants' contribution to cumulative air quality impacts would be not result in a cumulatively considerable contribution to significant cumulative air quality impacts.

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[55] BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, pp. 1, 27, and 37.

H. SHADOW

INTRODUCTION

As described in Appendix A, the Initial Study, p. 97, determined that the proposed project or project variants could result in potentially significant shadow impacts and that the topic of shadow would be analyzed in the EIR. Section H, Shadow, discusses the shadow impacts of the proposed project on open spaces and recreation facilities in the vicinity of the project site. The Environmental Setting discussion identifies existing public and private open spaces and recreation facilities, describes applicable government regulations related to shadow impacts, and describes existing shadows on existing public and private open spaces and recreation facilities. The Impacts discussion describes significance criteria for determining if shadow impacts are significant under CEQA and analyzes the shadow impacts of the proposed project. Cumulative effects of the proposed project, combined with past, present, and reasonably foreseeable future projects, are discussed. Background materials supporting the discussion of shadow impacts consist of shadow calculations and shadow diagrams that were prepared by CADP Associates (CADP).[1]

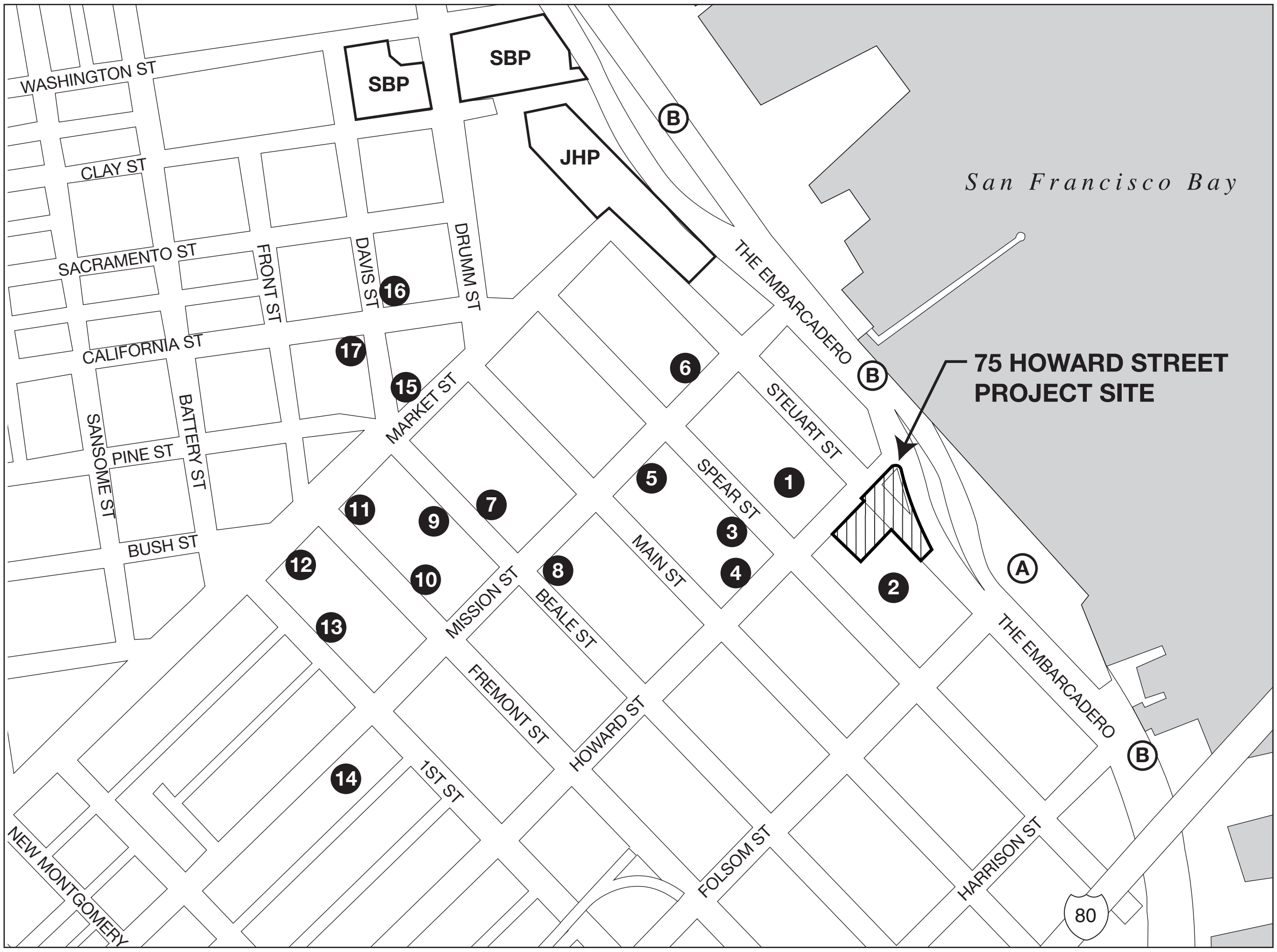
ENVIRONMENTAL SETTING

PUBLIC OPEN SPACES

There are a total of four public open spaces[2] that are potentially within reach of the proposed project's shadow (see Figure 4.H.1: Existing Public and Publicly Accessible Open Spaces within Reach of the Proposed Project's Shadow, on p. 4.H.2). Two of them, Sue Bierman Park and Justin Herman Plaza, are under the jurisdiction of the Recreation and Park Commission and are subject to the provisions of Planning Code Section 295. The other two, Rincon Park and the Embarcadero Promenade, are under the jurisdiction of other government agencies and are subject to the provisions of Planning Code Sections 146 and 147. These Planning Code regulations are discussed under "Regulatory Framework" on pp. 4.H.8-4.H.10.

1 CADP, Shadow Calculations and Diagrams, September 2012, February 2013, and May 2013. The shadow calculations and diagrams are available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2011.1122E.

2 Public open spaces are those that are owned by and/or under the jurisdiction of public agencies. Privately owned, publicly accessible open spaces (POPOs), which are discussed later in this section, are those that are under private ownership.



SOURCE: Turnstone Consulting

N
0 500
FEET

Recreation and Park Commission Properties

SBP Sue Bierman Park

JHP Justin Herman Plaza

Other Public Open Spaces

A Rincon Park

B The Embarcadero Promenade (Herb Caen Way)

Privately Owned Publicly Accessible Open Spaces

1 88 Howard Street (Rincon Center)
2 201 Spear Street
3 160 Spear Street
4 180 Howard Street
5 123 Mission Street
6 One Market Plaza
7 77 Beale Street
8 201 Mission Street
9 50 Beale Street
10 45 Fremont Street
11 333 Market Street
12 425 Market Street
13 50 Fremont Street
14 100 First Street
15 1 California Street
16 50 California Street
17 101 California Street

75 HOWARD STREET

FIGURE 4.H.1: EXISTING PUBLIC AND PUBLICLY ACCESSIBLE OPEN SPACES WITHIN REACH OF THE PROPOSED PROJECT'S SHADOW

Recreation and Park Commission Properties

Sue Bierman Park

Sue Bierman Park is an approximately 4-acre park that covers two city blocks. The eastern block (Assessor's Block 0202) of Sue Bierman Park is bounded by Washington Street on the north, The Embarcadero on the east, Clay Street and Justin Herman Plaza on the south, and Drumm Street on the west. Amenities include lawns, paved walkways, and seating areas.

The western block (Assessor's Block 0203) of Sue Bierman Park is bounded by Washington Street on the north, Drumm Street on the east, Clay Street on the south, and Davis Street on the west. The western block slopes upward from east to west, but the northern perimeter is at street grade and is generally flat. A network of walkways, stairs, and terraces meanders up the slope to a grove of trees. The western block has been densely planted with trees, and other amenities include lawns, paved walkways, and seating areas.

Prior to 2001, this park, which was formerly known as Embarcadero Plaza I and Ferry Park, consisted of the northern portion (Lot 018) of Assessor's Block 0202. The southern portion (Lots 006, 015, and 020) of Assessor's Block 0202 was occupied by a segment of the Clay Street on-ramp to the Embarcadero Freeway, which was demolished after the 1989 Loma Prieta earthquake. The State of California conveyed ownership of these parcels to the City and County of San Francisco in 1991. Jurisdiction over these lots was transferred by ordinance from the Department of Public Works to the Recreation and Park Department in May 2001, thus expanding the area of the park. Subsequently, the name of the park on Block 0202 was changed from Ferry Park to Sue Bierman Park.

Prior to 2001, Assessor's Block 0203 was not part of Sue Bierman Park. Assessor's Block 0203 was formerly part of the right-of-way occupied by the Clay Street on-ramp to the Embarcadero Freeway, which was demolished after the 1989 Loma Prieta earthquake. The State of California conveyed ownership of Lot 014 to the City and County of San Francisco in 1991. Jurisdiction over this parcel was transferred by ordinance from the Department of Public Works to the Recreation and Park Department in May 2001, thus further expanding Sue Bierman Park to its current size and configuration. The northeastern corner of this block (Lot 013) is not part of Sue Bierman Park. This parcel, which is occupied by a one-story building housing a wastewater pump station and a maintenance facility, is under the jurisdiction of the San Francisco Public Utilities Commission.

During the spring, Sue Bierman Park is currently shadowed by existing buildings for much of the day. In the morning (approximately 10:00 a.m.), the western block is almost completely shadowed, and the southwest corner of the eastern block is shadowed. At noon, approximately three-quarters of the western block is in shadow, and the western third of the eastern block is in shadow. In the afternoon (approximately 3:00 p.m.), the southern two-thirds of both blocks is shadowed. At the end of the day (one hour before sunset), both blocks are almost completely shadowed (see Figure 4.H.2: Existing and Project Shadow at 10:00 a.m. and Noon PDT on March 23 (September 20), and Figure 4.H.3: Existing and Project Shadow at 3:00 p.m. PDT on March 23 (September 20), on pp. 4.H.16 and 4.H.17, respectively).[3]

During the summer, the park is mostly without shadows for much of the day. In the morning (approximately 10:00 a.m.), the southern perimeter of the western block is in shadow. At noon, the southern perimeter of the western block and the southwest corner of the eastern block are shadowed. In the afternoon (approximately 3:00 p.m.), the southeast corner of the eastern block is in shadow. As the day progresses, shadows on both blocks increase until both blocks are completely shadowed at the end of the day (see Figure 4.H.4: Existing and Project Shadow at 10:00 a.m. and Noon PDT on June 21, and Figure 4.H.5: Existing and Project Shadow at 3:00 p.m. PDT on June 21, on pp. 4.H.18 and 4.H.19, respectively).

During the autumn, the shadow patterns would be the same as the shadow patterns that occur during the spring.[4]

During the winter, the park is shadowed by existing buildings for much of the day. The shadows begin at sunrise and cover most of the western block and the southwest corner of the eastern block. At noon, the western block is almost completely shadowed, while approximately half of the eastern block is shadowed. By the end of the day, both blocks are completely shadowed (see Figures 4.H.6: Existing and Project Shadow at 10:00 a.m. and Noon PST on December 20, and Figure 4.H.7: Existing and Project Shadow at 3:00 p.m. PST on December 20, on pp. 4.H.20 and 4.H.21, respectively).

Justin Herman Plaza

Justin Herman Plaza is an approximately 161,679-square-foot hardscaped plaza on the west side of The Embarcadero across from the Ferry Building. It includes tables, chairs, and a water

[3] The times of day and the days of the year shown in the figures are representative samples of each season and are not the only times of day or days of the year when existing or net new project shadow would occur.

[4] The sun's position in the sky is symmetrical throughout the entire solar year. One half of the solar year begins on June 21 and ends on December 20, and the other half of the solar year begins on December 21 and ends on June 20. Each day in the first half of the solar year has an equivalent solar date in the second half of the solar year, with the spring and autumn equinoxes (March 20 or 21 and September 22 or 23, respectively) being equivalent solar dates. For this reason, the shadow patterns on March 23 would be the same as the shadow patterns on September 20, and separate figures for September 20 are not included.

sculpture known as the Vaillancourt Fountain. The plaza is suitable for passive recreation such as sitting and strolling, and it is often used for events such as concerts and rallies.

During the spring, summer, and autumn, the plaza is shadowed by existing buildings in the early morning and in the afternoon. The shadows begin at sunrise and recede as the day progresses, moving off the plaza at approximately 9:00 a.m. The shadows return at approximately 2:00 p.m. and remain until the end of the day. By the end of the day, almost the entire plaza is shadowed (see Figures 4.H.2 through 4.H.5, on pp. 4.H.16-4.H.19).

During the winter, the plaza is shadowed by existing buildings for much of the day. The shadows begin at approximately 9:00 a.m. and remain until the end of the day. By the end of the day, almost the entire plaza is shadowed (see Figures 4.H.6 and 4.H.7, on pp. 4.H.20 and 4.H.21, respectively).

Other Public Open Spaces

Of the four public open spaces that are potentially within reach of the proposed project's shadow, two are not under the jurisdiction of the Recreation and Park Commission. Rincon Park and the Embarcadero Promenade, both of which are approximately 300 feet east of the project site, are under the jurisdiction of the Successor Agency to the San Francisco Redevelopment Agency and the Port of San Francisco, respectively.

<u>Rincon Park</u>

Rincon Park is an approximately 2.7-acre (119,138-square-foot) park along the east side of The Embarcadero between Howard Street and Harrison Street. Rincon Park is bounded by The Embarcadero on the west and the San Francisco Bay on the east. The eastern portion of the park includes the section of the pedestrian promenade that runs along San Francisco Bay (the Embarcadero Promenade). The park is approximately two blocks long, and the central portion of the park is wider than either the northern or southern ends of the park. Most of the northern half of the park is landscaped with grass and small shrubs. The central portion of the park is occupied by an approximately 65-foot-tall sculpture of a bow and arrow known as "Cupid's Span," and there is a paved pedestrian path to the west of the sculpture that generally runs parallel to the Embarcadero Promenade. The southern half of the park includes a small amount of landscaping and a pair of two-story restaurant buildings. There are seating areas along the pedestrian promenade (the Embarcadero Promenade) and seating areas to the east and south of the sculpture. Rincon Park is used for active and passive recreation. Active recreation includes walking, running, cycling, rollerblading, and skateboarding, which occur primarily along the eastern perimeter of the park within the pedestrian promenade. Passive recreation includes sitting or lying down. Two field observations (one on a weekday and one on a weekend day, from early morning until mid-morning and from mid-day until early evening on each day), were conducted to assess the types of recreational activities that occur in Rincon Park. The data collected during those field observations are summarized and presented in Table 4.H.1: Recreational Use of Rincon Park by Activity, and Table 4.H.2: Recreational Use of Rincon Park by Location. The field observations are discussed in more detail under Impacts, on pp. 4.H.15-4.H.23.

Table 4.H.1: Recreational Use of Rincon Park by Activity

	Active Users[1]	Active Users as Percent of Total Users	Passive Users[2]	Passive Users as Percent of Total Users	Total Users
Weekday Sample	720	54.5%	600	45.5%	1,320
Weekend Sample	1,010	58.4%	720	41.6%	1,730

Notes:
[1] Active users include pedestrians, runners, cyclists, rollerbladers, and skateboarders.
[2] Passive users include people sitting or lying down in the park.
Source: Turnstone Consulting, April/May 2013

Table 4.H.2: Recreational Use of Rincon Park by Location

	Park Users on Pedestrian Promenade[1]	Park Users on Pedestrian Promenade as Percent of Total Users	Park Users at All Other Locations in Rincon Park[2]	Park Users at All Other Locations as Percent of Total Users	Total Users
Weekday Sample	670	50.8%	650	49.2%	1,320
Weekend Sample	925	53.5%	805	46.5%	1,730

Notes:
[1] Park users on the pedestrian promenade include both active and passive users.
[2] Park users at all other locations in Rincon Park include both active and passive users.
Source: Turnstone Consulting, April/May 2013

Throughout the year, Rincon Park is sunny from the morning until the early afternoon. Depending on the time of year, Rincon Park is shadowed by existing buildings to the northwest, west, and southwest from the early to mid-afternoon until the end of the day (see Figures 4.H.2 through 4.H.7, on pp. 4.H.16-4.H.21). In general, the existing afternoon shadows begin later during the summer (after approximately 4:30 p.m.) and earlier during the winter (after approximately 12:30 p.m.).

The Embarcadero Promenade

The Embarcadero Promenade is a waterfront pedestrian promenade that runs along the east side of The Embarcadero. It is over 3 miles long and extends from Fisherman's Wharf to China Basin. The Embarcadero Promenade is identified as an "Open Space and Public Access" site in the *Waterfront Land Use Plan* and the Waterfront Design and Access Element of that plan.[5] It is a public open space resource that functions both as a pedestrian corridor and as a waterfront open space destination, attracting downtown office workers, tourists, and residents. There are public art installations and seating areas at various locations along the Embarcadero Promenade.

During the spring, summer, and autumn, various portions of the promenade near the project site are shadowed by existing buildings in the early morning and in the late afternoon. The shadows begin at sunrise and recede as the day progresses, moving off the promenade at approximately 10:00 a.m. The shadows return in the late afternoon (at approximately 4:00 p.m. during the spring and autumn and at approximately 5:00 p.m. during the summer) and remain until the end of the day (see Figures 4.H.2 through 4.H.5, on pp. 4.H.16-4.H.19).

During the winter, the promenade is shadowed by existing buildings for much of the day. The shadows begin at sunrise and recede as the day progresses, moving off the promenade at approximately 10:00 a.m. The shadows return around noon and remain until the end of the day (see Figures 4.H.6 and 4.H.7, on pp. 4.H.20 and 4.H.21, respectively).

Privately Owned, Publicly Accessible Open Spaces

There are a number of privately owned, publicly accessible open spaces (POPOs) potentially within reach of the proposed project's shadow. These POPOs are at 50 Beale Street, 77 Beale Street, 1 California Street, 50 California Street, 101 California Street, 50 Fremont Street, 88 Howard Street, 180 Howard Street, 135 Main Street, One Market Plaza, 425 Market Street, 123 Mission Street, 201 Mission Street, 160 Spear Street, and 201 Spear Street. Some of these POPOs are at street level, and some are elevated spaces on building podiums or roofs. These POPOs are located between densely developed high-rise buildings, and many of these POPOs are already shadowed by existing buildings for much of the day throughout the year.

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[5] The Port of San Francisco, *Waterfront Land Use Plan*, June 2004; *Waterfront Design and Access*, June 2004.

REGULATORY FRAMEWORK

SAN FRANCISCO GENERAL PLAN

Chapter 3, Plans and Policies, discusses the shadow-related regulatory framework relevant to the proposed project, including objectives and policies in the *Downtown Area Plan* and the *Transit Center District Plan*, both of which are area plans of the *San Francisco General Plan*, and the Priority Policies of Planning Code Section 101.1. Additional Planning Code provisions related to shadow are discussed in more detail below.

SAN FRANCISCO PLANNING CODE

Section 295

In 1984, San Francisco voters approved an initiative known as “Proposition K, The Sunlight Ordinance,” which was codified in 1985 as Planning Code Section 295. 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, with 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 adopting criteria for determination of significant shadows in 14 downtown parks, as described in a February 3, 1989, memorandum to the Planning Commission and the Recreation and Park Commission regarding “Proposition K, The Sunlight Ordinance.” These criteria establish an “absolute cumulative limit” (ACL) for new shadow allowed on these parks, as well as qualitative criteria for allocating the ACL among individual development projects. The ACL for a particular park is expressed as a percentage of the theoretical annual available sunlight (TAAS) on that park. The difference between the ACL and the amount of existing shadow on a particular park is commonly referred to as the “shadow budget” for that park. The shadow budget is then allocated to individual projects within the ACL based on qualitative criteria established for each park, which vary by park but may include factors such as the time of day, the time of year, shadow characteristics (size, duration, location), and the public good served by the building casting the shadow.

<u>Sue Bierman Park</u>

In 1989, when Sue Bierman Park consisted of the northern portion of Assessor’s Block 0202, the Planning Commission and the Recreation and Park Commission established an ACL of zero percent pursuant to Planning Code Section 295, meaning that no net new shadow from proposed buildings exceeding 40 feet in height could be cast on the park. ACLs were never adopted for the southern portion of Assessor's Block 0202 or for Assessor's Block 0203. No ACL has been adopted for Sue Bierman Park in its current size and configuration.

Justin Herman Plaza

In 1989, the Planning Commission and the Recreation and Park Commission established an ACL of 0.1 percent of the TAAS for Justin Herman Plaza, meaning that some net new shadow from proposed buildings exceeding 40 feet in height could be cast on Justin Herman Plaza until the ACL is reached. After the construction of the Hotel Vitale at 110 The Embarcadero, the remaining shadow budget for Justin Herman Plaza was reduced to 0.007 percent of the TAAS. During a joint public hearing on October 11, 2012, the Planning Commission and the Recreation and Park Commission increased the ACLs for seven downtown parks (Boeddeker Park, Justin Herman Plaza, Maritime Plaza, Portsmouth Square, St. Mary's Square, Union Square, and Willie "Woo Woo" Wong Playground) to allow for shadow cast by development projects that meet the criteria set forth in the *Transit Center District Plan*. As part of these actions, the ACL for Justin Herman Plaza was increased from 0.007 percent of the TAAS to 0.090 percent of the TAAS.[6]

Section 146

Planning Code Section 146 regulates shadow impacts on public sidewalks in certain downtown areas during critical periods of use. Pursuant to Section 146(a), new structures and additions to existing structures in C-3 Districts shall be required to avoid penetration of a sun access plane defined by an angle sloping away from the street above a stipulated height at the property line abutting the street. The streets designated in Table 146 are subject to the provisions of Section 146(a). Since Howard Street and Steuart Street, which abut the project site, are not designated in Table 146, the provisions of Section 146(a) are not applicable to the proposed project.

Pursuant to Section 146(c), new buildings and additions to existing buildings in C-3 Districts shall be shaped, if it can be done without creating an unattractive design and without unduly restricting the development potential of the project site, to reduce substantial shadow impacts on public sidewalks other than those protected by Section 146(a). Section 146(c) is applicable to the proposed project.

6 San Francisco Planning Commission Resolution No. 18717 and San Francisco Recreation and Park Commission Resolution No. 1210-001, adopted on October 11, 2012. These documents are available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2011.1122E.

Section 147

Planning Code Section 147 regulates shadow impacts on public or publicly accessible open spaces in C-3 Districts that are not already regulated under Planning Code Section 295. New buildings in C-3 Districts that are over 50 feet tall must be shaped, consistent with the dictates of good design and without unduly restricting the development potential of the project site, to reduce substantial shadow impacts on these public or publicly accessible open spaces. In determining shadow impacts under Section 147, the following factors must be taken into account: the amount of area shadowed, the duration of the shadow, and the importance of sunlight to the type of open space being shadowed.

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 adopted and modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable threshold was used to determine whether implementing the project would result in a significant shadow impact. Implementation of the proposed project and project variants would have a significant shadow effect if the project would:

H.1. 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 Planning Code Section 295 are different. Under Planning Code Section 295 and the joint Planning Commission and Recreation and Park Commission criteria, any shadow beyond the absolute cumulative limit is considered “significant” in the way that term is used in Planning Code Section 295. In contrast, the significance threshold for environmental review addresses a broader array of shadow-related considerations that may include not only quantitative criteria, but also open space usage; time of day and/or time of year; physical layout and facilities affected; the intensity, size, shape, and location of the shadow; and the 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, then the impact is “significant” in the way that term is used under CEQA. As a result, there are situations under which new shadow that would be considered significant under Planning Code Section 295 would not have a significant environmental impact under CEQA. There are also situations under which new shadow that would be considered a significant environmental impact under CEQA would not be considered significant under Planning Code Section 295.

APPROACH TO ANALYSIS

Shadow Fan

In order to determine whether any properties under the jurisdiction of the Recreation and Park Commission could be potentially affected by project shadow, the Planning Department prepared a "shadow fan" diagram. The shadow fan plots the maximum potential reach of project shadow over the course of a year (from one hour after sunrise until one hour before sunset on each day of the year) and plots the locations of nearby open spaces, recreation facilities, and parks. The shadow fan accounts for topographical changes but it does not account for existing shadows cast by existing buildings. The shadow fan is used by the Planning Department as the basis for initially identifying which open spaces, recreation facilities, and parks merit further study. Those that are outside the maximum potential reach of project shadow do not require further study.[7]

In addition, CADP prepared a shadow fan similar to the shadow fan prepared by the Planning Department. The shadow fan prepared by CADP accounts for topographical changes, but it does not account for existing shadows cast by existing buildings.[8]

Shadow Calculations and Shadow Diagrams

Using a computer program that accounts for the heights of existing and proposed buildings as well as topographical data, CADP prepared shadow calculations for three of the open spaces (Justin Herman Plaza, Sue Bierman Park, and Rincon Park) that could potentially be shadowed by the proposed project. Fog, rain, and shadows from trees, existing or proposed, are not taken into account.

Shadow diagrams are "snapshots" taken at particular representative times of day and days of the year. They illustrate the extent and location of shadows cast by existing buildings, net new shadow from a proposed development project, and the remaining sunlight on the subject open space. A series of shadow diagrams from the same day demonstrates how the shadow moves across the space over a specific period of time. Shadow diagrams are presented in this section and serve as the basis for the qualitative discussion of shadow impacts.

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7 The Planning Department shadow fan for the proposed project, dated March 2012, is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2011.1122E.

8 The CADP shadow fan for the proposed project, dated September 2012, is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2011.1122E.

PROJECT FEATURES

The proposed project consists of the construction of a new 31-story, 348-foot-tall, residential high-rise tower. As part of the proposed project, an approximately 4,780-square-foot publicly accessible open space would be developed on the open space improvement site on the east side of Steuart Street across from the project site. In addition, the proposed project includes a request to reclassify the height limit for the project site from 200 feet to 350 feet. The proposed project has the potential to cast net new shadow on existing open spaces and parks in the project vicinity as well as the proposed publicly accessible open space.

The proposed project also includes two variants as options that the project sponsor may choose to implement. The height and bulk/massing of the variants would be the same as height and bulk/massing of the proposed project, so the shadow impacts of the variants would be the same as the shadow impacts of the proposed project.

IMPACT EVALUATION

The shadow fan prepared by the Planning Department showed that shadow from the proposed project and variants could reach Sue Bierman Park and Justin Herman Plaza, both of which are under the jurisdiction of the Recreation and Park Commission and subject to the provisions of Planning Code Section 295. The potential shadow impacts of the proposed project or variants on these open spaces are discussed.

The shadow fan prepared by the Planning Department showed that shadow from the proposed project and variants could reach Rincon Park and a 3-block-long segment of the Embarcadero Promenade between Mission Street and Harrison Street. These public open spaces are not under the jurisdiction of the Recreation and Park Commission or subject to the provisions of Planning Code Section 295. However, for the purposes of this CEQA analysis, the potential shadow impacts of the proposed project or variants on these open spaces are discussed.

POPOs and public sidewalks are not under the jurisdiction of the Recreation and Park Commission or subject to the provisions of Planning Code Section 295. However, for the purposes of this CEQA analysis, the potential shadow impacts of the proposed project or variants on POPOs and public sidewalks are discussed.

Impact WS-1: The proposed project or variants would create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas. (*Significant and Unavoidable*)

Recreation and Park Commission Properties

Sue Bierman Park

An initial shadow fan indicated that shadow from the proposed project or variants could reach the western block of Sue Bierman Park; however, this initial shadow fan did not account for existing buildings. A more detailed shadow analysis, which included computer-generated shadow calculations, determined that the proposed project or variants would not cast net new shadow on the park at any time during the year.[9] Shadow from the proposed project or variants would be blocked by intervening buildings or masked by existing shadows cast by other buildings. Thus, the proposed project or variants would comply with the provisions of Planning Code Section 295 and would have no shadow impact on Sue Bierman Park.

Justin Herman Plaza

The Planning Department shadow fan indicated that shadow from the proposed project or variants could reach the southern portion of Justin Herman Plaza; however, the shadow fan does not account for existing buildings, and the shadow calculations prepared by CADP indicate that the proposed project or variants would not cast net new shadow on the park at any time during the year.[10] Shadow from the proposed project or variants would be masked by existing shadows cast by other buildings. Thus, the proposed project or variants would comply with the provisions of Planning Code Section 295 and would have no shadow impact on Justin Herman Plaza.

Other Public Open Spaces

The following discussion describes the shadow impacts of the proposed project or variants on public open spaces that are not under the jurisdiction of the Recreation and Park Commission. The discussion focuses on four representative days of the year (one day for each season). Shadow would occur on other days throughout the year in addition to the four days discussed below.

[9] CADP, Shadow calculations for Sue Bierman Park, September 2012.
[10] CADP, Shadow calculations for Justin Herman Plaza, February 2013.

Rincon Park

Rincon Park, which includes the portion of the Embarcadero Promenade adjacent to the park, receives about 443,361,753 square-foot-hours (sfh)[11] of TAAS. Approximately 38,552,842 sfh (about 8.7 percent) of the TAAS are used up by shadows from existing buildings. The proposed project or variants would cast about 9,715,526 sfh of net new shadow per year on the park. With implementation of the proposed project or variants, the shadow load on Rincon Park would increase from approximately 38,552,842 sfh per year to approximately 48,268,368 sfh per year, an increase of about 25 percent over the existing shadow.

The 9,715,526 sfh of net new shadow is about 2.2 percent of the TAAS for Rincon Park. Expressed as a percentage of the TAAS for Rincon Park, the shadow on the park would increase from about 8.7 percent to about 10.9 percent with implementation of the proposed project or variants.

The net new project or variant shadow on Rincon Park would occur to a varying extent on most days throughout the year. In general, the net new project or variant shadow would begin later in the day during the summer (after approximately 4:00 p.m.) and earlier in the day during the winter (after approximately 2:00 p.m.).[12]

In terms of the area (square footage) of Rincon Park that would be affected, the maximum net new project or variant shadow would occur on June 21. At approximately 6:30 p.m. on June 21, the net new project or variant shadow would cover an area of about 36,359 square feet (see Figure 4.H.8: Maximum Net New Project Shadow on Rincon Park at 6:30 p.m. PDT on June 21, on p. 4.H.22).

On March 23, the net new project or variant shadow on Rincon Park would begin at approximately 3:00 p.m. and last until approximately 5:45 p.m. From approximately 5:45 p.m. until the end of the day[13] at approximately 6:09 p.m., the project or variant shadow would be obscured by shadows cast by existing buildings (see Figures 4.H.2 and 4.H.3, on pp. 4.H.16 and 4.H.17, respectively). The net new project or variant shadow would extend across the full width of Rincon Park at the northern edge of the park. As the afternoon progresses, the shadow would move slightly south while continuing to extend across the full width of the park near the northern end of the park. The net new project or variant shadow would fall on the landscaping,

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11 Sunlight and shadow are measured in units known as square-foot-hours (sfh), which are calculated by multiplying the area that is in sunlight or shadow (in square feet) by the amount of time that the sunlight or shadow is present (in hours).

12 CADP, Shadow diagrams, May 2013.

13 Under the shadow analysis methodology established by the Planning Department, the end of the day occurs at one hour before sunset.

the northern end of the pedestrian path adjacent to and west of the sculpture, and two seating areas near the northern end of the park. The proposed project or variants would not cast net new shadow on the central or southern portions of the park.

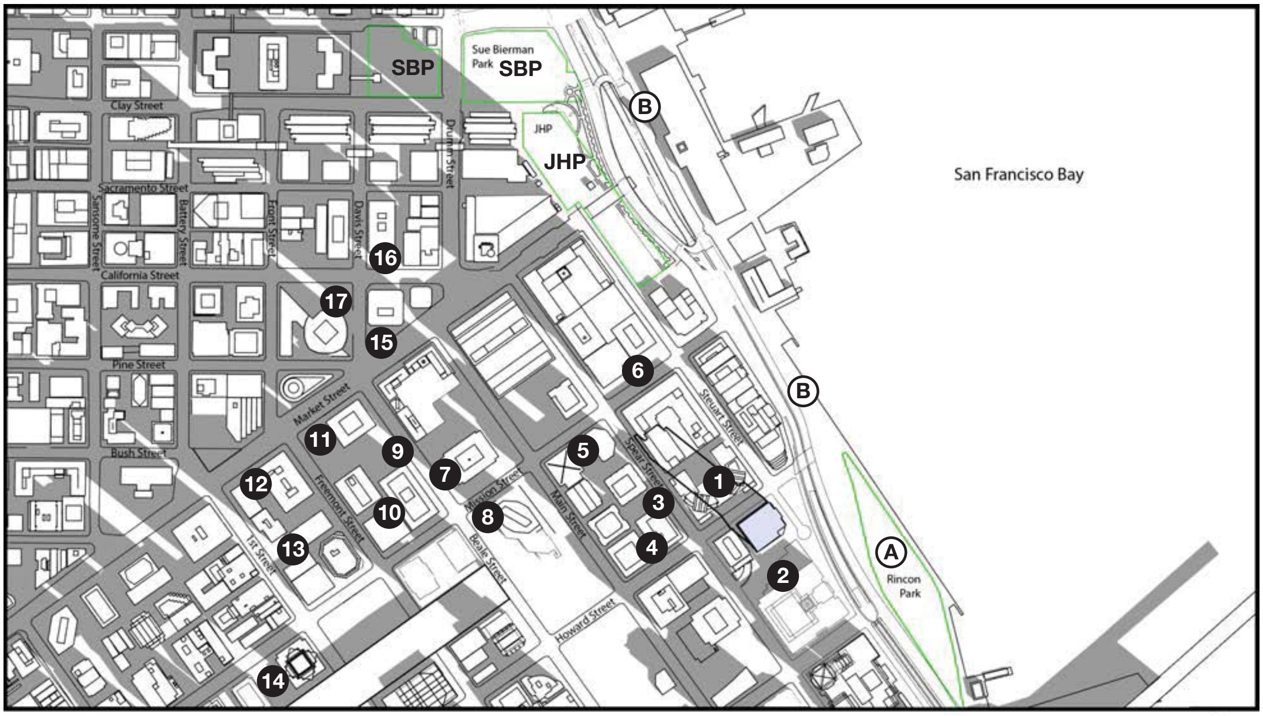
On June 21, the net new project or variant shadow on Rincon Park would begin at approximately 4:30 p.m. and last until approximately 7:15 p.m. From approximately 7:15 p.m. until the end of the day at approximately 7:36 p.m., the project or variant shadow would be obscured by shadows cast by existing buildings (see Figures 4.H.4 and 4.H.5, on pp. 4.H.18 and 4.H.19, respectively). The net new project or variant shadow would begin on the west side of the park, near the northern end of the park, and extend southeast across the park as the afternoon progresses. Shortly before 6:00 p.m., the net new project or variant shadow would extend across the full width of the central portion of Rincon Park. The net new project or variant shadow would fall on the landscaping, the pedestrian path adjacent to and west of the sculpture, the seating areas east of the sculpture, the seating areas and the pedestrian path along the eastern perimeter of the park, and the landscaped area adjacent to the northernmost of the two restaurants.

The shadow patterns that would occur on September 20 would be the same as the shadow patterns that would occur on March 23 (see discussion above).

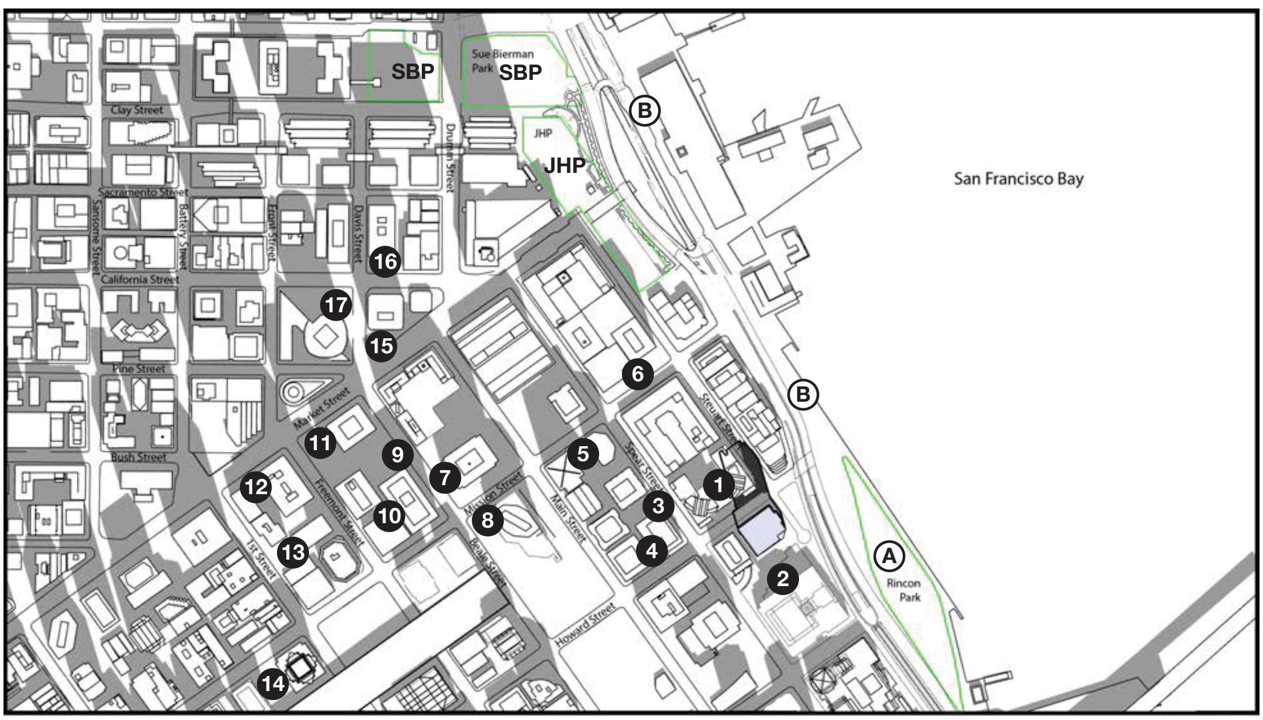
On December 20, the net new project or variant shadow on Rincon Park would begin at approximately 3:45 p.m. and last until the end of the day at approximately 3:54 p.m. (see Figures 4.H.6 and 4.H.7, on pp. 4.H.20 and 4.H.21, respectively). The net new project or variant shadow would extend across the full width of Rincon Park at the northern tip of the park. The net new project shadow would fall on the northernmost seating area. The proposed project or variants would not cast net new shadow on the central or southern portion of the park.

Excluding the pedestrian promenade along its eastern perimeter, Rincon Park is used primarily for passive recreation such as sitting and lying down. The pedestrian promenade along the eastern perimeter of the park is used for active recreation such as walking, running, cycling, rollerblading, and skateboarding. As discussed below, the use of Rincon Park was surveyed on two different days, one during the week and one during the weekend.

The weekday survey recorded a total of about 1,320 people in the park, with the highest number of pedestrians (about 71) being observed at 1:30 p.m. and the highest number of people sitting or lying down in the park (about 102) being observed at12:30 p.m. More people were observed



10:00 A.M.



Noon

SOURCE: CADP Associates

75 HOWARD STREET

FIGURE 4.H.2: EXISTING AND PROJECT SHADOW AT 10:00 A.M. AND NOON PDT ON MARCH 23 (SEPTEMBER 20)

3:00 P.M.

Recreation and Park Commission Properties

SBP Sue Bierman Park

JHP Justin Herman Plaza

Other Public Open Spaces

A Rincon Park

B The Embarcadero Promenade (Herb Caen Way)

Existing Shadows

Net New Project Shadow

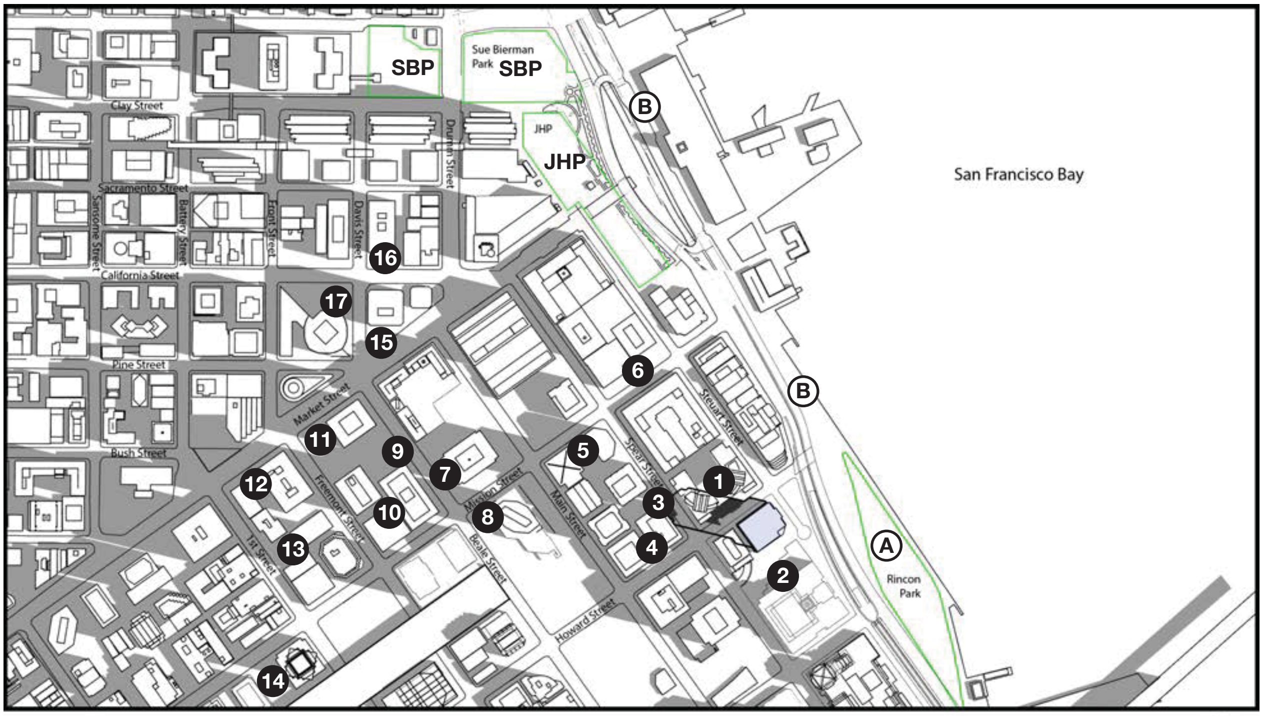
Privately Owned Publicly Accessible Open Spaces

1 88 Howard Street (Rincon Center)
2 201 Spear Street
3 160 Spear Street
4 180 Howard Street
5 123 Mission Street
6 One Market Plaza
7 77 Beale Street
8 201 Mission Street
9 50 Beale Street
10 45 Fremont Street
11 333 Market Street
12 425 Market Street
13 50 Fremont Street
14 100 First Street
15 1 California Street
16 50 California Street
17 101 California Street

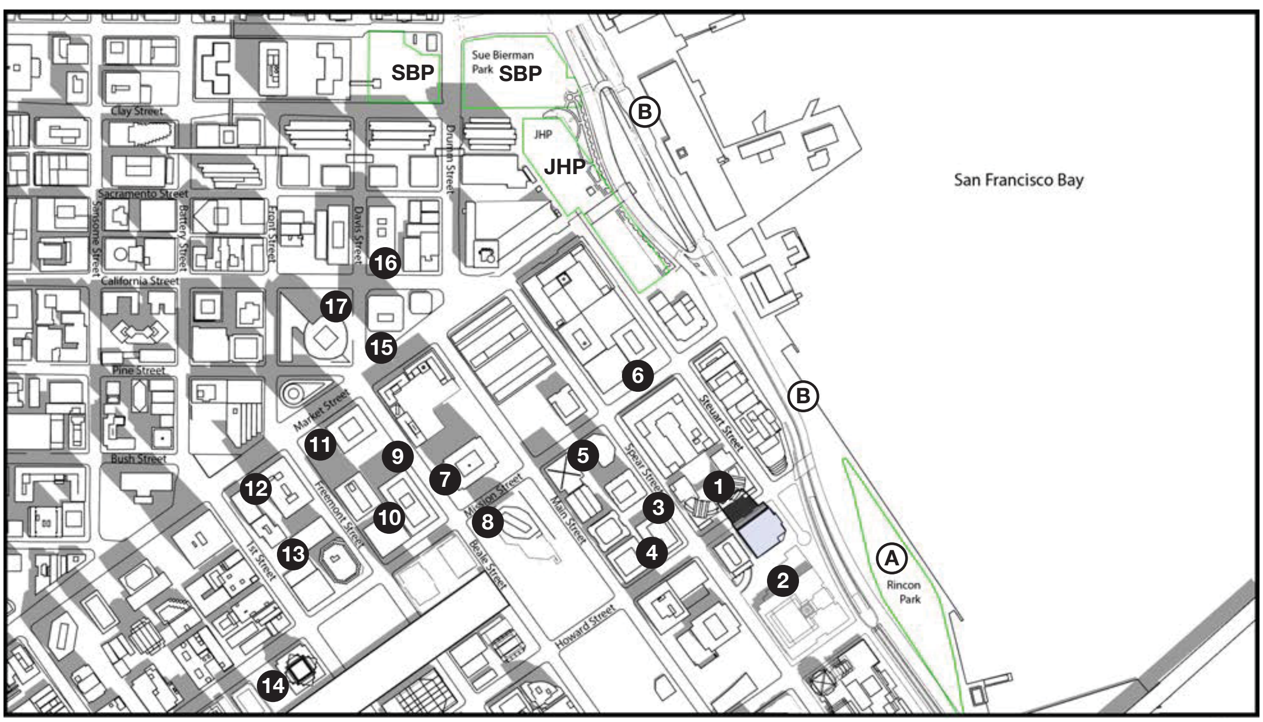
SOURCE: CADP Associates

75 HOWARD STREET

FIGURE 4.H.3: EXISTING AND PROJECT SHADOW AT 3:00 P.M. PDT ON MARCH 23 (SEPTEMBER 20)



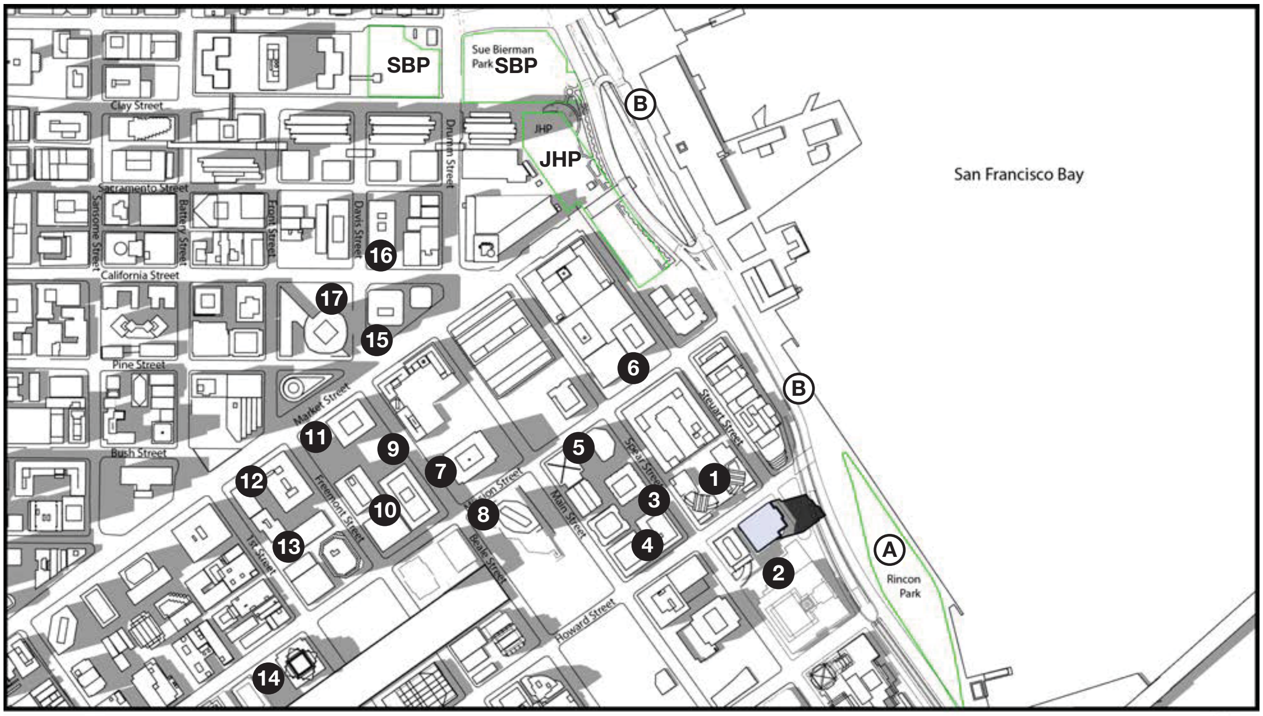
10:00 A.M.



Noon

SOURCE: CADP Associates

FIGURE 4.H.4: EXISTING AND PROJECT SHADOW AT 10:00 A.M. AND NOON PDT ON JUNE 21



3:00 P.M.

Recreation and Park Commission Properties

SBP Sue Bierman Park

JHP Justin Herman Plaza

Other Public Open Spaces

A Rincon Park

B The Embarcadero Promenade (Herb Caen Way)

Existing Shadows

Net New Project Shadow

Privately Owned Publicly Accessible Open Spaces

1 88 Howard Street (Rincon Center)
2 201 Spear Street
3 160 Spear Street
4 180 Howard Street
5 123 Mission Street
6 One Market Plaza
7 77 Beale Street
8 201 Mission Street
9 50 Beale Street
10 45 Fremont Street
11 333 Market Street
12 425 Market Street
13 50 Fremont Street
14 100 First Street
15 1 California Street
16 50 California Street
17 101 California Street

SOURCE: CADP Associates

75 HOWARD STREET

FIGURE 4.H.5: EXISTING AND PROJECT SHADOW AT 3:00 P.M. PDT ON JUNE 21

10:00 A.M.

Noon

SOURCE: CADP Associates

75 HOWARD STREET

FIGURE 4.H.6: EXISTING AND PROJECT SHADOW AT 10:00 A.M. AND NOON PST ON DECEMBER 20

3:00 P.M.

Recreation and Park Commission Properties

SBP Sue Bierman Park

JHP Justin Herman Plaza

Other Public Open Spaces

A Rincon Park

B The Embarcadero Promenade (Herb Caen Way)

Existing Shadows

Net New Project Shadow

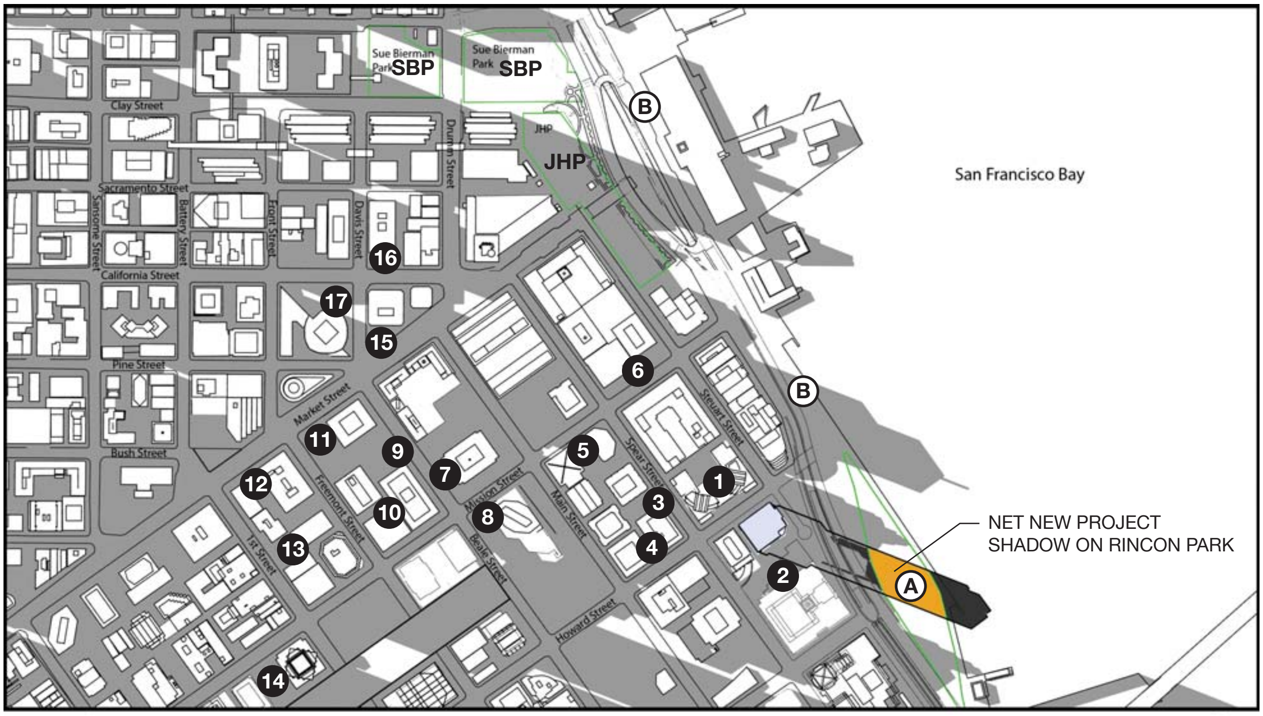
Privately Owned Publicly Accessible Open Spaces

1 88 Howard Street (Rincon Center)
2 201 Spear Street
3 160 Spear Street
4 180 Howard Street
5 123 Mission Street
6 One Market Plaza
7 77 Beale Street
8 201 Mission Street
9 50 Beale Street
10 45 Fremont Street
11 333 Market Street
12 425 Market Street
13 50 Fremont Street
14 100 First Street
15 1 California Street
16 50 California Street
17 101 California Street

SOURCE: CADP Associates

75 HOWARD STREET

FIGURE 4.H.7: EXISTING AND PROJECT SHADOW AT 3:00 P.M. PST ON DECEMBER 20



6:30 P.M.

Recreation and Park Commission Properties

SBP Sue Bierman Park

JHP Justin Herman Plaza

Other Public Open Spaces

A Rincon Park

B The Embarcadero Promenade (Herb Caen Way)

Existing Shadows

Net New Project Shadow

Privately Owned Publicly Accessible Open Spaces

1 88 Howard Street (Rincon Center)
2 201 Spear Street
3 160 Spear Street
4 180 Howard Street
5 123 Mission Street
6 One Market Plaza
7 77 Beale Street
8 201 Mission Street
9 50 Beale Street
10 45 Fremont Street
11 333 Market Street
12 425 Market Street
13 50 Fremont Street
14 100 First Street
15 1 California Street
16 50 California Street
17 101 California Street

SOURCE: CADP Associates

75 HOWARD STREET

FIGURE 4.H.8: MAXIMUM NET NEW PROJECT SHADOW ON RINCON PARK AT 6:30 P.M. PDT ON JUNE 21

along the eastern perimeter of the park (about 670) than in other areas of the park (about 650).[14] On a typical weekday, the park is lightly to moderately used from 8:00 a.m. until 10:00 a.m. by pedestrians, cyclists, rollerbladers, and runners (about 135 people, or 68 people per hour, were observed in the park during a survey). The park experiences its heaviest use from noon until 2:00 p.m., with most users being pedestrians and people sitting in the park (about 570 people, or 285 people per hour, were observed in the park). From 2:30 p.m. until approximately 6:30 p.m. (the end of the day), the park experiences moderate to heavy use, with most users being pedestrians and people sitting in the park (about 620 people, or 155 people per hour, were observed in the park). Pedestrians and other active users of the park, such as runners and joggers, experience areas of both sunlight and shadow as they move through the park. Of the people sitting in the park, most appear to prefer to sit in areas of sunlight.

The weekend survey recorded a total of about 1,730 people in the park, with the highest number of pedestrians (about 76) being observed at 3:30 p.m. and 4:30 p.m. and the highest number of people sitting or lying down in the park (about 86) being observed at 5:00 p.m. More people were observed along the eastern perimeter of the park (about 925) than in other areas of the park (about 805).[15] On a typical weekend day, the park is lightly to moderately used from 8:00 a.m. until 10:00 a.m. by pedestrians, cyclists, rollerbladers, and runners (about 245 people, or 123 people per hour, were observed in the park during a survey). From noon until approximately 6:30 p.m. (the end of the day), the park is more heavily used than in the morning by both pedestrians and people sitting in the park (about 1,485 people, or 228 people per hour, were observed in the park). Of the people sitting in the park, most appear to prefer to sit in areas of sunlight.

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[14] A field observation was conducted on Tuesday, April 30, 2013. The field observation included Rincon Park and the portion of the Embarcadero Promenade adjacent to the park. At 30-minute intervals from 8:00 a.m. until 10:00 a.m. and from noon until 6:30 p.m., the people in the park were counted and categorized by activity. From 8:00 a.m. until 10:00 a.m., about 135 people were observed in the park (about 75 people walking, about 35 engaged in active recreation, and about 25 sitting down). From noon until 2:00 p.m., about 570 people were observed in the park (about 265 people walking, about 10 engaged in active recreation, and about 295 sitting down). From 2:30 p.m. until 6:30 p.m., about 620 people were observed in the park (about 305 people walking, about 30 engaged in active recreation, and about 285 sitting down). The data from this field observation are available for review at the Planning Department, 1650 Mission Street, Suite 400, as part of Case File No. 2011.1122E.

[15] A field observation was conducted on Saturday, May 4, 2013. The field observation included Rincon Park and the portion of the Embarcadero Promenade adjacent to the park. At 30-minute intervals from 8:00 a.m. until 10:00 a.m. and from noon until 6:30 p.m., the people in the park were counted and categorized by activity. From 8:00 a.m. until 10:00 a.m., about 245 people were observed in the park (about 165 people walking, about 15 engaged in active recreation, and about 65 sitting down). From noon until 6:30 p.m., about 1,485 people were observed in the park (about 740 people walking, about 90 engaged in active recreation, and about 655 sitting down). The data from this field observation are available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, as part of Case File No. 2011.1122E.

The net new project or variant shadow would fall on many of the seating areas in the park in the afternoon on most days throughout the year. As discussed above, the afternoon is a period of moderate to heavy park use during the week and heavy use on the weekends. As noted above, Rincon Park is used for passive and active recreation. Pedestrians and other active users such as joggers and runners, as in other areas of the City, move between areas of sunlight and shadow. The net new project or variant shadow on sunlit areas of the park would adversely affect the use of these areas by persons sitting or lying down within these areas. With implementation of the proposed project, Rincon Park would continue to receive about seven to nine hours of sunlight a day during the spring, summer, and autumn, and about five to seven hours of sunlight a day during the winter.

In summary, the proposed project or variants would cast net new shadow on the northern and central portions of Rincon Park in the afternoon on most days throughout the year. The affected areas include landscaping (the grassy lawn area), the pedestrian path adjacent to and west of the sculpture, the seating areas and the pedestrian path along the eastern perimeter of the park, and the seating areas east of the sculpture. Although the proposed project or variants would not cast net new shadow on Rincon Park in the morning or at mid-day, it would cast about 9,715,526 sfh of annual net new shadow on Rincon Park in the afternoon throughout the year. The net new project or variant shadow would fall on many of the sunlit seating areas in the park where many park users prefer to sit and would adversely affect the use of those areas. Expressed as a percentage of the TAAS, the proposed project or variants would result in a decrease in sunlight of about 2.2 percent per year. Rincon Park is a sunny park along the waterfront, and the current height limits on the west side of The Embarcadero preserve afternoon sunlight on Rincon Park. The net new project or variant shadow on Rincon Park would be substantial and would adversely affect the enjoyment and use of the park. For these reasons, the proposed project or variants would have a significant and unavoidable shadow impact on Rincon Park.

There is no feasible mitigation for the proposed project's or variants' shadow impact on Rincon Park, because any theoretical mitigation would fundamentally alter the basic design and programming parameters of the proposed project or variants. Any development of substantial height (approximately 100 feet or taller) on the project site would shadow Rincon Park.[16] Reducing the building height would reduce the development program of the proposed project or

[16] CADP generated shadow calculations for a 200-foot-tall alternative that would comply with the current height limit for the project site. This alternative would cast about 4,517,994 sfh of annual net new shadow on Rincon Park (a reduction of about 53.5 percent when compared to the proposed project). This alternative is 148 feet shorter than the proposed project, but like the proposed project, this alternative would cast net new shadow on Rincon Park. Therefore, an even greater reduction in height would be required to avoid casting any net new shadow on Rincon Park. The shadow calculations for the 200-foot-tall alternative are available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2011.1122E.

variants. Even then, the proposed project or variants would still shadow Rincon Park. Thus, there is no feasible mitigation to reduce this impact to a less-than-significant level.

The Embarcadero Promenade

On March 23, the net new project or variant shadow on the Embarcadero Promenade would begin shortly before 3:00 p.m. and last until approximately 5:30 p.m. From approximately 5:30 p.m. until the end of the day at approximately 6:09 p.m., the net new project or variant shadow would be obscured by shadows cast by existing buildings. The proposed project or variants would shadow the segment of the Embarcadero Promenade between Howard Street and Folsom Street, moving from north to south as the day progresses.

On June 21, the net new project or variant shadow on the Embarcadero Promenade would begin shortly after 5:00 p.m. and last until shortly before the end of the day at approximately 7:36 p.m. The proposed project or variants would shadow the segment of the Embarcadero Promenade between Howard Street and Harrison Street, moving from north to south as the day progresses.

The shadow patterns that would occur on September 20 would be the same as the shadow patterns that would occur on March 23 (see discussion above).

On December 20, the net new project or variant shadow on the Embarcadero Promenade would begin at approximately 11:30 a.m. and last until shortly after 2:00 p.m. From shortly after 2:00 p.m. until the end of the day at approximately 3:54 p.m., the net new project or variant shadow would be obscured by shadows cast by existing buildings. The proposed project or variants would shadow the segment of the Embarcadero Promenade between Mission Street and Howard Street, moving from north to south as the day progresses.

In summary, the proposed project or variants would cast net new shadow on the Embarcadero Promenade in the afternoon on most days throughout the year. In general, the net new project or variant shadow would begin later in the day during the summer (after approximately 5:00 p.m.) and earlier in the day during the winter (after approximately 11:30 a.m.). The proposed project or variants would affect a 3-block-long segment, from Mission Street to Harrison Street, of the 3-mile-long Embarcadero Promenade. The affected segment includes some seating areas, and net new project or variant shadow on this segment of the Embarcadero Promenade would adversely affect the use of these seating areas. However, shadow from the proposed project or variants would not affect the other segments of the 3-mile-long Embarcadero Promenade. For these reasons, the proposed project or variants would have a less-than-significant shadow impact on the Embarcadero Promenade.

Privately Owned, Publicly Accessible Open Spaces and Public Sidewalks

The following discussion describes the shadow impacts of the proposed project or variants on the POPOs at 50 Beale Street, 77 Beale Street, 1 California Street, 50 California Street, 101 California Street, 50 Fremont Street, 88 Howard Street, 180 Howard Street, 135 Main Street, One Market Plaza, 425 Market Street, 123 Mission Street, 201 Mission Street, 160 Spear Street, and 201 Spear Street, as well as the public sidewalks in the project vicinity. The discussion focuses on four representative days of the year (one day for each season). Shadow would occur on other days throughout the year in addition to the four days discussed below.

<u>March 23</u>

The proposed project or variants would not cast net new shadow on any POPOs throughout the day except for the POPO at 88 Howard Street (the Rincon Center). At approximately 11:00 a.m., the proposed project or variants would cast net new shadow on a portion of the POPO at the Rincon Center for a short period of time (approximately 15 to 30 minutes). This POPO is a courtyard that is surrounded on all sides by high-rise buildings. For much of the day, this POPO is already shadowed by existing buildings (see Figures 4.H.2 and 4.H.3, on pp. 4.H.16 and 4.H.17, respectively).

From the beginning of the day at approximately 7:57 a.m. until shortly before 9:00 a.m. and from shortly after 9:00 a.m. until approximately 11:00 a.m., the proposed project or variants would not cast net new shadow on any nearby sidewalks, because shadow from the proposed project or variants would be obscured by shadows cast by existing buildings. From shortly before 9:00 a.m. until shortly after 9:00 a.m., the proposed project or variants would cast net new shadow on the sidewalks along the west side of Spear Street near the intersection with Mission Street and along the north and south sides of Mission Street near the intersection with Spear Street. From approximately 11:00 a.m. until approximately 3:00 p.m., the proposed project or variants would cast net new shadow on the sidewalks along the north and south sides of Howard Street near the intersection with Steuart Street and along the east and west sides of Steuart Street near the intersection with Howard Street. From shortly after 1:00 p.m. until shortly after 5:00 p.m., the proposed project or variants would cast net new shadow on the sidewalks along the east and west sides of The Embarcadero. From shortly after 5:00 p.m. until the end of the day at approximately 6:09 p.m., the proposed project or variants would not cast net new shadow on any nearby sidewalks, because shadow from the proposed project or variants would be obscured by shadows cast by existing buildings (see Figures 4.H.2 and 4.H.3, on pp. 4.H.16 and 4.H.17, respectively).

<u>June 21</u>

The proposed project or variants would not cast net new shadow on any POPOs throughout the day except for the POPO at 160 Spear Street. At approximately 10:00 a.m., the proposed project or variants would cast net new shadow on a portion of the POPO at 160 Spear Street for a short period of time (approximately 10 to 15 minutes). This POPO is a street-level open space that is surrounded on the north, west, and south by high-rise buildings. For much of the day, this POPO is already shadowed by existing buildings (see Figures 4.H.4 and 4.H.5, on pp. 4.H.18 and 4.H.19, respectively).

From the beginning of the day at approximately 6:47 a.m. until shortly before 7:00 a.m., the proposed project or variants would cast net new shadow on the sidewalks along the north and south sides of Mission Street near the intersection with First Street and along the east and west sides of First Street near the intersection with Mission Street. From shortly before 7:00 a.m. until shortly after 10:00 a.m., the proposed project or variants would cast net new shadow on the sidewalks along the west side of Spear Street near the intersection with Howard Street and along the north side of Howard Street near the intersection with Spear Street. From shortly after 10:00 a.m. until shortly before 1:00 p.m., the proposed project or variants would cast net new shadow on the sidewalk along the north and south sides of Howard Street between Spear Street and Steuart Street. From shortly before 1:00 p.m. until shortly after 2:00 p.m., the proposed project or variants would cast net new shadow on the sidewalk along the east side of Steuart Street across from the project site. From shortly after 2:00 p.m. until the end of the day at approximately 7:36 p.m., the proposed project or variants would cast net new shadow on the sidewalks along the east and west sides of The Embarcadero (see Figures 4.H.4 and 4.H.5, on pp. 4.H.18 and 4.H.19, respectively).

<u>September 20</u>

The shadow patterns that would occur on September 20 would be the same as the shadow patterns that would occur on March 23 (see discussion above).

<u>December 20</u>

The proposed project or variants would not cast net new shadow on any POPOs throughout the day, because shadow from the proposed project or variants would be obscured by shadows cast by existing buildings (see Figures 4.H.6 and 4.H.7, on pp. 4.H.20 and 4.H.21, respectively).

From the beginning of the day at approximately 8:20 a.m. until shortly before 10:00 a.m., the proposed project or variants would not cast net new shadow on any nearby sidewalks, because shadow from the proposed project or variants would be obscured by shadows cast by existing buildings. From shortly before 10:00 a.m. until shortly after 2:00 p.m, the proposed project or variants would cast net new shadow on the sidewalks along the east side of Steuart Street between Market Street and Howard Street, along the north and south sides of Howard Street between Steuart Street and The Embarcadero, and along the east and west sides of The Embarcadero between Mission Street and Howard Street. From shortly after 2:00 p.m. until the end of the day at approximately 3:54 p.m., the proposed project or variants would not cast net new shadow on any nearby sidewalks, because shadow from the proposed project or variants would be obscured by shadows cast by existing buildings (see Figures 4.H.6 and 4.H.7, on pp. 4.H.20 and 4.H.21, respectively).

Conclusion

There are 15 POPOs that are within reach of the shadow from the proposed project or variants, but only two of them would be affected by the proposed project or variants. For short periods of time in the morning, the proposed project or variants would cast net new shadow on the POPOs at the Rincon Center (during the spring and autumn) and 160 Spear Street (during the summer). The short duration and transitory nature of the shadow would not substantially affect the use of these POPOs, although these POPOs may be less pleasant without sunlight. Many POPOs in downtown San Francisco are shadowed during the day but are still used, because some people may prefer to sit in the shade instead of under direct sunlight. Overall, the proposed project or variants would not increase the amount of shadow on these POPOs above levels that are common and generally expected in densely developed urban environments. For these reasons, the proposed project or variants would have a less-than-significant shadow impact on the POPOs at the Rincon Center and 160 Spear Street.

The proposed project or variants would cast net new shadow on nearby sidewalks, including, but not limited to, those along First Street, Howard Street, Mission Street, Spear Street, Steuart Street, and The Embarcadero, at certain times of day throughout the year. Many of the sidewalks in downtown San Francisco are already shadowed for much of the day by densely developed high-rise buildings, and net new project or variant shadow would be transitory in nature and would not substantially affect the use of the sidewalks. Overall, the proposed project or variants would not increase the amount of shadow on the sidewalks above levels that are common and generally expected in densely developed urban environments. For these reasons, the proposed project or variants would have a less-than-significant shadow impact on sidewalks near the project site.

Proposed Publicly Accessible Open Space

As discussed under "Project Features," on p. 4.H.12, a new 4,780-square-foot publicly accessible open space on the east side of Steuart Street across from the project site would be developed as part of the proposed project or variants. After this proposed open space has been created, it would be affected by shadow cast by existing buildings as well as shadow cast by the proposed project or variants. The shadow patterns of existing buildings and the proposed project or variants in relation to this proposed open space are discussed below.

On March 23, the proposed new open space would be sunny from the beginning of the day until shortly before 1:00 p.m. From shortly before 1:00 p.m. until approximately 2:00 p.m., the proposed project or variants would cast shadow on the open space. At approximately 2:00 p.m., shadows cast by existing buildings to the west would reach the open space and begin to extend east across the open space as the afternoon progresses. Shortly after 4:00 p.m., the proposed project or variants would not cast any shadow on the open space, but the open space would be completely shadowed by existing buildings to the west until the end of the day at approximately 6:09 p.m. (see Figures 4.H.2 and 4.H.3, on pp. 4.H.16 and 4.H.17, respectively).

On June 21, the proposed new open space would be sunny from the beginning of the day until shortly after 1:00 p.m. From shortly after 1:00 p.m. until shortly after 5:00 p.m., the proposed project or variants would cast shadow on the open space. The project or variant shadow would begin on the west side of the open space and extend southeast across the open space as the afternoon progresses. Although the northern half of the open space would not be shadowed by the proposed project or variants during this period, it would be shadowed by existing buildings to the west. From shortly after 5:00 p.m. until the end of the day at approximately 7:36 p.m., the open space would be completely shadowed by existing buildings to the west and northwest (see Figures 4.H.4 and 4.H.5, on pp. 4.H.18 and 4.H.19, respectively).

The shadow patterns that would occur on September 20 would be the same as the shadow patterns that would occur on March 23 (see discussion above).

On December 20, the proposed new open space would be sunny from the beginning of the day at approximately 8:20 a.m. until approximately 10:00 a.m. At approximately 10:00 a.m., shadows cast by existing buildings to the south would reach the open space and begin to extend northeast across the open space as the afternoon progresses. At approximately 1:00 p.m., the proposed project or variants would cast shadow on the northeast corner of the open space, while the rest of the open space would be shadowed by existing buildings to the southwest. From approximately 2:00 p.m. until the end of the day at approximately 3:54 p.m., the open space would be completely shadowed by existing buildings to the southwest (see Figures 4.H.6 and 4.H.7, on pp. 4.H.20 and 4.H.21, respectively).

During the spring, summer, and autumn, the proposed new open space would be sunny until the early afternoon. Existing buildings and the proposed project or variants would cast afternoon shadow on the open space. During the winter, the open space would be sunny until the late morning, and it would be shadowed for the rest of the day. Almost all of the shadow on the open space would be cast by existing buildings. Since the open space does not yet exist, it does not have any pre-existing recreational activity or pre-existing public expectation of sunlight that would be adversely affected by shadow from the proposed project or variants. The amounts of shadow and sunlight on the open space, including the amount of shadow that would be cast by the proposed project or variants, would be part of the existing conditions for the open space from its inception. For these reasons, the proposed project or variants would have a less-than-significant shadow impact on the proposed new open space.

CUMULATIVE IMPACT EVALUATION

Impact C-WS-1: The proposed project or variants, in combination with past, present, and reasonably foreseeable future projects in the project vicinity, would create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas, resulting in a significant cumulative shadow impact. The proposed project or variants would make a cumulatively considerable contribution to this significant cumulative shadow impact. (*Significant and Unavoidable*)

There are several proposed projects in the project vicinity that have the potential to shadow parks, outdoor recreation facilities, or other public areas, including some of the same open spaces that the proposed project or variants would shadow. The *Transit Center District Plan* (TCDP), adopted by the San Francisco Board of Supervisors on July 31, 2012, is a comprehensive plan for and rezoning of the southern portion of the downtown Financial District west of the project site. Implementation of the TCDP would increase height limits that would allow the construction of buildings exceeding 700 feet in height, and this potential development, as approved by City decision-makers, would shadow parks, outdoor recreation facilities, or other public areas, including some of the same open spaces that the proposed project or variants would shadow. Other reasonably foreseeable future projects include 101 First Street (the Transit Tower) and 181 Fremont Street.

The Transit Tower, 181 Fremont Street, and other buildings that could be constructed under the TCDP would cast net new shadow on parks, outdoor recreation facilities, or other public areas. Affected public open spaces that are under the jurisdiction of the Recreation and Park Commission include Boeddeker Park, the Chinese Recreation Center, Justin Herman Plaza, Maritime Plaza, Portsmouth Square, St. Mary's Square, Union Square, Willie "Woo Woo" Wong Playground, and Woh Hei Yuen Recreation Center and Park. Other affected public open spaces that are not under the jurisdiction of the Recreation and Park Commission include the Embarcadero Promenade, Ferry Plaza, Mechanics Plaza, Rincon Park and Yerba Buena Gardens. The POPOs at 50 Beale Street, 1 Bush Street, 45 Fremont Street, 50 Fremont Street, 525 Market

Street, 555-575 Market Street, 525 Market Street, 560 Mission Street, and 1 Post Street, and sidewalks throughout downtown San Francisco would also be affected. [17]

As discussed under Impact WS-1, p. 4.H.13, the proposed project would not cast net new shadow on any public open spaces that are under the jurisdiction of the Recreation and Park Commission. For this reason, the proposed project or variants would not make a cumulatively considerable contribution to a significant cumulative shadow impact on public open spaces that are under the jurisdiction of the Recreation and Park Commission.

As discussed under Impact WS-1, the proposed project or variants would cast net new shadow on the Embarcadero Promenade, Rincon Park, POPOs at the Rincon Center and 160 Spear Street, and sidewalks near the project site. The Embarcadero Promenade, Rincon Park, and downtown sidewalks are the only open spaces and other public areas that would be shadowed by both the proposed buildings in the Transit Center District and the proposed project or variants.

The proposed buildings in the Transit Center District would cast net new shadow on the Embarcadero Promenade in the late afternoon throughout the year, on Rincon Park in the late afternoon throughout much of the year, and on downtown sidewalks throughout the day and throughout the year.[18] The *Transit Center District Plan and Transit Tower EIR* (TCDP EIR) concludes that development anticipated under the TCDP, including the Transit Tower, would have a significant and unavoidable shadow impact on Rincon Park and the Embarcadero Promenade. The proposed project would cast net new shadow on Rincon Park and the Embarcadero Promenade in the late afternoon on most days throughout the year. At certain times of the year, the proposed project or variants would shadow Rincon Park and the Embarcadero Promenade at times of day when the proposed buildings in the Transit Center District would not shadow either of these open spaces (see Figure 4.H.9: Cumulative Shadow on Rincon Park at 5:00 p.m. on June 21, through Figure 4.H.13: Cumulative Shadow on Rincon Park at 4:00 p.m. on September 21, on pp. 4.H.33-4.H.37). At other times of the year, the proposed project or variants and the proposed buildings in the Transit Center District would cast net new shadow on different areas of Rincon Park and the Embarcadero Promenade at the same time of day (see Figure 4.H.14: Cumulative Shadow on Rincon Park at 5:00 p.m. on September 21, on p. 4.H.38). There would also be times of the year when the proposed buildings in the Transit Center District would cast net new shadow on Rincon Park and the Embarcadero Promenade when the proposed project or variants would not cast net new shadow on either of these open spaces (see

[17] San Francisco Planning Department. *Transit Center District Plan and Transit Tower Final Environmental Impact Report* (TCDP EIR), Cases No. 2007.0558E and 2008.0789E, certified May 24, 2012, pp. 469-526 is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400.

[18] TCDP EIR, pp. 520-521.

Figure 4.H.15: Cumulative Shadow on Rincon Park at 3:54 p.m. on December 21, on p. 4.H.39). When combined with the shadow that the proposed buildings in the Transit Center District would cast on the Embarcadero Promenade, Rincon Park, and downtown sidewalks, the proposed project or variants would create new cumulative shadow in a manner that would substantially affect the Embarcadero Promenade, Rincon Park, and downtown sidewalks. This cumulative shadow impact would be significant and unavoidable, and the proposed project or variants would make a cumulatively considerable contribution to this significant cumulative shadow impact.

There is no feasible mitigation for the proposed project's or variants' contribution to cumulative shadow impacts, because any theoretical mitigation would fundamentally alter the basic design and programming parameters of the proposed project or variants. Any development of substantial height (approximately 100 feet or taller) on the project site would shadow downtown open spaces and sidewalks that may also be affected by other downtown development. Other than a reduction in building height, no further modification of the proposed project or variants could eliminate the net new shadow on the Embarcadero Promenade, Rincon Park, and downtown sidewalks.[19] Reducing the building height would reduce the development program of the proposed project or variants. Even then, the proposed project or variants would still shadow Rincon Park, the Embarcadero Promenade, and sidewalks near the project site. Thus, there is no feasible mitigation to reduce this impact to a less-than-significant level.

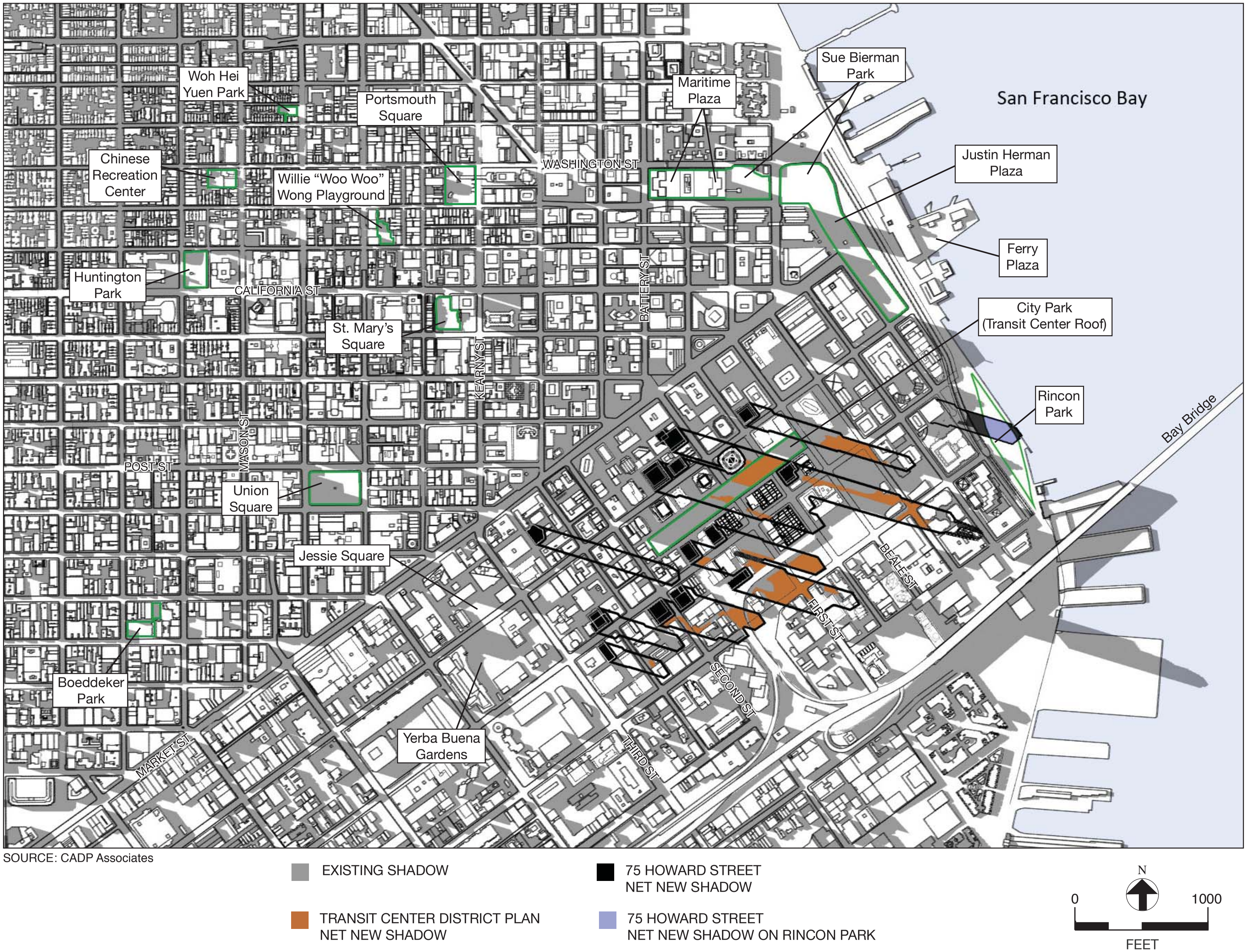
This EIR analyzes four alternatives to the proposed project, including two alternatives that are shorter than the proposed project. Please see Chapter 6, Alternatives, for a discussion of the shadow impacts of the 200-foot-tall Code Compliant Alternative (pp. 6.26-6.27) and the 275-foot-tall Reduced Height Alternative (p. 6.46).

[19] A height reduction of more than 148 feet would be required to avoid casting net new shadow on Rincon Park. Please see footnote 16, on p. 4.H.24, for more information.

SOURCE: CADP Associates

75 HOWARD STREET

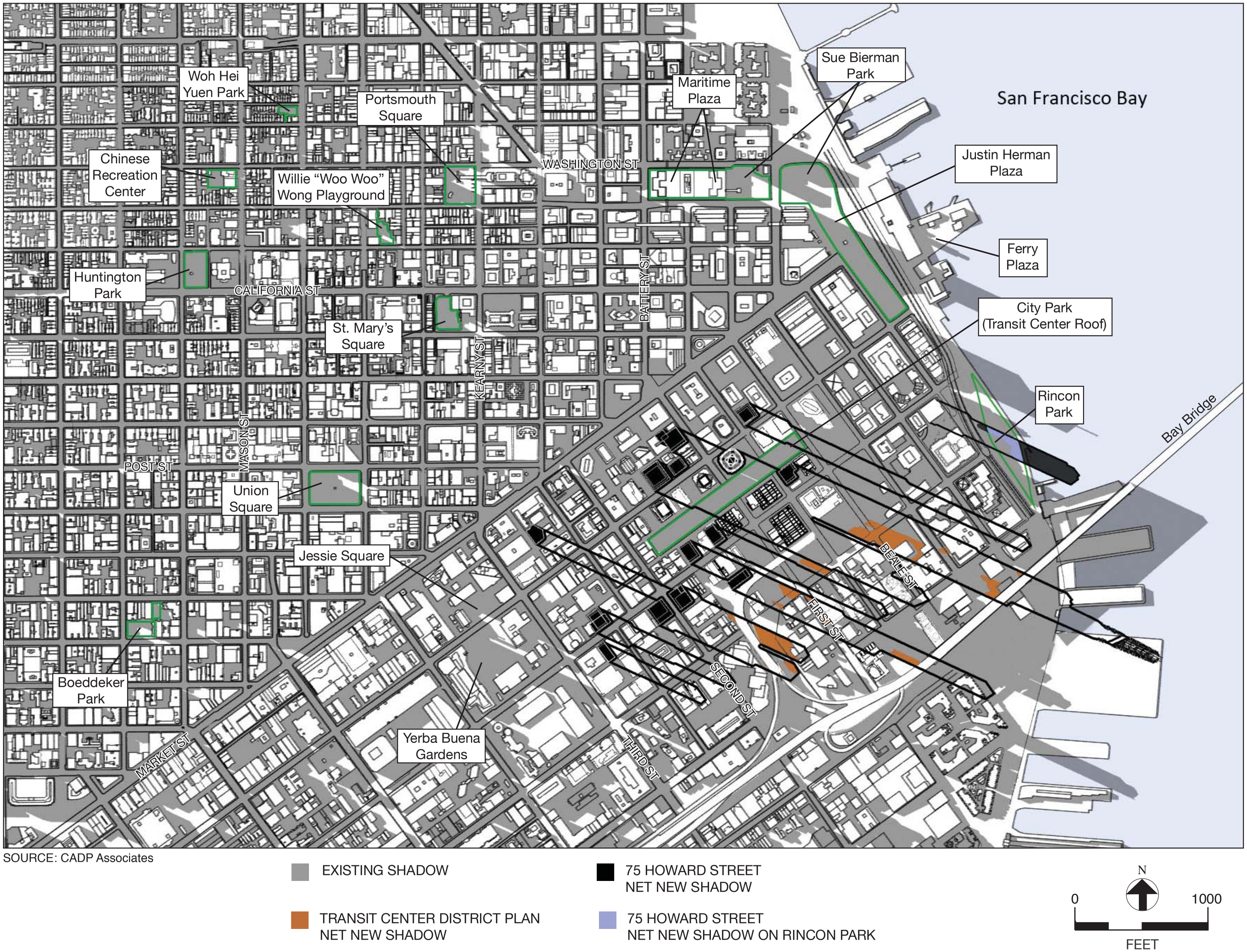
FIGURE 4.H.9: CUMULATIVE SHADOW ON RINCON PARK AT 5:00 P.M. ON JUNE 21



SOURCE: CADP Associates

75 HOWARD STREET

FIGURE 4.H.10: CUMULATIVE SHADOW ON RINCON PARK AT 6:00 P.M. ON JUNE 21



75 HOWARD STREET

FIGURE 4.H.11: CUMULATIVE SHADOW ON RINCON PARK AT 7:00 P.M. ON JUNE 21

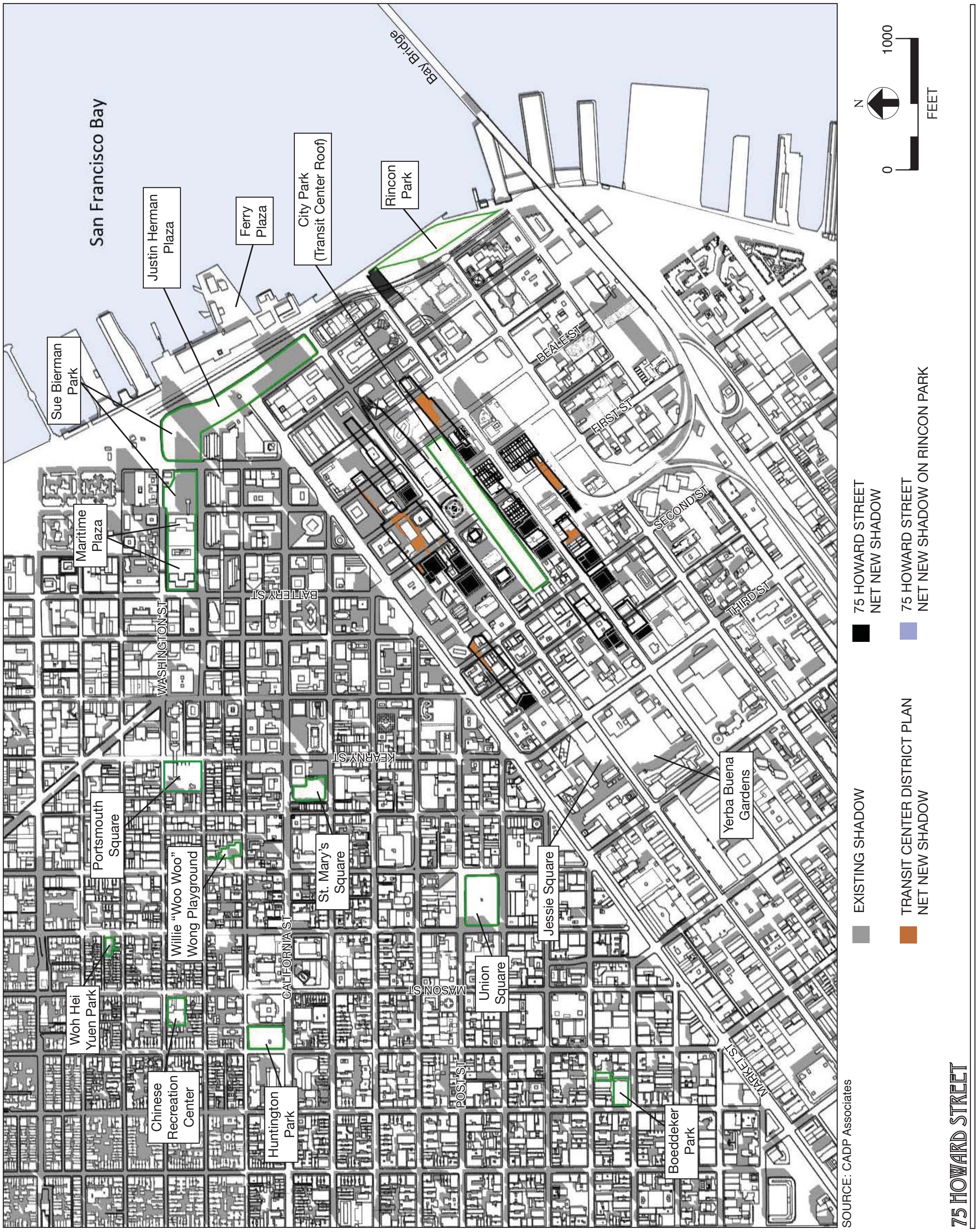


FIGURE 4.H.12: CUMULATIVE SHADOW ON RINCON PARK AT 3:00 P.M. ON SEPTEMBER 21

75 HOWARD STREET

FIGURE 4.H.13: CUMULATIVE SHADOW ON RINCON PARK AT 4:00 P.M. ON SEPTEMBER 21

75 HOWARD STREET

FIGURE 4.H.14: CUMULATIVE SHADOW ON RINCON PARK AT 5:00 P.M. ON SEPTEMBER 21

SOURCE: CADP Associates

75 HOWARD STREET

FIGURE 4.H.15: CUMULATIVE SHADOW ON RINCON PARK AT 3:54 P.M. ON DECEMBER 21

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I. UTILITIES AND SERVICE SYSTEMS

INTRODUCTION

As described in Appendix A, the Notice of Preparation/Initial Study (NOP/IS), pp. 102-110, determined that the proposed project and project variants would not exceed the San Francisco Bay Regional Water Quality Control Board's wastewater treatment requirements; would not require or result in the construction of new water, wastewater treatment, or stormwater drainage facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects; would have sufficient water supply available to serve the project from existing entitlements and resources; would not result in a determination by the wastewater treatment provider that would serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments; would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; and would comply with Federal, State, and local statutes and regulations related to solid waste.

Agency comments received after the 30-day public review period on the NOP/IS requested that the EIR provide more information regarding the proposed improvements in the open space improvement site and related potential effects on subsurface piping and stormwater drainage. Comments also requested a more expansive discussion regarding the San Francisco Public Utilities Commission (SFPUC) easement under Steuart Street, the location of the underground wastewater infrastructure and utility lines, and any potential odor issues related to the operation of SFPUC infrastructure in the project vicinity in light of the development of a new residential land use on the project site.

Therefore, Section I, Utilities and Service Systems, describes and analyzes the potential impacts of the proposed project and the project variants on the combined sewer and stormwater system in relation to the proposed Steuart Street improvements and their potential effects on stormwater drainage and management in the project vicinity. The Environmental Setting describes the existing combined sewer and stormwater system at a citywide level and in the context of the project site. The Impacts discussion describes the changes to stormwater drainage on the project site and in the immediate vicinity and the impacts of these changes on the combined sewer and stormwater system, including a discussion of odor issues related to SFPUC infrastructure in the project vicinity. This section also considers whether the proposed project in combination with other reasonably foreseeable development projects would contribute to cumulative environmental impacts on the combined sewer and stormwater system.

ENVIRONMENTAL SETTING

WASTEWATER[1]

San Francisco is roughly divided into two major drainage areas: the Bayside and Westside basins, which are further divided into eight subdrainage areas. The project area is located in the Channel Basin subdrainage area of the Bayside basin. The project site is served by San Francisco's combined sewer and stormwater system, which collects sanitary sewage and stormwater in the same sewers and treats the combined wastewater in the same treatment plants. Combined wastewater and stormwater flows from the Bayside basin are transported for treatment to the Southeast Water Pollution Control Plant (Southeast Plant), located on Phelps Street between Jerrold and Evans avenues. The Southeast Plant treats up to 150 million gallons per day (mgd) of wastewater to a secondary treatment level.[2]

During dry weather, wastewater flows consist mainly of municipal and industrial sanitary sewage and wastewater. The annual average wastewater flow during dry weather is 63 mgd, and the average dry-weather design flow capacity of the Southeast Plant is 84.5 mgd.[3] During wet weather, the combined sewer and stormwater system collects large volumes of stormwater runoff in addition to municipal and industrial sanitary sewage and wastewater, and the combined wastewater and stormwater flow is conveyed to treatment facilities before eventual discharge to the Bay. Up to 150 mgd of wet-weather flows receive secondary treatment at the Southeast Plant, which can also treat up to an additional 100 mgd to a primary treatment level plus disinfection. During wet weather, the capacity at the Southeast Plant is supplemented by the North Point Wet-Weather Facility and a series of storage/transport boxes[4] located around the perimeter of the City's bayside waterfront including the Channel Outfalls Consolidation Box. The Channel Outfalls Consolidation Box is located in an SFPUC utility easement under the Steuart Street right-of-way south of Howard Street adjacent to the project site and extending to The Embarcadero right-of-way and into Mission Bay. Up to an additional 150 mgd of wet-weather

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1 This setting subsection based on the SFPUC's Sewer System Improvement Program Report- DRAFT Report for SFPUC Commission Review, July 27, 2010 (Revised August 10, 2010). Available online at http://sfwater.org/modules/showdocument.aspx?documentid=984. Accessed May 15, 2013.

2 Secondary treatment involves the removal of organic matter from wastewater or sewage using biological and chemical processes. This level of treatment is more rigorous than primary treatment, which removes floating and settleable solids by implementing physical methods such as screening and sedimentation. Secondary treatment is less intensive than tertiary treatment, which employs further chemical and biological processes to remove additional compounds in an effort to achieve discharge or reuse requirements.

3 California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2008-0007, National Pollutant Discharge Elimination System Permit No. CA0037664, p. 7. Available online at http://www.waterboards.ca.gov/rwqcb2/board_decisions/adopted_orders/2008/R2-2008-0007.pdf. Accessed May 15, 2013.

4 The storage/transport boxes provide treatment consisting of settling and screening of floatable materials inside the boxes. This treatment is equivalent to primary treatment at the wastewater treatment plants.

flows can receive primary treatment plus disinfection at the North Point Wet Weather Facility. If wet-weather flows exceed the capacity of the overall system, the excess (primarily stormwater) is discharged from one of 36 combined sewer overflow (CSO) structures located along the City's bayside waterfront, from the Marina Green to Candlestick Point. Discharges from the CSO structures receive "flow-through treatment," which is similar to primary treatment. The existing North Shore Force Main transports all dry-weather flows from the North Shore Basin (up to 22 mgd) and up to 35 mgd of wet-weather flows to the Channel Outfalls Consolidation Box via The Embarcadero and Howard Street. The Channel Outfalls Consolidation Box collects and transports wastewater flows from this area south to the Channel Pump Station in Mission Bay. Once the Southeast Plant has reached its secondary treatment capacity of 150 mgd during wet weather, the North Point Wet-Weather Facility is activated and the North Shore Force Main is not used.

San Francisco's combined wastewater and stormwater system currently operates under National Pollutant Discharge Elimination System (NPDES) permits. The 2008 Bayside Permit (NPDES Permit No. CA0037664), issued and enforced by the San Francisco Bay Regional Water Quality Control Board (RWQCB) for the Southeast Plant, the North Point Wet-Weather Facility, and the Bayside Wet-Weather Transport/Storage and Diversion Structures including discharges from the CSOs to the Bay, specifies discharge prohibitions, dry-weather effluent limitations, wet-weather effluent performance criteria, receiving water limitations, sludge management practices, and monitoring and reporting requirements. The permit prohibits overflows from the CSO structures during dry weather, and requires wet-weather overflows to comply with the nine minimum controls specified in the U.S. Environmental Protection Agency (USEPA) Combined Sewer Overflow Control Policy. All areas that drain to the Bayside basin of San Francisco's combined sewer system, including the project area, are subject to this permit.

In 2010, the SFPUC finalized work on the Sewer System Master Plan (SSMP) to develop a long-term strategy to address the City's sanitary sewage and stormwater needs. Projects identified in the SSMP will undergo separate CEQA review. Concurrent with this master planning effort, the SFPUC allocated $150 million to an Interim Capital Improvement Program to fund approximately 40 critical projects addressing aging collection, conveyance and treatment infrastructure, odor emission controls, and potential flooding in various parts of the City. Among these concurrent projects is the SFPUC's North Shore to Channel Force Main Project, which includes utility construction near the project site under Howard Street between Spear and Steuart streets. Environmental review of this project has been completed and this project is being implemented.[5]

EXISTING UTILITIES ON THE PROJECT SITE

There are sanitary sewer lines of various diameters under the Steuart and Howard street rights-of-way, including the 36-inch-diameter force main (North Shore Force Main), that conduct wastewater flows from the project area to the approximately 15-foot-wide Channel Outfalls Consolidation Box located in the SFPUC utility easement under the Steuart Street right-of-way. The 10-inch-diameter sanitary sewer lines under the Steuart and Howard streets rights-of-way connect to the storm drains located on the roadway surface and transport stormwater to the Channel Outfalls Consolidation Box, either directly or indirectly. Other SFPUC infrastructure under the Howard Street and Steuart streets rights–of-way includes a 9-foot-by-7-foot concrete sewer box and a sanitary sewer diversion structure under Howard Street between Steuart Street and The Embarcadero and a 7-foot-diameter sewer line under Howard Street between Spear and Steuart streets.[6] Other utility infrastructure under the Steuart and Howard streets rights-of-way include the SFPUC's high-pressure and regular water lines, a high-pressure gas line, telephone lines, and electrical lines.

REGULATORY FRAMEWORK

Federal and State laws and local policies govern water quality protection. Water quality requirements determine the type of wastewater collection and treatment facilities needed to manage pollution. Highlights of the applicable requirements are summarized below.

<u>Federal</u>

The Federal Clean Water Act amendments of 1972 prohibit the discharge of pollutants to navigable waters of the United States from a point source, unless the discharger has an NPDES permit. The USEPA has delegated certain authority to the State of California.

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[5] San Francisco Public Utilities Commission, "North Shore to Channel Force Main Sewer Improvement Water Main Replacement and Relocation, and Pavement Rehabilitation Project", available online at http://sfwater.org/Modules/ShowDocument.aspx?documentid=2383. Accessed May 15, 2013. San Francisco Planning Department, North Shore to Channel Force Main Project Mitigated Negative Declaration, March 21, 2012. A copy of this document is available for public review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, as part of Case File No. 2011.1370E.

[6] Martin M. Ron Associates, Preliminary Site Survey of a portion of Assessor's Block Nos. 3741 and 3742 for Paramount Group Inc, April 15, 2013. A copy of this graphic is available for public review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, as part of Case File No. 2011.1122E.

State

The Porter-Cologne Water Quality Control Act authorizes the State Water Resources Control Board (SWRCB), which, in turn, delegated certain authority to the several Regional Water Quality Control Boards (Regional Boards) to issue and enforce NPDES permits, as discussed above.

In addition, the SWRCB develops water quality standards and performs other functions to protect California's waters. The Regional Boards carry out the SWRCB regulations and standards, and the Regional Boards issue and enforce permits. The San Francisco Bay Regional Water Quality Control Board also implements the *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan).

The SWRCB has a Sanitary Sewer Overflow Reduction Program. "A sanitary sewer overflow ('SSO') is any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system."[7] Untreated overflows frequently contain high levels of suspended solids, pathogenic organisms, nutrients, toxic chemicals, oil, grease, and other pollutants. The SWRCB adopted Water Quality Order No. 2006-0003 (Sanitary Sewer Order), which requires public agencies that own or operate sanitary sewer systems to develop and implement sewer system management plans to reduce SSOs. In addition, they must report all SSOs to the SWRCB's online SSO database.

Local

San Francisco Public Works Code Article 2.4

The San Francisco Department of Public Works (DPW) issues permits to construct, improve, work on or occupy the city's sidewalks and roadways. The project sponsor would be required to obtain a General Excavation Permit to implement the proposed open space improvements on the Steuart Street right-of-way. Among other requirements, DPW procedures require anyone doing work in the street to notify all governmental and private utilities of the intent to implement street improvement and then to coordinate with those utilities to avoid conflicts, relocate utilities if needed and assure no interruption of service.

San Francisco Public Works Code Article 16

DPW issues permits and provides the set of requirements for the planting, maintenance, or removal of street trees and landscaping in the public rights-of-way. The project sponsor would comply with these requirements as well as other requirements related to street trees such as

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[7] State Water Resources Control Board, Sanitary Sewer Overflow Reduction Program. Available online at http://www.waterboards.ca.gov/water_issues/programs/sso/index.shtml. Accessed May 14, 2013.

Planning Code Section 138 as part of the implementation of the proposed open space improvements on the Steuart Street right-of-way.

San Francisco Public Works Code Article 21

DPW requires project construction practices to comply with San Francisco's Restriction of Use of Potable Water for Soil Compaction and Dust Control Activities, in accordance with Article 21 of the Public Works Code.

San Francisco Health and Safety Code Chapter 12C

The project is required to comply with San Francisco's On-Site Water Reuse for Commercial, Multi-Family, and Mixed-Use Developments Ordinance, in accordance with Health and Safety Code Chapter 12C. This ordinance establishes guidelines for the installation of non-potable water systems, including collection, treatment, and reuse of water for toilet flushing, irrigation and other non-potable uses, and sets local regulations to ensure appropriate water quality standards.

Construction Site Water Pollution Prevention Program

The City's Construction Site Water Pollution Prevention Program requires stormwater quality Best Management Practices (BMPs) at all construction sites, regardless of the size of the site and whether the site drains to the combined sewer or a separate storm sewer system.[8]

For sites that disturb one or more acres and drain to a separate sewer system, compliance with the Construction General Permit and preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that meets Construction General Permit conditions is required. For sites that discharge to the combined sewer system, a SWPPP that includes an Erosion and Sediment Control Plan and meets SFPUC requirements must be submitted to the SFPUC prior to initiation of construction.

Water Pollution Prevention Program

The City has a Water Pollution Prevention Program to avoid and minimize pollutants entering the City's sewer system and storm drains, thereby reducing pollutant loading to San Francisco Bay and the Pacific Ocean.[9] The program includes education components for businesses, residents, and City employees. The program also includes several initiatives that are meant to reduce water pollution, including initiatives to reduce toxic chemicals used for landscaping, reduce dental

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8 SFPUC, "Construction Site Runoff Pollution Prevention Procedures." Available online at http://sfwater.org/index.aspx?page=235. Accessed May 14, 2013.

9 SFPUC, "Water Pollution Prevention." Available online at http://sfwater.org/index.aspx?page=96. Accessed May 14, 2013.

mercury, reduce fats/oils/greases, minimize construction-related water pollution, minimize stormwater pollution, minimize pet-waste-related water pollution, ensure proper disposal of medications, and support green design and operation measures for businesses and households. Articles 4, 4.1, and 4.2 of the San Francisco Public Works Code contain many components of the program.[10]

The City has been working for many years to reduce fats, oil, and grease in the wastewater stream from commercial and residential kitchens, especially from restaurants. These materials clog pipes and treatment processes. The City adopted a fats, oil, and grease ordinance in February 2011, which strengthened Article 4.1.[11]

Stormwater Management Ordinance

The Stormwater Management Ordinance (SMO) was created to implement green infrastructure systems within San Francisco to help minimize stormwater runoff to the combined sewer and storm sewer collection systems, and help protect receiving Bay and ocean waters.[12] Under the SMO, every development project with 5,000 square feet or more of ground disturbance must comply with the *Stormwater Design Guidelines*. The SMO provides for inspections, sampling, notification regarding spills, and enforcement.

Stormwater Design Guidelines

The SFPUC and the Port of San Francisco developed the *San Francisco Stormwater Design Guidelines*.[13] The guidelines set forth a planning process for stormwater management and guidance for developing integrated, Low Impact Design (LID) solutions using site- and neighborhood-scale BMPs.[14] The *San Francisco Stormwater Design Guidelines* include seven principles:

1) Preserve and protect existing waterways, wetlands, and vegetation.
2) Preserve natural drainage patterns and topography and use them to inform design.
3) Think of stormwater as a resource, not a waste product.
4) Minimize and disconnect impervious surfaces.

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10 San Francisco Public Works Code. Available at the San Francisco Public Library and online at http://www.sfdpw.org/index.aspx?page=739. Accessed May 14, 2013.
11 San Francisco Public Works Code, Article 4.1, Section 140-140.7.
12 City and County of San Francisco, *Stormwater Management Ordinance*. Available online at http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances10/o0083-10.pdf. Accessed May 14, 2013.
13 San Francisco Public Utilities Commission, *San Francisco Stormwater Design Guidelines*. Available online at http://www.sfwater.org/modules/showdocument.aspx?documentid=2779. Accessed May 14, 2013.
14 Low Impact Design approaches use stormwater management solutions that promote the use of ecological and landscape-based systems that mimic pre-development drainage patterns and hydrologic processes by increasing retention, detention, infiltration, and treatment of stormwater at its source.

5) Treat stormwater at its source.
6) Use treatment trains to maximize pollutant removal.
7) Design the flow path of stormwater on a site all the way from first contact to discharge point.

Per requirements of the *San Francisco Stormwater Design Guidelines*, the proposed project must achieve Leadership in Energy and Environmental Design (LEED) Sustainable Sites (SS) c6.1, "Stormwater Design: Quantity Control." Therefore, the proposed project must implement a stormwater control plan that reduces existing stormwater runoff flow rate and volume by 25 percent for a two-year 24-hour design storm.

Green Building Ordinance

In 2008, the City adopted the San Francisco Green Building Ordinance and incorporated it as Chapter 13 of the Building Code. This requires green building practices and LEED certification for new residential and commercial buildings in the City. The Ordinance requires residential buildings over 75 feet to be LEED Certified and earn specific credits addressing water efficiency, stormwater management, and construction waste management (designated WEc1.1, WEc3.1, MRc2.1, SSc6.1 and SSc6.2). The stormwater management requirements (SSc6.1 and SSc6.2) seek to reduce the quantity of stormwater and improve its quality.

San Francisco General Plan

The Environmental Protection Element of the *San Francisco General Plan* contains the following policies relating to wastewater facilities:

Objective 3: Maintain and improve the quality of the Bay, ocean and shoreline areas.

Policy 3.1: Cooperate with and otherwise support regulatory programs of existing regional, State, and Federal agencies dealing with the Bay, Ocean, and Shorelines.

Policy 3.3: Implement plans to improve sewage treatment and halt pollution of the Bay and Ocean.

IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

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 adopted and modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the project would result in a significant land use impact. Implementation of the proposed project and project variants would have a significant effect on utilities and service systems if the project would:

I.1 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; or

I.2 Require or result in the construction of new stormwater drainage facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects.

PROJECT FEATURES

The project site is currently served by underground combined sanitary sewer and stormwater lines and other SFPUC infrastructure located under the Steuart and Howard streets rights-of-way. The proposed project and project variants would connect to these existing sewer lines and other utilities. The proposed improvements within the Steuart Street right-of-way would include the following: widening the west sidewalk from 16 feet to approximately 24 feet, except in front of the residential/hotel building entrance where a vehicle passenger drop-off/pick-up zone would be provided; widening the east sidewalk from 22 feet to approximately 32 feet; narrowing Steuart Street from 44.5 feet to 26 feet; raising the roadway in the cul-de-sac by about six inches so that the roadway and the sidewalks are a single surface at the same elevation; eliminating the turnaround bulb at the southern terminus of Steuart Street; and planting two rows of street trees along the east side of Steuart Street (see Figure 2.3: Proposed Site Plan, in Chapter 2, Project Description, p. 2.6). Excavation depth within the Steuart Street right-of-way would vary between 18 to 24 inches deep. As discussed in Chapter 2, Project Description, pp. 2.29-2.30, the proposed pedestrian, landscaping, and paving improvements to the segment of Steuart Street south of Howard Street including the adjacent sidewalks would require review and approval of several City agencies through the Transportation Advisory Staff Committee (TASC), including DPW, SFMTA, and SFFD. The proposed improvements would comply with San Francisco Public Works Code Article 2.4 requirements pertaining to work in the public right-of-way, the SFPUC Pipeline Right-of-Way Requirements, and Article 16 of the San Francisco Public Works Code (related to street tree planting and sidewalk landscaping).

IMPACT EVALUATION

Impact UT-1: The proposed project and project variants would not require or result in the construction of new wastewater or stormwater drainage facilities or in the expansion of existing facilities, the construction of which could cause significant environmental effects. *(Less than Significant)*

The City's combined sanitary sewer and stormwater system collects, transports, and treats sanitary sewage and stormwater runoff in the same facilities. Stormwater runoff comprises the primary source of total flows collected, conveyed, and eventually treated at the City's wastewater treatment facilities. The proposed improvements to the Steuart Street sidewalks and roadway could require the replacement or relocation of some existing catch basins and storm drains on Steuart Street. Although the proposed Steuart Street improvements would not result in a change to the total amount of impervious surface area on the Steuart Street right-of-way, changes to the existing drainage patterns would result from widening the sidewalks and raising the roadway level. The replacement or relocation of catch basins and storm drains, if necessary, would be part of the scope of construction related to implementation of the proposed Steuart Street improvements. Compliance with City regulations related to construction in the public right-of-way (Article 2.4 of the San Francisco Public Works Code), the SFPUC's Pipeline Right-of-Way Requirement, and Article 16 of the San Francisco Public Works Code, would reduce the effects of the changes to the existing stormwater drainage patterns on Steuart Street.

As discussed in the NOP/IS, pp. 103-105 (see Appendix A), the project sponsor would comply with Title 24 of the California Code of Regulations and the City's Green Building Ordinance and would develop an on-site recycled water system in compliance with the City's Reclaimed Water Ordinance.[15] Compliance with these regulations would reduce wastewater flows and the amount of potable water used for building functions such as landscaping. Additionally, the proposed project is subject to the City's SMO, which is intended to delay and/or reduce by 25 percent the existing volume and rate of stormwater runoff discharged from the project site from the two-year, 24-hour design storm. To achieve this, the project sponsor would develop a Stormwater Control Plan that locates and sizes source control and treatment BMPs.[16] There would also be maintenance and operation agreements to retain runoff on site and limit site discharges entering the City's combined sewer and stormwater collection system. Compliance with the SMO, and the fact that impervious surfaces on the site would not increase, would minimize total stormwater flows, which make up a large percentage of the total flow entering the combined sewer system. As determined in the NOP/IS, the wastewater flow increases related to the introduction of new on-site uses and stormwater flow increases attributable to the redevelopment of the project site would not require construction of new wastewater and stormwater collection, conveyance, or treatment facilities, or the expansion of existing facilities.

In summary, implementation of the proposed project and the project variants would result in less-than-significant impacts on utilities and service systems related to the construction or expansion

[15] San Francisco's Reclaimed Water Ordinance, contained in Article 22 of the San Francisco Public Works Code, specifies that, in designated areas of the City new buildings 40,000 square feet or larger must provide for the construction and operation of a reclaimed water system for the transmission of reclaimed water within buildings and structures.

[16] A detailed hydrologic analysis would be completed during the preparation of the Stormwater Control Plan and submitted for approval to the SFPUC with the final construction drawings.

of wastewater and stormwater drainage facilities, and mitigation measures would not be necessary.

Odors

As discussed in the NOP/IS, p. 62 (see Appendix A), the new restaurant, café kitchen, and hotel-related kitchen uses on the project site would operate in accordance with Bay Area Air Quality Management District Regulation 7 for odorous emissions, would comply with applicable requirements of the San Francisco Department of Public Health for proper kitchen filtration and food storage and disposal, would be ventilated with code-compliant hoods and ventilation systems, and would generate odors similar to those from existing land uses in the project vicinity. While the Initial Study, p. 62, concluded that construction and operation of the proposed project or project variants would have less-than-significant impact related to exposing a substantial number of people to objectionable odors, odor impacts can also result from siting sensitive receptors near existing odor sources. Although the project site is subject to odor sources typical of a mixed use urbanized area, it is also located in an area that has been subject to odors related to discharges of untreated wastewater into the Bay from the 2008 pipeline break in the North Shore Force Main, north of the project site under Jackson Street and The Embarcadero. As a result, the SFPUC initiated the North Shore to Channel Force Main Project, which is part of the Wastewater Enterprise Capital Improvement Program that addresses immediate SFPUC infrastructure needs.[17]

The North Shore to Channel Force Main Project is intended to address the deterioration of the southern segment of the North Shore Force Main, which is susceptible to failure due to pipeline corrosion. This pipeline segment is aligned under The Embarcadero between Jackson Street and Howard Street and under Howard Street between The Embarcadero and Steuart Street. It conveys flows to the existing Channel Outfalls Consolidation Box located adjacent to the project site under the Steuart Street public right-of-way and runs in a south to southwest direction to the Channel Pump Station and eventually to the Southeast Wastewater Treatment Plant. A new pipeline to be constructed under the Jackson, Drumm, California, Spear, and Howard Street public rights-of-way will provide redundancy for the southern segment of the North Shore Force Main allowing for infrastructure repairs/upgrades to the North Shore Force Main without affecting the full design capacity of the overall system.[18] Near the project site, a segment of the SFPUC's new pipeline will be installed under Howard Street between Spear and Steuart streets.

[17] San Francisco Public Utilities Commission, North Shore to Channel Force Main, Water Main Relocation and Replacement, and Pavement Renovation. Available online at http://sfwater.org/bids/projectDetail.aspx?prj_id=330. Accessed May 14, 2013.

[18] Since completion of the emergency repairs, the North Shore Dry-Weather Pumps have been operated at a lowered capacity to reduce internal pressures on the North Shore Force Main, in an effort to minimize the potential for another failure.

The new pipeline will connect to the existing Channel Outfalls Consolidation Box and convey flows to the Southeast Plant. The SFPUC does not propose any changes to this component of the combined sanitary sewer and stormwater system as part of the North Shore to Channel Force Main Project. There are no known odor complaints related to the existing Channel Outfalls Consolidation Box, and, with completion of the SFPUC's North Shore to Channel Force Main project, the potential for new residents to be exposed to odors related to discharges of untreated wastewater would be minimized. Therefore, the proposed project and project variants would have a less-than-significant impact related to the exposure of new sensitive receptors to existing objectionable odors, and mitigation measures would not be necessary.

CUMULATIVE IMPACT EVALUATION

Impact C-UT-1: Construction of the proposed project and project variants, in combination with other past, present and reasonably foreseeable future projects, would not result in a cumulatively considerable contribution to a significant cumulative utilities and service systems impact. (*Less than Significant*)

The proposed project and project variants' contribution to cumulative utilities and service systems impacts was analyzed in combination with reasonably foreseeable projects, such as development anticipated under the Transit Center District Plan (TCDP), and in relation to anticipated citywide growth estimates that are consistent with local growth projections. As discussed in the NOP/IS, pp. 109-110 (see Appendix A), reasonably foreseeable future cumulative development in the TCDP area and elsewhere in the City would incrementally increase demand on citywide utilities and service systems, but would not result in significant cumulative impacts. Similar to the proposed project and its variants, other reasonably foreseeable cumulative development projects in the TCDP area that could include construction in the public right-of-way would be subject to the same set of regulations, i.e., Article 2.4 of the San Francisco Public Works Code. Compliance with these City regulations would ensure that reasonably foreseeable cumulative development projects in the project vicinity would not increase the total amount of impervious surface area in the TCDP area or substantially alter stormwater drainage patterns in the public right-of-way such that they would result in an increase in the rate or volume of stormwater runoff discharged to the combined sewer system from the public right-of-way. With respect to objectionable odors related to the SFPUC's combined sewer system infrastructure, one of the primary goals of the SFPUC's long-range SSMP is to address collection system odors and their impacts on the community. Implementation of the SSMP would therefore benefit the community by minimizing the potential for new residential land uses to be exposed to objectionable odors. Therefore, reasonably forseeable development in the project site vicinity would not cause significant cumulative impacts on the combined sewer system or cause cumulative odor impacts.

As discussed above under Impact UT-1, improvements to the Steuart Street right-of-way proposed as part of the project and the project variants would result in less-than-significant impacts on utilities and service systems related to the construction or expansion of wastewater and stormwater drainage facilities. When considered in combination with reasonably foreseeable cumulative development projects, the proposed project and the project variants would not result in a cumulatively considerable contribution to a significant cumulative utilities and service systems impact related to wastewater and stormwater drainage facilities.

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J. BIOLOGICAL RESOURCES

INTRODUCTION

Section J, Biological Resources, describes and analyzes the potential effects of the proposed project and project variants on bird migration, bird and bat local movement, and birdstrike risks.

As described in Appendix A, the Initial Study, pp. 115-121, concluded that the proposed project or project variants would have no significant impact on protected, listed, or candidate species in local or regional plans, policies, or regulations, by Federal, State, or local governments, or on any riparian habitat or other sensitive area as defined by Federal, State, or local governments. The Initial Study further determined that the proposed project or project variants would have no impact on federally protected wetlands; or on an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan, including CDFG ordinances regarding bird nesting. The Initial Study also concluded that the proposed project or its variants would have a less-than-significant impact with respect to local policies, such as tree protection policies and ordinances, and with respect to cumulative impacts in all the subtopics of biological resources, excluding avian migration and birdstrike issues. The Initial Study concluded that the impacts of the proposed project and project variants on bird migration, bird movement, and birdstrike risks would be discussed in the Environmental Impact Report for both the proposed project and project variants, and cumulative impacts.

Therefore, this section describes the potential effects of the proposed project and project variants on bird migration, bird and bat local movement, and birdstrike risks. The Environmental Setting discussion describes the vegetation and wildlife on the project site as it relates to these issues. The Regulatory Framework discussion also addresses these issues. The Impacts discussion identifies significance criteria for biological resources impacts related to avian wildlife, including bird migration and local movement, birdstrike risks, and bats, and discusses potential changes to these biological resources that could occur if the proposed project or project variants were implemented.

ENVIRONMENTAL SETTING

REGIONAL SETTING

San Francisco is located in the Bay-Delta Bioregion, which consists of a variety of natural communities that range from the open waters of the Bay and Delta to salt and brackish marshes to grassland, chaparral and oak woodlands. The temperate climate is Mediterranean in nature, with relatively mild, wet winters and warm, dry summers. The high diversity of vegetation and wildlife found in the region is a result of soil, topographic, and micro-climate diversity that combine to promote relatively high levels of endemism. This, in combination with a long history of uses resulting in alteration of the natural environment, and the increasingly rapid pace of development in the region, has resulted in a relatively high degree of endangerment for local flora and fauna.

The San Francisco Bay-Delta is the second largest estuary in the United States and supports numerous aquatic habitats and biological communities. It encompasses 479 square miles, including shallow mudflats, tidal marshes, and open waters. The San Francisco Bay-Delta is an important wintering and migratory stop-over site for the Pacific Flyway. More than 300,000 wintering waterfowl use the region.[1]

PROJECT SETTING

The project site is located at the eastern edge of a developed urban area in San Francisco's Financial District neighborhood and is covered by the *Downtown Area Plan*, the *Transit Center District Plan* (TCDP) (a Sub-Area Plan of the *Downtown Area Plan*), and the *Northeastern Waterfront Area Plan*. Historically, urban development has dominated this part of San Francisco, including the project site, and the vast majority of native habitat has been removed; there is no riparian habitat or sensitive natural plant communities on the project site. There are no natural communities remaining in the area, and there are currently only small pockets of open space.[2] There are ornamental street trees in most sidewalks adjacent to and near the project site. Open space and vegetation, particularly trees, are relevant to bird migration and birdstrike risks because trees provide temporary or long-term habitat for birds, and trees near buildings that have clear or reflective glass increase the risk of birdstrikes.

The open space nearest the project site is Rincon Park, 205 feet to the east (284 feet to the east of the proposed building site), across The Embarcadero. Rincon Park is landscaped with a lawn, shrubs, sculpture, and seating areas, and three spindly trees that provide no cover for birdlife.

San Francisco Bay is 375 feet to the east of the proposed building site and 227 feet east of the proposed open space improvement site. To the south is the landscaped vegetation of the Gap Building's publicly accessible open space, which includes six non-native trees.

The project site is flat, developed, and almost completely covered with impervious surfaces, namely the existing 75 Howard Garage, and a paved, vacant lot on the site of the proposed open space improvement area. The remaining project site surface is the existing landscaping east of

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[1] TCDP EIR, p. 551.
[2] TCDP EIR, p. 552.

the parking garage and a narrow planting strip adjacent to the building on the east side. Vegetation within the project site and vicinity consists of ornamental trees and shrubs.

There are a total of 27 trees on or adjacent to the project site. There are ten street trees (*Ficus*) immediately adjacent to the building site to the north along Howard Street (five trees) and to the east along Steuart Street (five trees). There are 11 street trees (Sycamore) immediately adjacent to the open space improvement site to the north along Howard Street (two trees) and to the east along The Embarcadero (nine trees). The southern portion of the open space improvement site is a paved open area that functions as an extension of The Embarcadero sidewalk in front of the Gap Building's publicly accessible open space. This area is planted with six street trees (*Ginkgo*).

Although the project site is fully developed, there is some ground cover provided by shrubbery in planting beds and the trees on the proposed site. While the small patches of landscaped vegetation cannot support nesting by candidate, sensitive, or special-status wildlife species potentially occurring in San Francisco, the street trees on and near the project site could provide nesting sites for species of birds that are adapted to the urban environment.

San Francisco is located with the Pacific Flyway, a major north-south route of travel for migratory birds along the western portion of the Americas, extending from Alaska to Patagonia, Argentina. Every year, migratory birds travel some or all of this distance both in spring and in fall, following food sources, heading to breeding grounds, or traveling to overwintering sites. Migratory birds, such as warblers, orioles, juncos, robins, goldfinches, swallows, and even waterfowl, such as Canada geese and mallards, could visit the site.

SPECIAL-STATUS SPECIES

A number of species of birds and bats known to occur in the vicinity are protected pursuant to Federal and/or State endangered species laws, or have been designated Species of Special Concern by the CDFW. In addition, Section 15380(b) of the State CEQA Guidelines provides a definition of rare, endangered or threatened species that are not currently included in an agency listing but that whose "survival and reproduction in the wild are in immediate jeopardy" (endangered) or that "in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens" or "is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as that term is used in the Federal Endangered Species Act" (rare).[3]

[3] TCDP EIR, p. 553.

Special Status Bird Species

The TCDP EIR Appendix F sets forth a comprehensive list of special status species obtained from California Natural Diversity Database, California Native Plant Society Electronic Inventory, and the U.S. Fish and Wildlife Service.[4] In particular, there are four birds of special status in the area: the Peregrine falcon (*Falco peregrinus anatum*), the American kestrel (*Falco sparverius*), Cooper's hawk (*Accipiter cooperi*), and the Red-tailed hawk (*Buteo jamaicensis*). There is no suitable breeding habitat at the project site.[5]

Special-Status Bat Species

The three most commonly encountered species of bat in the San Francisco area are Mexican free-tailed bat (*Tadaridia brasiliensis*), Yuma myotis (*Myotis yumanensis*), and western red bat (*Lasiurus blossevillii*). However, the project site provides no potential roosting habitat for these bat species. The Townsend's big-eared bat (*Corynorhinus townsendii townsendii)* occurs in a variety of habitats and utilizes caves, mines, tunnels, buildings, or other human-made structures for roosting, particularly in abandoned or underutilized buildings.

Other Breeding and Migratory Birds

The City and County of San Francisco and surrounding Bay waters provide habitat for well over 200 species of birds, with some species as year-round residents, other species as winter residents, and still others passing through along the Pacific Flyway during spring and fall migrations. Avian diversity in the City is highest in areas with relatively large, diverse patches of habitat remaining. Nonetheless, trees, shrubs, and buildings within the TCDP area, where the project site is located, provide nesting habitat for a variety of birds as well as patches of habitat for potential use by migrants as stop-over sites. The most common species documented as nesting in the general downtown area include Brewer's blackbird (*Euphagus cyanocephalus*), American robin (*Turdus migratorius*), mourning dove (*Zenaida macrour*a), rock dove, house finch, house sparrow, European starling, and brown-headed cowbird (*Molothrus ater*). Less frequently found nesters include Anna's hummingbird (*Calypte anna*), common bushtit (*Psaltriparus minimus*), white-crowned sparrow (*Zonotrichia leucophrys*), chestnut backed chickadee (*Poecile rufescens*), and hooded oriole (*Icterus cucullatus*). As discussed below under "Regulatory Framework," most migratory birds are protected from harm by the Federal Migratory Bird Treaty Act. The TCDP area and the project site are not located within designated critical habitat for any federally listed species.

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4 TCDP EIR, pp. 555-557.
5 TCDP EIR, pp. 555-557.

It is estimated that, in North America alone, between 100 million and 1 billion birds are killed due to collisions with buildings and other structures each year. Collisions are currently recognized as one of the leading causes of bird population declines worldwide. Daytime collisions occur most often when birds fail to recognize window glass as a barrier. Regardless of overall building height, the ground floor and first few stories of buildings present the greatest hazards to most birds; reflections of attractive ground-level features like vegetation draw birds toward glass surfaces and often result in collisions. Recent increases in glass surfaces used to increase daylight in new buildings can be considered a "biologically significant" issue, potentially affecting the viability of local and regional bird populations. Transparent features – especially buildings where birds can see through two glass surfaces to vegetation on the other side – also attract birds and cause collisions. Vegetated areas and bodies of water, such as San Francisco Bay, provide potentially valuable stopover habitat for migratory birds. Open space areas adjacent to developed areas create bird habitats in the vicinity of proposed buildings, potentially resulting in higher bird collision risks.

Many collisions are induced by artificial night lighting, particularly from large buildings, which can be especially problematic for migrating songbirds since many are nocturnal migrants. The tendency of birds to move towards lights at night when migrating, and their reluctance to leave the sphere of light influence for hours or days once encountered, has been well documented. It has been suggested that structures located at key points along migratory routes may present a greater hazard than those at other locations. Other research suggests that fatal bird collisions increase as light emissions increase, that weather often plays an important part in increasing the risk of collisions, and that nights with heavy cloud cover and/or precipitation present the conditions most likely to result in high numbers of collisions. The type of light used may affect its influence on the birds: for example, studies have indicated that blinking lights or strobe lights affect birds significantly less than non-blinking lights. Power lines, communications towers, and wind turbines ("windmills") have also been implicated in birdstrikes.[6]

REGULATORY FRAMEWORK

Biological resources are protected by Federal, State, and local laws and regulations. Pursuant to these laws and regulations, certain birds have special status. In the discussion below, statutes and ordinances are described first, followed by an overview of the special status species that could occur on or in the vicinity of the project site.

[6] TCDP EIR, p. 559.

FEDERAL

Federal Endangered Species Act[7]

The United States Fish and Wildlife Service (USFWS) has jurisdiction over Federally listed threatened and endangered plant and animal species. A threatened species is one that is likely to become endangered in the foreseeable future. An endangered species is one that is considered in danger of becoming extinct throughout all or a significant portion of its range. The Federal Endangered Species Act (FESA) protects listed species from harm or "take," broadly defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Any such activity can be defined as a "take" even if it is unintentional or accidental.

Federal agencies involved in funding or permitting activities that may result in take of Federally listed species (e.g., U.S. Army Corps of Engineers) are required under Section 7 of FESA to consult with the USFWS prior to issuing take permits or authorizing finds. A FESA Section 10 take permit from the USFWS is required for any activity that could result in the take of a Federally listed animal species and that is not authorized as part of a Section 7 consultation. This does not apply to listed species on private land with no Federal funding or regulatory jurisdiction.

In addition to a list of endangered and threatened species that are legally protected under FESA, the USFWS has a list of proposed and candidate species. Proposed species are those for which a proposed rule to list them as endangered or threatened has been published in the Federal Register. A candidate species is one for which the USFWS currently has enough information to support a proposal to list it as a threatened or endangered species. Proposed species could be listed at any time, and many Federal agencies protect them as if they already are listed. Candidate species are not afforded legal protection under FESA.

Migratory Bird Treaty Act[8]

The Federal Migratory Bird Treaty Act (MBTA) prohibits the taking, hunting, killing, selling, and purchasing of migratory birds, parts of migratory birds, or their eggs and nests. As used in the MBTA, the term "take" is defined as "to pursue, hunt, shoot, capture, collect, kill, or attempt to pursue, hunt, shoot, capture, collect, or kill, unless the context otherwise requires." Most bird species native to North America are covered by this act.

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[7] 16 U.S.C. 1531-1544.
[8] 16 U.S.C. 703-712.

STATE

California Endangered Species Act[9]

The California Department of Fish and Wildlife (CDFW) has jurisdiction over threatened or endangered species that are formally listed by the State under the California Endangered Species Act (CESA). CESA is similar to FESA both in process and substance; it is intended to provide additional protection to threatened and endangered species in California. Species may be listed as threatened or endangered under both acts (in which case the provisions of both State and Federal laws apply) or under only one act. A candidate species is one that the Fish and Game Commission has formally noticed as being under review by CDFW for addition to the State list. Candidate species are protected by the provisions of CESA.

California Environmental Quality Act[10]

Under Section 15380 of the California Environmental Quality Act Guidelines (CEQA Guidelines),[11] a species not included on any formal list "shall nevertheless be considered rare or endangered if the species can be shown by a local agency to meet the criteria" for listing. This provides an agency with the ability to protect species from a project's potential impacts until the responsible government agencies have an opportunity to designate the species as protected if warranted.

California Species of Special Concern

The CDFW maintains an administrative list of Species of Special Concern (SSC),[12] defined as a "species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- Is extirpated[13] from the State, or, in the case of birds, in its primary seasonal or breeding role;
- Is listed as Federally, but not State-, threatened or endangered;
- Meets the State definition of threatened or endangered but has not formally been listed;

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[9] California Fish & Game Code Section 2050 et seq.
[10] California Public Resources Code Section 21000 et seq.
[11] California Code of Regulations, Title 14, Section 15000 et seq.
[12] California Fish and Wildlife, California Code of Regulations, Title 14, Division 1. Fully Protected species are listed in Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the Fish and Game Code, while protected amphibians and reptiles are listed in Chapter 5, Sections 41 and 42 (CCR; Title 14, Div. 1).
[13] "Extirpated" means that the species has been locally eliminated but may exist elsewhere and is not extinct.

- Is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;
- Has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status."

The CDFW's Nongame Wildlife Program is responsible for producing and updating SSC publications for mammals, birds, and reptiles and amphibians. Section 15380 of the CEQA Guidelines indicates that SSC should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outline therein. In contrast to species listed in the FESA or CESA, however, SSC have no formal legal status.

LOCAL

San Francisco Bird-Safe Building Ordinance

San Francisco Planning Code Section 139, *Standards for Bird-Safe Buildings*, focuses on buildings, both public and private, that create location-specific hazards and building feature-related hazards.

Location-specific hazards apply to buildings in, or within 300 feet of and having a direct line of sight to, an Urban Bird Refuge. An Urban Bird Refuge is defined as "open spaces two acres and larger dominated by vegetation, including vegetated landscaping, forest, meadows, grassland, or wetlands, or open water." Section 139 requires that 90 percent of glazing in the "Bird Collision Zone" (60 feet above grade, plus 60 feet above an adjacent vegetated roof two acres or larger) be treated (fritted,[14] stenciled, frosted, or covered with netting, screens, grids, or bird-visible UV patterns, as defined in Section 139). Lighting must also be minimized, and any wind generators must comply with Planning Department requirements, "including any monitoring of wildlife impacts that the Department may require."

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

- **Façade Treatments:** Bird-Safe Glazing Treatment is required such that the Bird Collision Zone consists of no more than 10 percent untreated glazing. Building owners are encouraged to concentrate permitted transparent glazing on the ground floor and lobby entrances to enhance visual interest for pedestrians.

[14] Fritted glass refers to ceramic or metal particles that are fused to glass to create an opaque or textured surface. The particles are generally opaque, and can be applied either to the entire surface of the glass, or just in particular areas to create decorative patterns.

- **Lighting Design:** Minimal lighting shall be used. Lighting shall be shielded. No uplighting shall be used. No event searchlights should be permitted for the property.
- **Wind Generators:** Sites must not feature horizontal access windmills or vertical access wind generators that do not appear solid.

In addition to regulating buildings that pose a locational hazard to birds (buildings in and within 300 feet of an Urban Bird Refuge), Section 139 applies similar standards to all new or substantially remodeled buildings in San Francisco with certain features (feature-related standards), such that all “free-standing glass walls, wind barriers, skywalks, balconies, and greenhouses on rooftops that have unbroken glazed segments 24 square feet and larger in size,” must be treated with Bird-Safe Glazing Treatment, such as fritting, netting, permanent stencils, frosted glass, exterior screens, physical grids placed on the exterior of glazing, or ultraviolet patterns visible to birds. For both locational and feature-related hazards, vertical elements of the window patterns should be at least 1/4-inch wide at a minimum spacing of 4 inches, or have horizontal elements at least 1/8-inch wide at a maximum spacing of 2 inches.

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 adopted and modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable threshold was used to determine whether implementing the project would result in a significant biological resources impact. Implementation of the proposed project and project variants would have a significant effect on biological resources if the project would:

J.1 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.

PROJECT FEATURES

The proposed project and project variants would demolish the existing 75 Howard Garage and construct, in its place, an approximately 31-story, 348-foot-tall, 432,253-gross-square-foot (gsf) residential, high-rise tower. The project sponsor is requesting a height reclassification from 200 feet to 350 feet. No buildings would be constructed in the proposed 4,780-sq.-ft. landscaped, publicly accessible open space at Block 3742/Lot 12 and the portion of the Steuart Street right-of-way south of Howard Street.

Proposed 75 Howard Street Tower

For both the proposed project and project variants, the proposed 31-story, high-rise tower would consist of two main elements: a horizontal podium element, surmounted by a vertical tower element. (See Figure 2.14: Proposed North Elevation; Figure 2.15: Proposed East Elevation; Figure 2.16: Proposed South Elevation; and Figure 2.17: Proposed West Elevation, in Chapter 2, Project Description, pp. 2.25-2.28.) San Francisco Bay, which qualifies as open water for the purposes of the Planning Code, is 375 feet to the east of the proposed building site and 227 feet east of the open space improvement site. There are no buildings and no buildings planned between the proposed building site and the open water. The proposed lobby, café, and café garden would face the Bay.

For both the proposed project and project variants, the podium element would be 7 stories (82-feet) tall with large panes of glass. The ground and second stories would be recessed about one to six feet from the wall plane of the podium above, forming a high, continuous band of glazing at the ground floor and second floor across a portion of the north façade, all of the east façade, and part of the south façade. These setbacks are intended to define a transparent, glass ground and second floor exterior, with a horizontal podium volume above. The lobby will have glass on only one side.

The 24-story vertical tower element together with the 7-story podium would rise a total of 31 stories (348 feet tall, plus an additional 8 feet for rooftop screening). Each floor would have one clear glass balcony facing the Bay, with white vertical and horizontal elements. A clear glass balcony would also face the other three directions on each floor. Floor 8 (the terrace level), the lowest floor within the tower element, would be further set back from the tower wall plane above it along the north and south facades to accentuate the transition between the podium and tower elements.

The building would likely be clad in glass and stone (granite or limestone) ranging from light to medium grey in color.

Proposed Publicly Accessible Open Space

As part of the proposed project, a new 4,780-sq.-ft. publicly accessible open space would be developed on the open space improvement site. San Francisco Bay, which qualifies as open water for the purposes of Planning Code Section 139, is 227 feet east of the open space improvement site. The open space would be bounded on all sides by sidewalks that would include landscaping and hardscape improvements.

In addition to this new open space, the project would install hardscape, landscape, and pedestrian improvements to the segment of Steuart Street south of Howard Street. This segment of Steuart Street would be narrowed, and the turnaround bulb at the southern terminus of Steuart Street would be reconfigured and incorporated into the design of the open space area. The resulting enlarged open area would be landscaped and would have seating. It may also include outdoor sculptures.

Implementation of either the proposed project or project variants would remove the street trees east of the existing parking garage, and add new street trees and hardscape improvements in the proposed 4,780-sq.-ft. open space improvement site to the east of the proposed new building.

Because the proposed high-rise tower that would be constructed with implementation of the proposed project or the project variants, discussed on pp. 2.20-2.24, would be the same in terms of building shape, location, exteriors, glazing, and landscaping, impacts on biological resources would be similar; thus, the impacts are evaluated jointly for this topic.

IMPACT EVALUATION

This section analyzes potential impacts on biological resources that may result from implementation of the proposed project or project variants.

Impact BI-1: Construction of the new high-rise tower under the proposed project and project variants would adversely impact birdlife, bird movement, and migration. ***(Less than Significant with Mitigation)***

As described in Environmental Setting, p. 4.J.5, birdstrikes result in millions of bird deaths annually and are a leading cause of worldwide declines in bird populations. Direct effects from birdstrikes include death or injury to the birds as they collide with lighted structures and other birds that are attracted to the light, as well as collisions with glass during the daytime. Indirect effects include delayed arrival at breeding or wintering grounds, and reduced energy stores necessary for migration, winter survival, or subsequent reproduction.[15] Avian collisions are a potentially significant impact, as they may affect special-status bird species. Recent research on bird collisions suggest that these collisions may contribute to the decline of some bird populations below self-sustaining levels or the substantial elimination of some local bird communities. Due to the proximity of the project site to the San Francisco Bay and because the proposed project building would directly face the Bay, unobstructed by other buildings, the proposed project and project variants would have a significant impact on birds, bird movement and migratory birds.

[15] TCDP EIR, p. 566.

The Board of Supervisors approved Planning Code amendments to incorporate bird-safe building standards into the Planning Code in September 2011. The new Planning Code Section 139, *Standards for Bird-Safe Buildings*, focuses on buildings that create both location-specific hazards and building feature-related hazards. Location-specific standards apply to buildings within 300 feet of an Urban Bird Refuge, including open spaces two acres and larger dominated by vegetation, wetlands, or open water, such as the San Francisco Bay. In such areas, 90 percent of glazing in the 60 feet above grade or above a vegetated roof two acres or larger must be treated (fritted, stenciled, frosted, or covered with netting, screens, grids, or bird-visible UV patterns). Lighting must be minimized, and wind generators must be vertical, with a solid-blade appearance.

The project site is located near San Francisco Bay, considered a Bird Refuge Area pursuant to Planning Code Section 139. Were the proposed project to be within 300 feet of the Bay shoreline, the locational standards of Planning Code Section 139 would apply to the proposed project and its variants. However, as San Francisco Bay is 375 feet to the east of the proposed building site, the locational-standards of Planning Code Section 139 do not apply. Rincon Park is not large enough to be considered an Urban Bird Refuge.

Planning Code Section 139 has feature-related standards, which apply to all new or substantially renovated buildings in San Francisco, including the proposed project. These feature-related standards require that free-standing glass walls, wind barriers, skywalks, balconies, and greenhouses on rooftops that have unbroken glass segments 24 square feet in size or greater use bird-safe glazing treatments on 100 percent of the feature (Planning Code 139(c)(2)). Thus, the building would have no free-standing glass walls, greenhouse, wind barriers or other clear barriers on rooftops or balconies without glazing treatments. The glass balconies shown in the plans for the proposed project and variants would be required to be treated with bird-safe glazing treatments, and any wind barriers for the café or on the outdoor decks would similarly require treatment.

Even with these feature-related standards in Planning Code Section 139 applied to the proposed project and variants, there could still be substantial impacts on birdlife as there are no existing or planned buildings between the proposed building site and the open water. By having an unobstructed path to the San Francisco Bay, birds would fly from the water or along the Bay and encounter a glass impediment in the birdstrike zone. The glazed surfaces of the proposed project, if not altered, would appear invisible to birds at night, and would increase the rate of birdstrikes above conditions with the existing parking garage. The proposed landscaping between the proposed building and the Bay would further invite birds to approach the proposed building. These impacts would be significant.

To reduce these impacts to a less-than-significant level, the proposed project and its variants would implement the locational standards of Planning Code Section 139 as Mitigation Measure

M-BI-1a, shown below. With this mitigation, the 7-story, 82-foot-tall horizontal podium element would be required to contain no more than 10 percent glazing without bird-safe treatments.

The project site is within the TCDP area; thus, the proposed project and its variants would be subject to the provisions of the TCDP EIR. Therefore, Improvement Measure I-BI-2 from the TCDP EIR, pp. 568-9, would also apply to the proposed project and its variants. Since the project site would be more hazardous to birds than the rest of the development sites, which are a greater distance from the San Francisco Bay, this improvement measure has been incorporated into the 75 Howard Street Project EIR as Mitigation Measure M-BI-1b, shown below. The implementation of Mitigation Measures M-BI-1a and M-BI-1b would ensure that the proposed project and its variants would not result in a significant impact related to birdstrikes, migrating birds, and local birdlife.

The open space improvement area might attract additional bird life to the building and therefore have an impact on avian wildlife; its small size, few trees, and proximity to The Embarcadero, however, would render its impact less than significant.

To ensure that tenants understand and follow the goals and objectives of these mitigation measures, Improvement Measure I-BI-A: Tenant Education, is identified. This improvement measure requires the owners of the building to provide tenants with a copy of the City's *Standards for Bird-Safe Buildings*.

Mitigation Measure M-BI-1a: Design Standards to Render Building Less Hazardous to Birds

The proposed project and project variants shall conform with the locational standards of Planning Code Section 139, *Standards for Bird-Safe Buildings,* specific only to the provisions applicable to locational hazards as described in Planning Code Section 139. Therefore:

- Glazing as a percentage of the façade: Bird-Safe Glazing Treatment is required such that the Bird Collision Zone [the building façade from grade and extending upwards for 60 feet, and glass façades directly adjacent to landscaped roofs 2 acres or larger and extending upwards 60 feet from the level of the subject roof] facing the San Francisco Bay consists of no more than 10 percent untreated glazing. Building owners would concentrate permitted transparent glazing on the ground floor and lobby entrances to enhance visual interest for pedestrians.
- Bird-Safe Glazing Treatments: these include fritting, permanent stencils, frosted glass, exterior screens, physical grids placed on the exterior of glazing or UV patterns visible to birds. Vertical elements of the pattern shall be at least ¼-inch wide with a maximum spacing of 4 inches, and horizontal elements shall be at least 1/8-inch wide with a maximum spacing of 2 inches. Equivalent treatments recommended by a qualified biologist may be used if approved by the Zoning Administrator. No glazing shall have a "Reflectivity Out" coefficient greater than 30 percent.

- Minimal lighting (limited to pedestrian safety needs) shall be used. Lighting shall be shielded. No uplighting should be used. No event searchlights should be permitted.
- No horizontal axis windmills or vertical axis wind generators that do not appear solid shall be used.

Mitigation Measure M-BI-1b: Night Lighting Minimization [TCDP EIR I-BI-2]

In compliance with the voluntary San Francisco Lights Out Program, the proposed project and variants would implement bird-safe building operations to prevent and minimize birdstrike impacts, including but not limited to the following measures:

- Reduce building lighting from exterior sources by:
  - Minimizing amount and visual impact of perimeter lighting and façade uplighting and avoid up-lighting of rooftop antennae and other tall equipment, as well as of any decorative features;
  - Installing motion-sensor lighting;
  - Utilizing minimum wattage fixtures to achieve required lighting levels.
- Reduce building lighting from interior sources by:
  - Dimming lights in lobbies, perimeter circulation areas, and atria;
  - Turning off all unnecessary lighting by 11:00 p.m. through sunrise, especially during peak migration periods (mid-March to early June and late August through late October);
  - Utilizing automatic controls (motion sensors, photo-sensors, etc.) to shut off lights in the evening when no one is present;
  - Encouraging the use of localized task lighting to reduce the need for more extensive overhead lighting;
  - Scheduling nightly maintenance to conclude by 11:00 p.m.;
  - Educating building residents and other users about the dangers of night lighting to birds.

Improvement Measure I-BI-A: Tenant Education

The project sponsor would provide their tenants with a copy of the City's *Standards for Bird-Safe Buildings*. This is required to educate the building's occupants about the risks to birds of nighttime lighting.

Impact BI-2: Construction of the new high-rise tower under the proposed project and project variants would not interfere with the movement of or have a substantial adverse effect on native resident bats. *(Less than Significant)*

The Bay Area is a known habitat for bats, and there is a potential for bats to live in the vicinity of the project site. The most likely species of bat to use the site as habitat would be Townsend's big-eared bat (*Corynorhinus townsendii townsendii),* which occurs in a variety of habitats and utilize caves, mines, tunnels, buildings, or other human-made structures for roosting. However, since this species prefers abandoned or underutilized buildings, and the existing structure is used daily as a public parking facility, it is unlikely that this bat species roosts on the site. Therefore, the impact of the proposed project or variants on any bat species would be less than significant. No mitigation is required.

CUMULATIVE IMPACT EVALUATION

Impact C-BI-1: The proposed project and project variants, in combination with reasonably foreseeable future development, would result in a considerable contribution to significant cumulative impacts related to avian wildlife. *(Less than Significant with Mitigation)*

The proposed project and project variants, combined with other foreseeable development projects along the San Francisco Bay shoreline, could result in significant cumulative impacts on avian wildlife. Projects located close to the San Francisco Bay shoreline could increase the risk of additional birdstrikes. Current reasonably foreseeable projects include the development project at 8 Washington Street, the various structures that may be proposed as part of the Golden State Warriors arena project on Pier 30-32 and the parking lot across The Embarcadero, and shoreline portions of the proposed Mission Rock Development under consideration on Pier 48 and Seawall Lot 337 south of China Basin channel.

Each of these projects, and any other development proposed in the future along the San Francisco Bay shoreline, would be subject to Planning Code Section 139, and those within 300 feet of San Francisco Bay would be subject to the more stringent location-based standards in the Code. These provisions would reduce any impacts on birds of future projects proposed along the Bay shoreline in the City to less-than-significant levels. Since the proposed project, with its mitigation measures, would similarly have a less-than-significant impact, it would not result in a cumulatively considerable contribution to a significant cumulative impact on biological resources in the project area when considered with other foreseeable projects in the vicinity.

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K. HYDROLOGY AND WATER QUALITY

INTRODUCTION

As described in Appendix A, the Initial Study, pp. 126-134, concluded that the proposed project and its project variants would have less-than-significant impacts on water quality standards or waste discharge requirements, would not deplete groundwater supplies or interfere substantially with groundwater recharge, would not substantially alter the existing drainage pattern of the site, would not create or contribute to runoff water which would exceed capacity of existing stormwater systems, and would not degrade water quality. The Initial Study also concluded that the proposed project or project variants would not place housing or structures within a 100-year flood hazard area, and would not expose people or structures to a significant risk of loss, injury or death due to flooding as a result of the failure of a levee or dam.

As explained on pp. 131-132 of the Initial Study, the increased probability of sea level rise that may occur as part of climate change could expose people or structures on the project site to increased risk of flooding. Therefore, this issue was determined to result in a potentially significant environmental impact requiring additional discussion in the EIR. Section K, Hydrology and Water Quality, describes the potential effects of the proposed project and project variants on the possibility of climate-change-induced sea level rise as a factor to be taken into account when analyzing the risk of flooding due to tsunami and seiche in low-lying areas near the shoreline of San Francisco Bay. The risk of rising sea level must be considered for development projects along the waterfront and nearby low-lying areas, such as 75 Howard Street.

In this section, the Environmental Setting describes the project site's elevation, identifies phenomena that cause or contribute to the risk of flooding, and discusses sea level rise, scientific assessments of potential increases in sea level due to climate change, and agency-developed scenarios of rising sea level. The regulatory framework related to sea level rise is provided, followed by the Impacts discussion.

ENVIRONMENTAL SETTING

PROJECT SITE ELEVATION

The project site is generally at an elevation between approximately -2 feet (ft.) and 0 ft., San Francisco City Datum (SFCD).[1] SFCD is a vertical elevation scale used in San Francisco. (All elevations in this section are expressed in SFCD unless otherwise indicated.)

At the eastern end[2] of the project site, the elevation is approximately 0.0 ft. SFCD at the base of the existing parking garage.[3] At the western wall of the existing parking garage, the elevation is about -0.5 ft. SFCD at the northeastern corner (at Howard Street), and about -1.0 ft. SFCD at the southeastern corner. The pavement of the cul-de-sac of Steuart Street is at about -0.5 ft. SFCD.

Along the western end of the project site (Block 3742/Lot 12), the elevation along The Embarcadero varies from about -1.0 ft. SFCD at the southern end, to approximately -2.0 ft. SFCD at the northern end, which is at the intersection of Howard Street and The Embarcadero.

In the overview, almost all of the project site is between approximately 0.0 ft. and -1.0 ft. SFCD. There is a small area, at the northeastern corner of the project site, which is approximately -2.0 ft. SFCD.

FLOODING AND NATURAL PHENOMENA THAT CONTRIBUTE TO FLOODING

Sea level rise is analyzed in relation to other natural phenomena that contribute to the risk of flooding. Several factors must be considered in evaluating flooding risk at the project site. These include stormwater, tides, waves, seiche, and tsunami. The net likely effect of stormwater, tides, and waves is summarized in floodplain maps.

Floodplain Maps

Flooding can be defined as inundation of normally dry land by the overflow of inland or tidal waters, the unusual and rapid accumulation or runoff of surface waters from any source, or

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[1] Treadwell & Rollo, Environmental Site Characterization, 75 Howard Street, San Francisco, CA, December 29, 2011, p. 1. A copy of this document is available for public review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2011.1122E.

[2] As previously mentioned, for the purposes of this EIR, Howard Street is referred to as running east-west. Steuart Street is referred to as running north-south.

[3] Martin M. Ron Associates, Site Survey of a Portion of Assessor's Block Nos. 3741 & 3742 for Paramount Group, Inc., undated (printed in 2013). A copy of this document is available for public review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2011.1122E.

mudflows caused by flooding.[4] The 100-year flood is the flood with a 1.0 percent probability of occurring in a given year. The Federal Emergency Management Agency (FEMA, a part of the U.S. Department of Homeland Security) issues 100-year floodplain maps. The 100-year maps are an integral part of an insurance and regulatory structure. FEMA manages the National Flood Insurance Program (NFIP). Under the NFIP, the Federal government provides financial backing for affordable flood insurance, in exchange for the local government adopting and enforcing floodplain management regulations.[5] In addition to insurance purposes, the FEMA 100-year flood maps are widely used to assess flood risk. FEMA prepared Preliminary Flood Insurance Rate Maps (FIRM) for the City in 2007.[6] FEMA is in the process of updating its maps for the City, and is expected to provide the maps soon.

The City and County of San Francisco participates in the NFIP. The Mayor and Board of Supervisors approved a Floodplain Management Ordinance and prepared accompanying flood zone maps in 2008 that regulate new construction and substantial improvements to structures in flood-prone areas.[7] The Board of Supervisors amended the Floodplain Management Ordinance in response to FEMA's comments.[8] The Port Building Code, through its incorporation of applicable portions of the State Building Code and the City's Floodplain Management Ordinance, imposes seismic requirements on construction on flood-prone areas.

The City's floodplain map[9] and Floodplain Management Ordinance apply to construction of the proposed project. According to the City's floodplain map, the 75 Howard Street project site is not within a potential flood hazard area.

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4 Revised draft San Francisco Floodplain Management Ordinance, p. 5, available at http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances10/o0056-10.pdf, accessed on February 28, 2013.

5 City and County of San Francisco, Office of the City Administrator, "San Francisco Floodplain Management Program Fact Sheet" (one page), revised January 25, 2011 (hereinafter "1/25/2011 Floodplain Management Program Fact Sheet Summary"), available at http://sfgsa.org/index.aspx?page=828, under "Floodplain Management Program Fact Sheet - 1 pg (PDF)," accessed on February 24, 2013.

6 For more detail, see City and County of San Francisco, Office of the City Administrator, "San Francisco Floodplain Management Program Fact Sheet" (four pages), revised January 25, 2011 (hereinafter "1/25/2011 Floodplain Management Program Fact Sheet Extended"), available at http://sfgsa.org/index.aspx?page=828, under "Floodplain Management Program Fact Sheet Extended – 4 pgs (PDF)," accessed on February 24, 2013.

7 1/25/2011 Floodplain Management Program Fact Sheet Summary.

8 Ordinance 56-10 (2010), available at http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances10/o0056-10.pdf, accessed February 24, 2013.

9 The San Francisco's Interim Floodplain Maps of July 2008 are available at http://www.sfgsa.org/index.aspx?page=828, accessed February 28, 2013. The map for northeastern San Francisco (map 120A) can be viewed from this page via link.

Site Factors

There are no natural waterways within or near the project site that could cause stream-related flooding. The project site is not located within an area that would be flooded as the result of failure of a levee or dam. In addition, the relatively flat and developed area of the project site is not subject to mudflow.

Across The Embarcadero from the project site, a seawall forms a barrier to San Francisco Bay. Pier 14 and the structures associated with the Ferry Building (which jut out into the Bay) would interfere to some extent with high waves headed toward The Embarcadero. The seawall and piers are exposed to the tides, wind waves, swells, ship-wake waves, and tsunamis. During storm events, the action of tides and wind-driven waves may combine, as may other much-less-frequent events, such as tsunamis and seiches (defined below on p. 4.K.6 and p. 4.K.8, respectively).

San Francisco Bay experiences the diurnal (twice daily) tidal cycle, because it is directly connected to the Pacific Ocean (via the Golden Gate). Both the Pacific Ocean and San Francisco Bay generate waves that impact the seawall by the project site. Pacific Ocean waves are attenuated within the Bay. Wind-generated waves typically have a shorter period than ocean waves, and ship-wake waves are smaller.

Flood Estimates Taking into Account Storms, Tides, Waves

Flooding risk analyses have been performed for nearby projects. Their findings are relevant to the setting of the proposed project. The Exploratorium Relocation Project at Piers 15 and 17 is less than a mile to the north. The Exploratorium is east of The Embarcadero, opposite the endpoints of Green and Union streets. *The Exploratorium Relocation Project Final EIR*[10] included an analysis of total water levels (TWL) in relation to that project. The *Final EIR*

[10] City and County of San Francisco Planning Department, *The Exploratoriaum Relocation Project Final Environmental Imapct Report*, FEIR Certification Date July 9, 2009 (hereinafter "*The Exploratoriaum Relocation Project FEIR*"), Section III.I, Hydrology and Water Quality. A copy of this document is available on the San Francisco Planning Department's website: http://tinyurl.com/sfceqadocs, under the Case File No. 2006.1073E.

estimates TWL as 9.6 ft. during a 100-year event for both Piers 15 and 17, measured using the North American Vertical Datum of 1988 reference (NAVD88).[11]

This estimate can be used to evaluate the difference in elevation between the project site and a 100-year event. SFCD is 11.32 ft. above NAVD88, plus or minus about two hundredths of a foot at different locations in the City.[12] The variations are due to the ellipsoid shape of the measurement systems (and the earth's crust). (A hundredth of a foot is approximately 1/8 inch.) As described in more detail under "Project Site Elevation," above, the existing elevation of almost all of the project site is between approximately 0.0 ft. and -1.0 ft. San Francisco City Datum (SFCD), or approximately 11.3 ft. to 10.3 ft. NAVD88. The lowest area of the project site (around -2.0 SFCD or 9.3 ft. NAVD88) is at the northeast corner of Block 3742/Lot 012; this is the area proposed as an open space street improvement.

The proposed location of the residential tower (now occupied by the parking garage) is at the higher end of the project site. The proposed location of the residential tower varies from approximately 0.0 ft. SFCD on the eastern side (i.e., 11.3 ft. NAVD88) to -0.5 ft. SFCD (10.8 ft. NAVD88) to -1.0 SFCD (10.3 ft. NAVD88) on the western side. Using the *Exploratorium Relocation Project Final EIR* estimate of TWL as 9.6 ft. during a 100-year event, the ground level at the proposed building would be approximately 1.7 ft. to 0.7 ft. higher than the 100-year event. The low-point of the project site in the proposed open space street improvement area would be approximately 0.3 feet below the 100-year event (as the 100-year event was estimated for the Exploratorium project), but no structures are proposed in this area.

The proposed Candlestick Point - Hunters Point Development Project is approximately 4 to 5 miles south of the project site along the City's Bay shoreline. A technical study for the *Candlestick Point - Hunters Point EIR* estimated a 100-year high tide at the Hunters Point tidal

[11] North American Vertical Datum of 1988 (NAVD88) is a fixed reference point (vertical elevation) adopted as the official, civilian, vertical datum for elevations determined by Federal surveying. Historically, the average (mean) sea level or some variation of sea level has served as a reference point for elevations. One problem with using sea level is that it changes. In addition, the earth is not spherical, but has an ellipsoid shape, and has local variations due to uplift and sinking of portions of the earth's crust. Therefore, sea level in relation to the earth's crust varies. A vertical datum system not based on sea level avoids these problems. NAVD88 is based on a point in Quebec, Canada. Sources: U.S. Geologic Survey, http://water.usgs.gov/ADR_Defs_2005.pdf, pp. 8-9, accessed February 28, 2013.

[12] Telephone conference with Bruce Storrs, San Francisco City Surveyor, and Turnstone Consulting, May 26, 2010.

gauge of -1.77 ft. SFCD.[13] Using this data leads to similar conclusions (within 0.07 ft.) about the different parts of the project site as the Exploratorium estimate. The proposed building site would be above the 100-year flood level, and a small area of the in the proposed open space street improvement area would not.

The approved 8 Washington Street/Seawall Lot 351 project is about 1/3 mile north of the 75 Howard Street project, along The Embarcadero. The 8 Washington Street project is a residential tower with retail and underground parking levels. Unlike the Exploratorium Relocation Project and the Candlestick Point - Hunters Point Development Project, there was no technical estimate of flood height at the site. Rather, the EIR for the 8 Washington Street project followed a similar analysis to that above, using estimates prepared for the Exploratorium Relocation Project and the Candlestick Point - Hunters Point Development Project as comparison points.[14] The existing 8 Washington Street project site is generally at an elevation between -0.95 ft. and 0 ft. SFCD.[15] These elevations are very similar to the majority of the 75 Howard project site (-1.0 ft. to 0.0 ft. SFCD). The conclusions for 8 Washington Street regarding relationship to the 100-year floodplain were therefore very similar to those for 75 Howard.[16]

Tsunami and Seiche

Tsunami

A tsunami is an ocean wave originating from an underwater disturbance, such as earth movement due to an earthquake, volcanic eruption, landslide, or explosion. Based on a coastal engineering

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13 This was equivalent to equivalent to +6.7 ft. expressed in the old National Geodetic Vertical Datum or NGVD29. City and County of San Francisco Planning Department, *Candlestick Point - Hunters Point Shipyard Phase II Development Plan Project, Draft Environmental Impact Report*, Case No. 2007.0946E, State Clearinghouse No. 2007082168, DEIR publication date, November 12, 2009 (hereinafter "*Candlestick Point - Hunters Point DEIR*"), p. III.M-13, citing Moffatt & Nichol, *Candlestick Point/Hunters Point Development Project Initial Shoreline Assessment*, prepared for Lennar Urban, February 2009. Copies of these documents are on file for public review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2007.0946E.

14 City and County of San Francisco Planning Department, 8 Washington Street/Seawall Lot 351 Project, Final Environmental Impact Report, Case No. 2007.0030E, State Clearinghouse No.2007122027, DEIR publication date June 15, 2011, FEIR certification date May 2012 (hereinafter "*8 Washington Street DEIR*"), Section IV.I, Sea Level Rise. A copy of this document is available on the San Francisco Planning Department's website: http://tinyurl.com/sfceqadocs, under Case File No. 2007.0030E.

15 *8 Washington Street FEIR*, p. IV.I.1.

16 *8 Washington Street FEIR*, p. IV.I.4.

study for a ferry terminal at Treasure Island, there have been three tsunamis associated with a wave height or run-up within San Francisco Bay of 1 ft. or more since 1851:[17]

- March 31, 1898. Earthquake on the Rodgers Creek fault in Northern California. Maximum run-up of 2 ft. observed in the Bay (location not specified).
- May 22, 1960. Earthquake in south central Chile. Maximum observed run-up was 2.9 ft. in San Francisco and 1.9 ft. at Alameda.
- March 28, 1964. Earthquake in the Gulf of Alaska, Alaska Peninsula. Maximum observed run-up was 3.6 feet at San Francisco and 2.6 ft. at Alameda. The 1964 Alaska event represents an event with a return period (the estimated interval of time between events) of more than 300 years.

San Francisco's *Emergency Response Plan* reports that a 100-year return period tsunami wave could have a run-up elevation of 8.2 ft. (National Geodetic Vertical Datum, or NGVD29) at the Golden Gate Bridge, but this wave run-up would dissipate as it moved eastward.[18] The estimated *worst-case* tsunami run-up at the project site would be 8.04 ft. (likely NGVD).[19] The expected *100-year* tsunami run-up height at South Basin (several miles south of the project site) is +4.8 ft. NGVD29 or -3.8 ft. SFCD.[20]

Because the Bay Area's earthquake faults are strike-slip faults, a tsunami created by local faults is not a major threat.[21] The major threat is from distant earthquakes along subduction zones[22] elsewhere in the Pacific Basin, including Alaska. Since 1877, Alaskan earthquakes have produced tsunami run-ups in the Bay Area nine times, with run-ups of less than 1 ft. Moffat & Nichol, a marine engineering firm, estimated that a tsunami with a maximum wave height of

[17] Skidmore, Owings & Merrill, LLP and Moffat & Nichol, *Treasure Island Ferry Terminal Project: Coastal Engineering Assessment*, prepared for Water Emergency Transportation Authority, August 2009, p. 17. A copy of this document is on file for public review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2007.0903E.

[18] City and County of San Francisco, *Emergency Response Plan: An Element of the CCSF Emergency Management Program, Tsunami Response Annex,* September 2008 (hereinafter "*San Francisco Emergency Response Plan")*, p. 24, available at http://www.sfdem.org/ftp/uploadedfiles/DEM/PlansReports/TsunamiAnnex-2008.pdf, accessed February 28, 2013.

[19] *San Francisco Emergency Response Plan*, Attachment B, "City & County of San Francisco Coastal Tsunami Inundation Map," p. 30. This map was prepared by the California State Office of Emergency Services.

[20] *Candlestick Point - Hunters Point DEIR*, p. III.M-14 (relying on Garcia, A.W. and Houston, J.R., Type 16 Flood Insurance Study: Tsuanmi Predictions for Monterey and San Francisco Bays and Puget Sound, U.S. Army Corps of Engineers Technical Report H-75-17, 1975, Figure 58). The EIR authors converted mean sea level elevations to NGVD29 and SFCD.

[21] *Candlestick Point - Hunters Point DEIR*, p. 24.

[22] The earth's crust, or lithosphere, is made up of tectonic plates. Tectonic plates make up the continents and also the floors of the oceans. A subduction zone is where two tectonic plates meet, and one plate moves under the other plate. Subduction zones are associated with earthquakes, volcanoes, and mountain building.

1.2 ft. at Treasure Island, and an associated run-up of approximately 2.4 ft., would have a return period of 150 years or more.[23] While the estimates for Treasure Island would not directly apply to the project site, they are informative.

Based on San Francisco's *Emergency Response Plan, Tsunami Response Annex, Attachment B map*, the project site is subject to inundation during the worst-case tsunami. Such a tsunami would have a very long return period.

Seiche

A seiche is an oscillation of an enclosed or semi-enclosed body of water, such as a lake, bay, or harbor. Seiche may be caused by earthquakes, tsunamis, tides, strong winds, and changes in atmospheric pressure. Triggering forces at specific frequencies relative to the size of the basin are key to generating seiche.

Tidal records of San Francisco Bay, maintained for more than a century, indicate that no damaging seiche has occurred during this period.[24] The 1906 earthquake, which caused a seiche of approximately 4 inches, had a magnitude of about 8.3 on the Richter scale. It is unlikely that an earthquake of greater magnitude would occur in the Bay Area. Therefore, a seiche larger than 4 inches is considered unlikely.

SEA LEVEL RISE

History and Local Conditions

The major land store of freshwater is the water frozen in glaciers, ice caps, and ice sheets. The relocation of water between these freshwater ice stores and the oceans, among other factors, has resulting in widely varying sea levels over geologic time. According to the Intergovernmental Panel on Climate Change (IPCC), "Global average sea level in the last interglacial period (about 125,000 years ago) was *likely* 4 to 6 m [meters] higher than during the 20th century, mainly due to the retreat of polar ice."[25] Subsequently, during the Ice Age, "Sea level was more than 100 m lower during the glacial periods because of the ice sheets covering large parts of the [Northern

[23] *Treasure Island Ferry Terminal Project: Coastal Engineering Assessment*, p. 17.
[24] *Candlestick Point - Hunters Point DEIR*, p. III.M-14.
[25] IPCC, 2007. *Summary for Policymakers,* in *Climate Change 2007: The Physical Science Basis, Contribution of Working Group I to the Fourth Assessment of the Intergovernmental Panel on Climate Change*, (Solomon, S., et al, eds.), (Cambridge University Press, Cambridge, United Kingdom, and New York, NY, USA) (hereinafter "*2007 IPCC Summary for Policymakers*"), p. 9 (emphasis in original).

Hemisphere] continents."[26] Following the peak of the last Ice Age about 12,000 years ago, the Earth entered its present inter-glacial warming period. It is thought that sea level stabilized within a meter or so of its present value over the last several thousand years. Finally, according to an IPCC technical report, "The present day retreat of glaciers and ice caps is making a substantial contribution to sea level rise. This is expected to continue during the next 100 years. Their contribution should decrease in subsequent centuries as this store of freshwater diminishes."[27]

Sea levels are further complicated because the weight of ice during the Ice Ages pushed land masses downward. As that ice disappeared, the land masses rose (in an over-simplified way, floating above deeper materials in the Earth). To this day, continental masses continue this slow rise.

In addition to the large regional or planetary processes affecting global average sea level, local changes in sea level occur. Local changes in sea level may differ from global averages for various reasons, including, but not limited to, changes in ground surface elevation due to tectonic uplift, subsidence, and wind and wave patterns.

Sea level at San Francisco is monitored by the National Oceanic and Atmospheric Administration (NOAA) which provides historical data from 1987 through 2011, collected at the San Francisco tide station. NOAA calculates a mean rise of 1.92 millimeters/year (mm/yr) (with a 95 percent confidence interval from 2.12 mm/year to 1.72 mm/yr) based on monthly mean sea level data from 1897 to 2011.[28] An increase of approximately 2 mm/yr is equivalent to an increase of 0.66 feet, or about 8 inches, in 100 years.[29]

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[26] Solomon, S., et al., 2007. *Technical Summary*, in *Climate Change 2007: The Physical Science Basis, Contribution of Working Group I to the Fourth Assessment of the Intergovernmental Panel on Climate Change*, (Solomon, S., et al., eds.), (Cambridge University Press, Cambridge, United Kingdom, and New York, NY, USA) (hereinafter "*2007 Technical Summary IPCC Working Group I*"), p. 51 (Cover note: The Technical Summary is "[a] report accepted by Working Group I of the Intergovernmental Panel on Climate Change but not approved in detail. . . . 'Acceptance' . . . signifies that the material has not been subject to line-by-line discussion and agreement, but nevertheless presents a comprehensive, objective and balanced view of the subject matter.")

[27] *2007 Technical Summary IPCC Working Group I*, p. 51.

[28] National Atmospheric and Oceanic Administration, web site, "Updated Mean Sea Level Trend, [station] 9414290 San Francisco, California," available at http://www.tidesandcurrents.noaa.gov/sltrends/sltrends_update.shtml?stnid=9414290, accessed February 21, 2013.

[29] National Atmospheric and Oceanic Administration, web site, "Mean Sea Level Trend, [station] 9414290 San Francisco, California," available at http://www.tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?stnid=9414290, accessed February 21, 2013.

Sea Level Rise Estimates and Scenarios

Background

This subsection begins with a discussion of the IPCC's work on sea level rise, which is one of the key foundations for estimates and planning assumptions adopted by other agencies. This section then discusses the National Academy of Sciences report on sea level rise for the West Coast, which appears to be the most detailed and recent study available for California. The next subsection discusses estimates and planning assumptions adopted by various regulatory agencies.

IPCC's Role

The IPCC is a non-governmental body associated with the United Nations that assesses global warming and climate change. It reviews worldwide scientific work on the physical aspects and potential environmental impacts of climate change, and proposes policy recommendations. To date, the IPCC has issued four major reports, the last in 2007 (the Fourth Assessment Report). The IPCC is in the process of preparing the Fifth Assessment Report, which is due to be published in parts during 2013 and, for most of the parts, during 2014. The first portion to be published, an update to the physical science basis, is scheduled for publication in September 2013.[30] The Synthesis Report, which is the culmination of the assessment cycle, is not due to be published until October 2014.[31] Therefore, this EIR relies upon the 2007 Fourth Assessment Report.

According to the IPCC, over the period of 1961 to 2003, the average rate of global mean sea level rise is estimated from tide gauge data to be 1.8 +/- 0.5 mm/yr.[32] One factor contributing to the rise, the average thermal expansion of the oceans (due to warming), is estimated to cause 0.42 +/- 0.12 mm/yr of the total increase (with significant variations by decade). However, the other climate-related factors do not explain the total amount of change measured with tide gauge observations. The IPCC has not determined the factors contributing to sea level rise that are not related to climate change.

The IPCC asserts that the rate of sea level rise accelerated between the mid-19th and the mid-20th centuries. There are regional differences, with sea level rising in some regions and falling in others. Satellite data have the advantage of not being affected by the rising and falling of land where tidal gauges are located. Satellite data indicate that during the period of 1993 to 2003, sea level rose 3.1 +/- 0.7 mm/yr, which more closely matches the estimated contributions of ocean

[30] IPCC, "Preparations for AR5 enter final stage," available at www.ipcc.ch/, accessed February 28, 2013.
[31] IPCC, "IPCC enters new stage of Fifth Assessment Report review," press release, dated October 5, 2012, available at www.ipcc.ch/pdf/ar5/ar5_sod_pr.pdf, accessed February 28, 2013.
[32] *2007 Technical Summary IPCC Working Group I*, pp. 49-50.

thermal expansion and changes in land ice. The IPCC states, "Whether the faster rate for 1993 to 2003 compared to 1961 to 2003 reflects decadal variability or an increase in the longer-term trend is unclear."[33]

Wöppleman *et al.* addressed the problem of tide gauges being affected by land rising and falling.[34] Wöppleman's team used Global Positioning Satellites (GPS) to obtain a GPS-corrected set of "absolute" or geocentric sea level trends.[35] Wöppleman's team measured the increase in global average sea level as 1.31 ± 0.30 mm/yr over a recent 7.7-year period (ending 2005). This measurement is lower than the IPCC's estimates and data, and may contradict other studies which indicate a recent acceleration of sea level rise.

<u>IPCC Forecasts</u>

The IPCC's Fourth Assessment Report estimates sea level rise based on "a hierarchy of models that encompasses a simple climate model, several Earth Models of intermediate complexity, and a large number of Atmosphere-Ocean General Circulation Models, as well as observational constraints."[36] The report estimates a sea level rise of 7 to 23 inches by the year 2100, with the caveat that there is insufficient published scientific information to estimate a maximum.

<u>National Research Council Committee's Report on Sea Level Rise for the West Coast</u>

As described under "Regulatory Framework" below, in November 2008, Governor Arnold Schwarzenegger issued Executive Order S-13-08.[37] The Governor ordered several State agencies to request the National Academy of Sciences to convene a panel to prepare a California Sea Level Rise Assessment Report. Ultimately, ten Federal and State agencies requested the National Research Council (associated with the National Academy of Sciences) to study sea level rise for California, Oregon, and the State of Washington, and some of those agencies[38] helped fund the

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[33] *2007 Technical Summary IPCC Working Group I*, p. 49.

[34] G.B. Wöppleman *et al.*, "Geocentric Sea Level Trend Estimates from GPS Analysis at Relevant Tide Gauges Worldwide," *Global and Planetary Change*, 57(2007):396-406.

[35] G.B. Wöppleman *et al.* (2007), Abstract. ". . . [W]e have shown that GPS data analysis has reached the maturity to provide useful information to separate land motion from oceanic processes recorded by the tide gauges or to correct these latter."

[36] IPCC, 2007. *Climate Change 2007: Synthesis Report* in *Fourth Assessment of the Intergovernmental Panel on Climate Change* (Cambridge University Press, Cambridge, United Kingdom, and New York, NY, USA) (hereinafter "*2007 IPCC Synthesis Report*"), p. 45, Table 3.1, note (a).

[37] Executive Order S-13-08, full text available at http://gov.ca.gov/news.php?id=11036, accessed February 28, 2013.

[38] The requesting agencies included: California Department of Water Resources, California Energy Commission, California Department of Transportation, California State Water Resources Control Board, California Ocean Protection Council, Oregon Watershed Enhancement Board, Washington Department of Ecology, National Oceanic and Atmospheric Administration (NOAA), U.S. Army Corps of Engineers (USACE), and U.S. Geological Survey (USGS).

study. The National Research Council participants[39] ("the NRC Committee") issued the report in 2012.[40]

NRC Committee Forecasts

The Committee reviewed the IPCC Fourth Assessment Report and other scientific studies. The Committee combined several approaches, and used methods different than the IPCC, at least in part.[41] A warming climate causes sea level to rise because: (1) warming causes sea water to expand, increasing ocean volume, and (2) melting of land ice transfers water to the ocean.[42] On the first point, the expansion of sea water due to warming (i.e., the steric contribution to sea level rise), the Committee used the same global models as the IPCC, but used the models directly. In contrast, the IPCC "used lower-order models to develop estimates for emission scenarios that were not simulated in global climate models."[43] On the second point, the Committee used extrapolation methods regarding melting of glaciers and polar ice (i.e., the cryospheric contribution to sea level rise), whereas the IPCC used climate models.[44]

After completing its review of global sea level rise, the Committee focused on West Coast factors that make local differences. These include: (1) land rising from the residual effects of melting of the ancient ice sheets covering North America, and (2) tectonic-caused changes. For the second

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[39] The Committee on Sea Level Rise in California, Oregon, and Washington; and Board on Earth Sciences and Resources; and Ocean Studies Board (apparently part of the Division on Earth and Life Studies) of the National Research Council (which is part of the National Academies), consist mostly of academics, with a few members from private industry, assisted by staff of National Research Council for all three (Committee and the two Boards).

[40] Committee on Sea Level Rise in California, Oregon, and Washington; Board on Earth Sciences and Resources; Ocean Studies Board; Division on Earth and Life Studies of the National Research Council, "Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future," 2012, available from The National Academies Press at http://www.nap.edu/catalog.php?record_id=13389, accessed February 28, 2013 (hereinafter "*Sea-Level Rise for the Coasts of California, Oregon, and Washington*").

[41] The report explains: "The committee's results differ from the IPCC (2007) results because the committee considered more recent scientific observations and modeling and also used different methods to make projections. For example, although the steric contributions were drawn from the same global climate models used in IPCC (2007), the committee used the global climate model results directly, whereas IPCC (2007) used lower-order models to develop estimates for emission scenarios that were not simulated in global climate models (e.g., A1FI [a scenario in the IPCC report]). In addition, the committee used extrapolation methods to project the cryosphere component of sea-level rise, whereas IPCC (2007) used climate models." *Sea-Level Rise for the Coasts of California, Oregon, and Washington*, p. 95.

[42] *Sea-Level Rise for the Coasts of California, Oregon, and Washington*, p. 2.

[43] *Sea-Level Rise for the Coasts of California, Oregon, and Washington*, p. 95.

[44] *Sea-Level Rise for the Coasts of California, Oregon, and Washington*, p. 95.

factor, from Cape Mendicino to the south, the California coast "is sinking at an average rate of about 1 mm/year, although GPS-measured rates vary widely (-3.7–0.6 mm/year)."[45]

Without going into further detail about the large number of technical judgments and interpretations in the Committee report, the Committee's estimates for sea level rise along the California coast south of Cape Mendicino, including San Francisco, are as follows:[46]

> Ranges of estimated sea level rise, relative to year 2000 levels:
>
> By 2030, less than 2 inches to 12 inches (4 to 30 centimeters [cm])
> By 2050, 5 to 24 inches (12 to 61 cm)
> By 2100, 17 to 66 inches (42 to 167 cm)

The Committee observed that its "projected values for California are somewhat lower than the Vermeer and Rahmstorf (2009) projections, which are being used by California state agencies on an interim basis for coastal planning."[47] This refers to the projections used by the Sea-Level Rise Task Force of the Coastal and Ocean Working Group of the California Climate Action Team in 2010, as discussed below, under "Regulatory Framework."

Sea Level Rise Scenarios from Government Agencies

State and Regional

Various State and regional agencies are involved in assessing climate change effects on California and developing ways to mitigate such effects, including greenhouse gas reduction. This subsection focuses on agency forecasts of sea level rise made for planning purposes.

San Francisco Bay Conservation and Development Commission

The San Francisco Bay Conservation and Development Commission (BCDC) has jurisdiction over development within 100 feet of the Bay shoreline, which does not include the project site. BCDC plays a key role in planning for protection of San Francisco Bay. BCDC, with funding provided by the California Energy Commission's Public Interest Energy Research Program and the United States Geologic Survey, developed potential sea level rise maps. BCDC maps show areas vulnerable to sea level rise, assuming a forecast of 16 inches of sea level rise by 2050 and

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[45] *Sea-Level Rise for the Coasts of California, Oregon, and Washington*, p. 3.
[46] *Sea-Level Rise for the Coasts of California, Oregon, and Washington*, pp. 4 and 6.
[47] *Sea-Level Rise for the Coasts of California, Oregon, and Washington*, p. 101. The Committee cites CO-CAT (Sea-Level Rise Task Force of the Coastal and Ocean Working Group of the California Climate Action Team), 2010, State of California Sea-Level Rise Interim Guidance Document, October 2010 (18 pp.).

55 inches by 2100. The inundation zone for 16 inches of sea level rise in 2050 excludes the project site.[48] The inundation zone with 55 inches of sea level rise includes the project site.[49]

State Lands Commission

In a similar vein, the State Lands Commission has directed its staff to evaluate proposed development projects in relation to sea level rise scenarios of 16 inches and 55 inches, and perform a variety of other analytical and planning activities to address potential sea level rise.[50]

<u>Local</u>

The City has recognized the risk of climate-induced sea level rise. For example, San Francisco's 2004 *Climate Action Plan* discusses the risk of sea level rise for the City[51] and describes a large number of measures to reduce greenhouse gases. Relying upon the IPCC's 2001 Third Assessment Report, the *Climate Action Plan* mentions the potential sea level rise range of 4 to 36 inches.[52] (However, the IPCC's 2001 Third Assessment Report has been superseded by the IPCC's Fourth Assessment, as discussed above.)

In a similar vein, the Port of San Francisco considers the potential impact of sea level rise in evaluating projects within its jurisdiction. For example, in December 2009, the Port prepared an Initial Study for the proposed Brannan St. Wharf/Pier 36 project which considers increased sea level rise (relying on BCDC's scenarios of 16 inches by 2050 and 55 inches by 2100),[53] and included changes in the project on that basis.[54]

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[48] BCDC, web page: http://www.bcdc.ca.gov/planning/climate_change/maps/16/cbay.pdf, accessed February 23, 2013.

[49] BCDC, web page: http://www.bcdc.ca.gov/planning/climate_change/maps/55/cbay.pdf, accessed February 23, 2013.

[50] State Lands Commission, Board agenda item 49 for the December 10, 2010 (describing various staff activities for preparedness and assessment of projects using estimates of 16 inches and 55 inches of sea level rise), available at www.slc.ca.gov/Sea_Level_Rise/index.html, accessed February 16, 2013.

[51] San Francisco Department of the Environment and San Francisco Public Utilities Commission, *Climate Action Plan for San Francisco, Local Actions to Reduce Greenhouse Emissions,* September 2004 ("*Climate Action Plan for San Francisco")*, available at http://www.sfenvironment.org/sites/default/fliers/files/climateactionplan.pdf, accessed March 8, 2013, pp. 1-8 through 1-10.

[52] *Climate Action Plan for San Francisco*, p. 1-8.

[53] San Francisco Planning Department, Notice of Preparation of an Environmental Impact Report and Initial Study, Case No. 2009.0418E, Brannan St. Wharf/Pier 36, December 23, 2009 ("Brannan St. Wharf/Pier 36 NOP"), p. 76.

[54] Brannan St. Wharf/Pier 36 NOP, pp. 77-78.

REGULATORY FRAMEWORK

The following paragraphs describe Federal, State, and regional agency policies and plans applicable to the project site, or to lands bordering San Francisco Bay in general, but not to the project site.

FEDERAL

Federal Emergency Management Agency

FEMA is responsible for management of floodplain areas defined as the lowland and relatively flat areas adjoining inland and coastal waters subject to a 1 percent or greater chance of flooding in any given year (the 100-year floodplain).[55] As explained above, FEMA manages the NFIP.

STATE

Sea Level Rise and Executive Order S-13-08

In November 2008, Governor Arnold Schwarzenegger issued Executive Order S-13-08.[56] The order is intended to coordinate State agency efforts to identify risks to California's resources from sea level rise, ensure that State agencies take sea level rise into account when planning new infrastructure, and develop a State Climate Adaptation Strategy, among other things. Key points include the following: (1) The Governor ordered several State agencies, including the Resources Agency, Department of Water Resources, Energy Commission, and coastal management agencies, to request the National Academy of Sciences to convene a panel. The panel was to prepare a California Sea Level Rise Assessment Report by December 1, 2010; however, the report was released in 2012 (and is discussed above).[57] (2) State agencies that are planning construction projects must consider a range of sea level scenarios for the years 2050 and 2100 to assess 'vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise.' (Ordering paragraph 5) (3) The Resources Agency was ordered to prepare a State Climate Adaptation Strategy by June 30, 2009.[58] (4) The Office of Planning and Research was ordered to provide State land use planning guidance related to sea level rise and other climate change

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[55] Executive Order 11988, May 24, 1988, at 42 Fed Reg. 26951.

[56] Executive Order S-13-08, full text available at http://gov.ca.gov/news.php?id=11036, accessed February 17, 2013.

[57] State of California Sea-Level Rise Interim Guidance Document, available at http://www.water.ca.gov/climatechange/docs/SLR_GuidanceDocument_SAT_Responses.pdf, accessed February 17, 2013.

[58] See *2009 California Climate Adaptation Strategy*, available at http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF, accessed March 8, 2013.

impacts. These requirements provide land use planning guidance to local agencies considering approving proposed developments near the ocean and San Francisco Bay. Several of these key points are discussed in this section.

California Climate Action Team (CO-CAT)

Pursuant to Executive Order S-13-08, the Sea-Level Rise Task Force of the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT) developed interim guidance for State agencies, with science support from the Ocean Protection Council's Science Advisory Team and the California Ocean Science Trust.[59] This was the interim guidance to be used prior to the NRC Committee study discussed under "Sea Level Rise Estimates and Scenarios," above. The CO-CAT guidance recommended using the ranges of sea level rise presented by Vermeer and Rahmstorf in the December 2009 Proceedings of National Research Council "as a starting place and select SLR [sea level rise] values based on agency and context-specific considerations of risk tolerance and adaptive capacity."[60] These estimates for global mean sea level rise (not specific to San Francisco or California) have, for 2050, an average of the models' sea level rise of 14 inches, and a range of 10 to 17 inches. For 2100, the average of models is 47 inches, and the range is 31 to 69 inches, from low case to high case. Again, the National Research Council work[61] discussed above was more rigorous and more recent, and should be regarded as superseding the Sea-Level Rise Interim Guidance Document.[62]

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59 Sea-Level Rise Task Force of the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT), "Sea-Level Rise Interim Guidance Document," October 2010, available at opc.ca.gov/webmaster/ftp/pdf/agenda_items/20110311/12.SLR_Resolution/SRL-Guidance-Document.pdf accessed February 17, 2013.

60 Sea-Level Rise Interim Guidance Document, p. 3.

61 *Sea-Level Rise for the Coasts of California, Oregon, and Washington*.

62 *Cf*. BCDC, *Bay Plan*, section "Climate Change," Finding (c): "Global surface temperature increases are accelerating the rate of sea level rise worldwide through thermal expansion of ocean waters and melting of land-based ice (e.g., ice sheets and glaciers). Bay water level is likely to rise by a corresponding amount. In the last century, sea level in the Bay rose nearly eight inches. Current science-based projections of global sea level rise over the next century vary widely. Using the IPCC greenhouse gas emission scenarios, in 2010 the California Climate Action Team (CAT) developed sea level rise projections (relative to sea level in 2000) for the State that range from 10 to 17 inches by 2050, 17 to 32 inches by 2070, and 31 to 69 inches at the end of the century. The CAT has recognized that it may not be appropriate to set definitive sea level rise projections, and, based on a variety of factors, State agencies may use different sea level rise projections. Although the CAT values are generally recognized as the best science-based sea level rise projections for California, scientific uncertainty remains regarding the pace and amount of sea level rise. Moreover, melting of the Greenland and Antarctic ice sheet may not be reflected well in current sea level rise projections. As additional data are collected and analyzed, sea level rise projections will likely change over time. *The National Academy of Sciences is in the process of developing a Sea Level Rise Assessment Report that will address the potential impacts of sea level rise on coastal areas throughout the United States, including California and the Bay Area.*" (Emphasis added.) The National Research Council is associated with the National Academy of Sciences.

California Emergency Management Agency

The California Emergency Management Agency issued the 2010 State Multi-Hazard Mitigation Plan.[63] The State Multi-Hazard Mitigation Plan contains a land use planning principle reflected in the following statement of the California's Climate Adaptation Strategy:[64]

> #3, Land Use Planning:
> Consider project alternatives that avoid significant new development in areas that cannot be adequately protected (planning, permitting, development, and building) from flooding, wildfire and erosion due to climate change. The most risk-averse approach for minimizing the adverse effects of sea level rise and storm activities is to carefully consider new development within areas vulnerable to inundation and erosion. State agencies should generally not plan, develop, or build any new significant structure in a place where that structure will require significant protection from sea level rise, storm surges, or coastal erosion during the expected life of the structure. However, vulnerable shoreline areas containing existing development that have regionally significant economic, cultural, or social value may have to be protected, and in-fill development in these areas may be accommodated. State agencies should incorporate this policy into their decisions and other levels of government are also encouraged to do so.

REGIONAL

San Francisco Bay Conservation and Development Commission

BCDC has jurisdiction over development within 100 feet of the shoreline, which does not include the project site. Therefore, the following are not applicable to the proposed project, but may be informative.

BCDC's Climate Change Program includes research, policy development, and capacity building. In October 2011, BCDC adopted a Climate Change Amendment to its Bay Plan.[65] Although the

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[63] In addition, the California Emergency Management Agency issued the Adaptation Planning Guide (APG), which provides guidance for proactively addressing the consequences of climate change. The APG implements the 2010 State Multi-hazard Mitigation Plan. California Emergency Management Agency, "Climate Related Hazards Planning," web page, available at http://www.calema.ca.gov/HazardMitigation/Pages/Climate-Change-and-Adaptation.aspx, accessed February 23, 2013.

[64] CEMA, 2010 State Multi-Hazard Mitigation Plan, p. 111, available at http://hazardmitigation.calema.ca.gov/plan/state_multi-hazard_mitigation_plan_shmp, accessed on February 24, 2013.

[65] BCDC, Bay Plan Amendment No. 1-08. See BCDC web page, "Climate Change Bay Plan Amendment," available at http://www.bcdc.ca.gov/proposed_bay_plan/bp_amend_1-08.shtml, accessed February 23, 2013.

project site falls outside BCDC's jurisdiction,[66] the amendments to the Bay Plan provide relevant considerations when determining whether development in areas vulnerable to future climate-induced shoreline flooding should be allowed.[67] The Bay Plan states:[68]

> Climate Change Finding (w): w. . . . The California Climate Adaptation Strategy . . . further recommends that state agencies should generally not plan, develop, or build any new significant structure in a place where that structure will require significant protection from sea-level rise, storm surges, or coastal erosion during the expected life of the structure. However, the strategy also acknowledges that vulnerable shoreline areas containing existing development or proposed for new development that has or will have regionally significant economic, cultural, or social value may have to be protected, and infill development in these areas should be closely scrutinized and may be accommodated. The strategy recommends that state agencies should incorporate this policy into their decisions. If agencies plan, permit, develop or build any new structures in hazard zones, the California Climate Adaptation Strategy recommends that agencies employ or encourage innovative engineering and design solutions so that the structures are resilient to potential flood or erosion events, or can be easily relocated or removed to allow for progressive adaptation to sea level rise, flood and erosion.
>
> Climate Change Policy (1): "1. The Commission intends that the Bay Plan Climate Change findings and policies will be used as follows: a. The findings and policies apply only to projects and activities located within the following areas: San Francisco Bay, the 100-foot shoreline band, . . ."
>
> Climate Change Policy (2): "2. When planning shoreline areas or designing larger shoreline projects, a risk assessment should be prepared by a qualified engineer and should be based on the estimated 100-year flood elevation that takes into account the best estimates of future sea level rise and current flood protection and planned flood protection that will be funded and constructed when needed to provide protection for the proposed project or shoreline area. A range of sea level rise projections for mid-century and end of century based on the best scientific data available should be used in the risk assessment. Inundation maps used for the risk assessment should be prepared under the direction of a qualified engineer. The risk assessment should identify all types of potential flooding,

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66 BCDC's jurisdiction extends to the first 100 feet inland from the shoreline around San Francisco Bay. The closest part of the project site to the edge of the Bay is at the intersection of Howard Street and The Embarcadero, proposed to be an open space improvement site. The distance from that point directly east (northeast) along the crosswalk is greater than 100 feet. See Figure 2.3: Proposed Site Plan, p. 2.6.

67 Memorandum to Commissioners and Alternates, from Will Travis, Executive Director, et al, re: Revised Staff Report and Staff Recommendation for Proposed Bay Plan Amendment 1-08 Concerning Climate Change, September 23, 2011, available at www.bcdc.ca.gov/proposed_bay_plan/10-01Recom.pdf, accessed February 23, 2013. See also, related documents at BCDC's "Climate Change Bay Plan Amendment" web page, available at http://www.bcdc.ca.gov/proposed_bay_plan/bp_amend_1-08.shtml, accessed February 23, 2013.

68 BCDC, San Francisco Bay Plan, available at http://www.bcdc.ca.gov/laws_plans/plans/sfbay_plan.shtml, accessed February 23, 2013.

degrees of uncertainty, consequences of defense failure, and risks to existing habitat from proposed flood protection devices."

Climate Change Policy (3): "3. To protect public safety and ecosystem services, within areas that a risk assessment determines are vulnerable to future shoreline flooding that threatens public safety, all projects—other than repairs of existing facilities, small projects that do not increase risks to public safety, interim projects and infill projects within existing urbanized areas—should be designed to be resilient to a mid-century sea level rise projection. If it is likely the project will remain in place longer than mid-century, an adaptive management plan should be developed to address the long-term impacts that will arise based on a risk assessment using the best available science-based projection for sea level rise at the end of the century."

Climate Change Policy (7): "7. Until a regional sea level rise adaptation strategy can be completed, the Commission should evaluate each project proposed in vulnerable areas on a case-by-case basis to determine the project's public benefits, resilience to flooding, and capacity to adapt to climate change impacts. The following specific types of projects have regional benefits, advance regional goals, and should be encouraged, if their regional benefits and their advancement of regional goals outweigh the risk from flooding:

a. remediation of existing environmental degradation or contamination, particularly on a closed military base;
b. a transportation facility, public utility or other critical infrastructure that is necessary for existing development or to serve planned development;
c. a project that will concentrate employment or housing near existing or committed transit service (whether by public or private funds or as part of a project), particularly within those Priority Development Areas that are established by the Association of Bay Area Governments and endorsed by the Commission, and that includes a financial strategy for flood protection that will minimize the burdens on the public and a sea level rise adaptation strategy that will adequately provide for the resilience and sustainability of the project over its designed lifespan; and
d. a natural resource restoration or environmental enhancement project. The following specific types of projects should be encouraged if they do not negatively impact the Bay and do not increase risks to public safety:
e. repairs of an existing facility;
f. a small project;
g. a use that is interim in nature and either can be easily removed or relocated to higher ground or can be amortized within a period before removal or relocation of the proposed use would be necessary; and
h. a public park."

LOCAL

San Francisco Emergency Response Plan

The *City's Emergency Response Plan, Tsunami Response Annex*,[69] provides planning suggestions and evacuation procedures to assist San Franciscans with dealing with tsunami, and consequently, other flooding risks associated with Bay and ocean water levels.

Port of San Francisco

The small triangle of land at the corner of Howard Street and The Embarcadero is under the jurisdiction of the Port of San Francisco.[70] This is Seawall Lot 347-S, which is part of the Steuart Street Mixed Use Opportunity Area in the Port's *Waterfront Land Use Plan*. The Plan designates open space as an acceptable use for Seawall Lot 347-S.[71]

As discussed in the Environmental Setting, the Port considers the potential impact of sea level rise in evaluating projects within its jurisdiction. In an Initial Study for the proposed Brannan St. Wharf/Pier 36 project, the Port considered increased sea level rise (relying on BCDC's scenarios of 16 inches by 2050 and 55 inches by 2100),[72] and included changes in the project on that basis.[73]

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 adopted and modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable threshold was used to determine whether implementing the project would result in a significant impact on hydrology and water quality. Implementation of the proposed

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[69] City and County of San Francisco, *Emergency Response Plan: An Element of the CCSF Emergency Management Program*, *Tsunami Response Annex*, September. 2008, available at http://www.sfdem.org/modules/ShowDocument.aspx?documentid=67, accessed February 24, 2013.

[70] BCDC, *San Francisco Waterfront Plan*, available at www.bcdc.ca.gov/pdf/sfwsap/SFWSAP_Final.pdf, accessed February 23, 2013, Figure 2, p. 27. See also parcel SWL 347-S, as shown on Special Area Plan Map 3.

[71] Port of San Francisco, Waterfront Land Use Plan, p. 130, available on a link at http://www.sf-port.org/index.aspx?page=199, accessed February 28, 2013.

[72] San Francisco Planning Department, Notice of Preparation of an Environmental Impact Report and Initial Study, Case No. 2009.0418E, Brannan St. Wharf/Pier 36, December 23, 2009, p. 76.

[73] Brannan St. Wharf/Pier 36 NOP, pp. 77-78.

project and project variants would have a significant effect on hydrology and water quality if the project would:

K.1 Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow.

K.2 Expose people or structures to increased risk of flooding due to climate-induced sea level rise.

PROJECT FEATURES

The proposed project and project variants would provide street-level pedestrian access to the proposed building. In addition, there would be access into the below-ground, two-level parking garage through a vehicular entrance at the west end of the proposed building along Howard Street, near the same northwest corner location as the entrance to the existing 75 Howard Garage. Vehicles would travel down the garage ramp to Basement Level 1, where cars would be mechanically parked by valet in stacked spaces provided on Basement Level 2 below. With respect to flooding risks, the important factor is that the entrance to the garage would be at street level, above the 100-year floodplain.

The proposed project would have an estimated depth of excavation for the basement garage levels and mat foundation of up to 59 feet below the ground surface. Both project variants would have an estimated depth of excavation for the basement garage levels of up to 70 feet below the ground surface (11 feet deeper than the proposed project).

APPROACH TO ANALYSIS

Sea level rise is analyzed in relation to other natural phenomena that contribute to the risk of flooding. Several factors must be considered in evaluating flooding risk at the project site. These include stormwater, tides, waves, seiche and tsunami. In the analysis of impacts, the impact of the proposed project is first discussed in relation to these events without assuming future sea level rise. In combination with these tsunami, seiche, and storm surge events, future potential climate-induced sea level rise could pose risks of inundation to existing and proposed development located in low-lying areas close to San Francisco Bay like the project site.

The science of estimating sea level rise continues through a process of refinement. The rate of potential future sea level rise is difficult to project, and estimates vary substantially among numerous scientific studies available on climate change and sea level rise. The analysis presented here is based on a reasonable range of sea level rise estimates.

IMPACT EVALUATION

Impact HY-1: The proposed project and project variants would not expose people or structures to a significant risk of inundation by seiche, tsunami, or mudflow. *(Less than Significant)*

The project site is generally flat and is not flanked by hills that could result in mudflows onto the site. Therefore, there is no risk of mudflow affecting the project or people using it.

As discussed in the Environmental Setting, FEMA has prepared a preliminary Flood Insurance Rate Map for San Francisco. The City joined the NFIP in April 2010, and FEMA has not issued its final FIRM. The project site is not within the 100-year flood area (V zone) on FEMA's preliminary FIRM, nor within any special hazard flood area on the City's 2008 interim floodplain map.

As discussed in the Environmental Setting, estimates from other environmental impact analyses can be used to evaluate the difference in elevation between the project site and a 100-year event. SFCD is 11.32 feet above NAVD88, plus or minus about two-hundredths of a foot at different locations in the City. (A hundredth of a foot is approximately 1/8 inch.) The existing elevation at the project site varies from -2.0 to 0.0 ft. SFCD, or approximately 9.3 ft. to 11.3 ft. NAVD88.

The existing elevation of almost all of the project site, including the proposed location of the residential tower, is between approximately 0.0 ft. and -1.0 ft. SFCD, or approximately 11.3 ft. to 10.3 ft. NAVD88. The lowest area of the project site (around -2.0 SFCD or 9.3 ft. NAVD88) is at the northeast corner of parcel 3742/Lot 012; this is the area proposed as an open space street improvement.

The proposed location of the residential tower (now occupied by the parking garage) is at the higher end of the project site. The proposed location of the residential tower varies from approximately 0.0 ft. SFCD on the eastern side (or 11.3 ft. NAVD88) to -0.5 (10.8 ft. NAVD88) to -1.0 SFCD (10.3 ft. NAVD88) on the western side. Using the *Exploratorium Relocation Project Final EIR* estimate of TWL as 9.6 ft. during a 100-year event, the ground level at the proposed building would be approximately 1.7 ft. to 0.7 ft. higher than the 100-year event. The low-point of the project site in the proposed open space street improvement area would be approximately 0.3 feet below the 100-year event (as the 100-year event was estimated for the Exploratorium project), but no structures are proposed in this area. [74]

[74] It is possible that the final design would include raising this area.

A technical study for the *Candlestick Point - Hunters Point EIR* estimated a 100-year high tide at the Hunters Point tidal gauge of -1.77 ft. SFCD.[75] Using this data leads to similar conclusions (within 0.07 ft.) about the different parts of the project site as the Exploratorium estimate. The proposed building site would be above the 100-year flood level, and a small area of the proposed open space street improvement would not.

As discussed in the Environmental Setting, the proposed 8 Washington Street/Seawall Lot 351 project is several blocks north of the 75 Howard Street project, along The Embarcadero. The proposed project is a residential tower with retail and underground parking levels. Lacking a site-specific technical estimate of flood height at the site, the EIR for the 8 Washington Street project followed a similar analysis to that above, using estimates prepared for the the Exploratorium Relocation Project and the Candlestick Point - Hunters Point Development Project as comparison points. The 8 Washington Street project site is generally at an elevation between -0.95 ft. and 0 ft. SFCD,[76] very similar to the majority of the 75 Howard project site (-1.0 ft. to 0.0 ft. SFCD). The EIR's conclusions for the 8 Washington Street project regarding sea level rise impacts were therefore very similar to the conclusions for the 75 Howard project.[77]

As discussed in the Environmental Setting, the potential for seiche at the project site is likely less than 4 inches, with an earthquake of approximately 8.3 magnitude on the Richter scale. The difference between the ground level at the proposed building and a 100-year flood event is 1.7 feet to 0.7 ft (from western to eastern ends). If a seiche occurred at the same time as the 100-year flood event, the building would still be above it.

Turning to tsunami risk, as discussed in the Environmental Setting, San Francisco's *Emergency Response Plan* identifies a maximum, worst case, 100-year tsunami run-up at the project site of about 8 ft. The project site would be subject to inundation during a 100-year tsunami event. Under the proposed project and project variants, such a tsunami would flood the first floor of the building and the underground parking levels. However, the proposed project would not substantially change or worsen this existing condition, but would expose residents and businesses not now on the site to this hazard. As discussed above, because the Bay Area's earthquake faults are strike-slip faults (where two plates move laterally against one another), a tsunami created by local faults is not a major threat. The major threat is from distant earthquakes along subduction faults (where one plate slides under another) elsewhere in the Pacific Basin, including the State of

[75] This was equivalent to +6.7 ft. expressed in the old National Geodetic Vertical Datum or NGVD29. *Candlestick Point - Hunters Point DEIR*, p. III.M-13, citing Moffatt & Nichol, *Candlestick Point/Hunters Point Development Project Initial Shoreline Assessment*, prepared for Lennar Urban, February 2009. Copies of these documents are on file for public review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2007.0946E.
[76] *8 Washington Street DEIR*, p. IV.I.1.
[77] *8 Washington Street DEIR*, pp. IV.I.15-IV.I.16.

Washington; the west coasts of Canada and Alaska; and Japan. A tsunami from Alaska would take four or five hours to reach the Bay. There is a well-established warning system in place that would provide early notification of an advancing tsunami or seiche and thus allow for evacuation of people. The warning system includes outdoor sirens and loudspeakers, and a media-related announcement system for local TV, cable TV, and radio stations. For these reasons, the risk of tsunami would be less than significant. In addition, the shape of the Bay, with its narrow neck at the Golden Gate opening into a wide expanse of bay, would dissipate the energy of a tsunami wave.

For these reasons, this impact would be less than significant.

Impact HY-2: The proposed project and project variants would expose people or structures to increased risk of flooding due to climate-induced sea level rise. *(Significant and Unavoidable)*

As described in the Environmental Setting, the NRC Committee on Sea Level Rise in California, Oregon, and Washington; the Board on Earth Sciences and Resources; and the Ocean Studies Board of the National Research Council estimated sea level rise along the California coast south of Cape Mendocino, including San Francisco, as follows:[78]

> Ranges of estimated sea level rise, relative to year 2000 levels:
>
> By 2030, less than 2 inches to 12 inches (4 to 30 cm)
> By 2050, 5 to 24 inches (12 to 61 cm)
> By 2100, 17 to 66 inches (42 to 167 cm)

The portion of the project site proposed for the high rise tower has an elevation of approximately 0.7 ft. to 1.7 ft. SFCD, or approximately 8.4 to 20.4 inches, above a 100-year flood event. Therefore, under the high end of the 2050 increased sea level rise scenario, the project site would be inundated during the 100-year event. Also, under most of the range of the 2100 increased sea-level-rise scenario, the project site would be inundated during the 100-year event. The proposed project would expose people or structures to increased risk of flooding due to climate-induced sea level rise.

As discussed in the Environmental Setting, various California and regional agencies have adopted planning scenarios of 16 inches of sea level rise by 2050 and 55 inches of sea level rise by 2100. Under an assumed sea level rise of 16 inches for 2050, a portion of the project site would be

[78] *Sea-Level Rise for the Coasts of California, Oregon, and Washington*, pp. 4 and 6.

inundated during the 100-year event.[79] Under an assumed sea level rise of 55 inches for 2100, the project site would be inundated during the 100-year event.

Under the planning principles of the California Emergency Management Agency (which apply to State agencies) and BCDC (which do not apply to the project site), siting new development in an area subject to flooding exacerbated by sea level rise is discouraged. However, the project site is an infill site, close to transit. The planning principles cite such circumstances as factors to weigh in agency decision-making about approving or denying approval for such projects.

Measures such as raising the underlying grade of the project site above the potential water level anticipated with sea level rise combined with a 100-year event, or constructing a berm or levee around the project site to protect it against inundation, are not available to this urban infill site, as they would be to a large development site. To address the potential for inundation of the site under the year 2100 sea level rise scenario of 55 inches in the event of a 100-year flood, the level of the ground floor would have to be elevated above the projected level of inundation, about 35 inches above grade. This height would impede the easy and level flow of pedestrians and wheelchairs into the ground floor, and would require interior or exterior steps, landings, ramps and/or lifts to comply with Americans with Disabilities Act (ADA) and Building Code requirements. Such features would substantially reduce the amount and marketability of ground-floor space and, with the elevated position of the ground floor above the street, would impede visual, spatial and physical connectivity between pedestrians at street level and ground floor activities. The goals and objectives of the ADA promoting barrier-free access for all would be better achieved with grade-level ground floor access, as would urban design plans and policies promoting a pedestrian-oriented street environment (e.g., "Improve pedestrian areas by providing human scale and interest"[80]). To address potential flooding of the underground parking garage, the entrance to the garage would have to be similarly elevated. Such elevation might be difficult or impossible from a traffic engineering standpoint. For these reasons, raising the elevation of this project site alone, without an area-wide approach that similarly raised the grade of the entire area, would not be feasible. Therefore, this impact is considered significant and unavoidable. Although Mitigation Measure M-H-2, presented below, would not reduce this impact to a less-than-significant level, it would serve to reduce this risk to residents and businesses.

Mitigation Measure M-HY-2: Emergency Plan

The project sponsor, in conjunction with the building manager, shall prepare an initial Emergency Plan that shall include at a minimum: monitoring by the building manager of agency forecasts of tsunamis and floods, methods for notifying residents and businesses

[79] If the base of the proposed residential tower would be at 1.7 ft. SFCD, then it would be above the 100-year flood event.

[80] City of San Francisco, *General Plan Urban Design Element*, Objective 4, Policy 13.

of such risks, and evacuation plans. The plan shall be prepared prior to occupancy of any part of the proposed project. The building manager shall maintain and update the Emergency Plan annually. The building manager shall provide educational meetings for residents and businesses at least three times per year and conduct drills regarding the Emergency Plan at least once per year.

CUMULATIVE IMPACT EVALUATION

Impact C-HY-1: The proposed project and project variants would not result in a significant cumulative impact related to increased risk of flooding due to climate-induced sea level rise. *(Less than Significant)*

When considered with past, present, and reasonably foreseeable future development projects along and near the San Francisco waterfront, the proposed project and project variants would not cause or substantially contribute to any increased risk of flooding due to sea level rise for any other structure or its occupants, because the proposed tower would not displace, or divert, flood water substantially more than the existing parking garage. Also, the project would not change groundwater levels, as explained below.

The displacement of groundwater due to the below-grade parking lots would not change groundwater levels, and would not contribute to a cumulative displacement of groundwater due to other projects built below the water table in San Francisco. Groundwater is not constrained around the proposed project. Groundwater levels are heavily influenced by the nearby Bay and its tidal fluctuations. Therefore, there would be no adverse cumulative effects on neighboring properties from one-time groundwater displacement.

The proposed project and project variants' contribution to cumulative impacts with respect to sea level rise would not result in a cumulatively considerable contribution to significant cumulative sea level rise impacts.

5. OTHER CEQA CONSIDERATIONS

A. GROWTH-INDUCING IMPACTS

As required by Section 15126.2(d) of the CEQA Guidelines, an EIR must consider the ways in which the proposed project could directly or indirectly foster economic or population growth, or the construction of additional housing. Growth-inducing impacts can result from the elimination of obstacles to growth; through increased stimulation of economic activity that would, in turn, generate increased employment or demand for housing and public services; or as a result of policies or measures which do not effectively minimize premature or unplanned growth. Examples of projects likely to have substantial or adverse growth-inducing effects include expansion of infrastructure systems beyond what is needed to serve current demand in the project vicinity, and development of new residential uses in areas that are currently sparsely developed or undeveloped.

The following discussion considers how implementation of the proposed project could potentially affect growth elsewhere in San Francisco and in the region. The proposed project also includes two variants as options that the project sponsor may choose to implement – the Public Parking Variant and the Residential/Hotel Mixed Use Variant.

The proposed project and project variants would intensify development on the 1.2-acre project site through a change in land use – from parking to a mix of residential and retail uses and associated public open space improvements (proposed project and Public Parking Variant) or a new hotel use plus new residential and retail uses and associated public open space improvements (Residential/Hotel Mixed Use Variant). The proposed project would entail demolition of the 7-story, 540-space parking garage and construction of an approximately 31-story, 348-foot-tall, 432,253-gsf residential high-rise tower containing 186 market rate units and approximately 5,658 gsf of retail use. The tower would have a 26,701-gsf parking garage located on two below-grade levels accessed from Howard Street. The garage would contain 172 accessory parking spaces for residential units, 2 parking spaces assigned for commercial uses, and 1 car-share space, for a total of 175 parking spaces. The proposed project also includes landscaping and paving improvements, which would result in a new 4,780-sq.-ft. landscaped, publicly accessible open space at Block 3742/Lot 12 and the portion of the Steuart Street right-of-way south of Howard Street.

The proposed Public Parking Variant and the Residential/Hotel Mixed Use Variant would both provide a total of 268 parking spaces to partially offset the 540 public spaces lost by demolition of the parking garage. Under the proposed Public Parking Variant, other land uses would be the same as those under the proposed project. The proposed Residential/Hotel Mixed Use Variant would provide a mix of approximately 109 residential units and 82 hotel rooms with associated hotel amenity space. Hotel rooms would be located on floors 3 through 7 and floors 10 through 12, and residential units would be located on floors 13 through 31. Similar to the proposed project, the Residential/Hotel Mixed Use Variant would include a lobby, restaurant, and amenity space on the first and second floors. As with the proposed project, the project variants would include the development of the open space improvement site.

As described in Chapter 2, Project Description, p. 2.33, implementation of the proposed project and project variants would require a zoning map amendment to Map HT01 to reflect the proposed height reclassification for the project site, which is in a 200-S Height and Bulk District. The project sponsor would also require Planning Code Section 309 exceptions to the bulk controls for the “upper tower,” the off-street accessory parking ratios, and the rear yard depth; and variances from the exposure requirements for dwelling units and from the width limits for parking and loading access. The rezoning, Section 309 exceptions, and variances would address potential conflicts with the Planning Code related to height limits as well as other land use controls at the project site. Unlike the proposed project, the project variants would require Conditional Use authorization for the development of 96 non-accessory public parking spaces. The proposed Residential/Hotel Mixed Use Variant would also require Conditional Use authorization to develop a hotel with fewer than 200 rooms.

The proposed project and project variants would change the mix and types of uses on the project site, and intensify development by introducing new residential and retail uses to the project site. The proposed Residential/Hotel Mixed Use Variant would introduce a new hotel use in addition to the proposed residential and retail uses. Population growth in the project vicinity would be a direct impact of the proposed project and the project variants. The basic objective of the proposed project and project variants is to support and contribute to the developing mixed use character of the *Transit Center District Plan* area by developing in-fill, high-density residential development in the downtown near transit. As described in more detail in the Initial Study on p. 46 (see Appendix A), if implemented, the proposed project and the proposed Public Parking Variant would add approximately 424 new residents by adding up to 186 new housing units, while the proposed Residential/Hotel Mixed Use Variant would add approximately 249 new residents in the project vicinity by adding up to 109 new housing units. Existing public parking uses would be eliminated under the proposed project. Under both project variants existing public parking uses would be reduced. The proposed project and project variants would increase the City’s overall housing stock. However, implementation of the proposed project and project variants would not represent significant growth in housing in the context of the City as a whole.

The number of households in the City is projected to increase by 54,020 between 2010 and 2030.[1] The maximum of 186 housing units proposed in the project would represent less than 1.0 percent (0.3 percent) of the projected household growth in the City between 2010 and 2030, and a negligible percentage (0.04 percent) of the projected household growth in the region (504,600 households) between 2010 and 2030.

The proposed project would increase net employment at the site by about 77 jobs; the Public Parking Variant would increase net employment at the site by about 73 jobs; and the Residential/Hotel Mixed Use Variant would increase net employment at the site by about 127 jobs. Because the total number of employees at the project site would increase, the proposed project and project variants would cause some growth in employment that would result in housing demand in the City or region. As described in more detail in the Initial Study on pp. 50-51 (see Appendix A), the maximum number of housing units that would be in demand as a result of the proposed project and project variants (approximately 107 housing units under the proposed Residential/Hotel Mixed Use Variant) would represent less than 1.0 percent (0.2 percent) of projected household growth in the City between 2010 and 2030, and a negligible percentage (0.02 percent) of projected household growth in the region between 2010 and 2030.

The project site is located in an urban area that is already served by the City's municipal infrastructure and public services as well as retail and other services for residential uses. No expansion to municipal infrastructure or public services is included and none would be required to accommodate new development associated with the proposed project and its variants, either directly or indirectly. The proposed project and its variants would not result in development of new public services that would accommodate significant growth in the City or the region.

ABAG *Projections 2009* includes the project site and its immediate vicinity as a Priority Development Area (PDA), suitable for high-density housing near transit with existing or planned support services and infrastructure.[2] The project site is within the "Downtown Neighborhoods and Transit Infill Areas" PDA. While the proposed project itself represents growth, the provision of new housing would not encourage substantial new growth in the region that has not previously been projected.

The proposed project would provide for high-density residential growth (up to approximately 186 units per acre) supported by existing community facilities, public services, transit service and infrastructure, and public utilities. To the extent that this growth would have been otherwise accommodated at other Bay Area locations, the proposed project would focus growth on an

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1 Association of Bay Area Governments (ABAG), Projections and Priorities 2009, Building Momentum, San Francisco Bay Area Population, Households, and Job Forecasts (hereinafter *Projections 2009*), p. 92.

2 *Projections 2009*, p. 19, pp. 85-86.

underused infill site near existing regional employment centers and existing and planned transit facilities, infrastructure, retail services, and cultural and recreational facilities.

The proposed project would contribute to meeting ABAG's regional housing objectives and would conform with ABAG's regional goals to focus growth and development by creating compact communities with a diversity of housing, jobs, activities and services; increasing housing supply; improving housing affordability by meeting the City's inclusionary affordable housing requirements; and increasing transportation efficiency and choices through the development of a Driveway Operations Plan to improve local traffic conditions and the incorporation of improvement measures that encourage and promote transit use and bicycling such that the overall transportation system moves more people more efficiently.[3]

As discussed in more detail in the Initial Study on pp. 51-53 under Impact C-PH-1 (see Appendix A), population increases attributable to the implementation of the proposed project or project variants, in combination with projects proposed under the TCDP that would develop new residential units and intensify business and employment activity in downtown, would not contribute to a significant cumulative impact related to the direct or indirect inducement of substantial population growth. Based on the preceding discussion and analysis, the proposed project and project variants would not have a substantial growth-inducing impact, and no mitigation measures are necessary.

B. SIGNIFICANT UNAVOIDABLE IMPACTS

In accordance with Section 21067 of CEQA and with Sections 15126(b) and 15126.2(b) of the CEQA Guidelines, the purpose of this section is to identify significant environmental impacts that could not be eliminated or reduced to less-than-significant levels by implementation of mitigation measures included in the proposed project or identified in Chapter 4, Environmental Setting, Impacts, and Mitigation. The findings of significant impacts are subject to final determination by the San Francisco Planning Commission as part of the certification process for this EIR. If necessary, this chapter will be revised in the Final EIR to reflect the findings of the Planning Commission.

As identified in Section 4.B, Land Use and Land Use Planning, under Impact LU-1, the project site is located in a 200-S Height and Bulk District, and implementation of the proposed project or project variants would require a height reclassification to develop the proposed 348-foot-tall high-rise tower. The proposed increase in the height limit on the project site is not consistent with the site's existing zoning and the zoning of properties surrounding the project site and would conflict

[3] ABAG administers the FOCUS program, in partnerships with MTC, BCDC, and BAAQMD. FOCUS is a regional development and conservation strategy that promotes more compact land use patterns in the Bay Area.

with a land use regulation adopted for the purpose of avoiding or mitigating an environmental effect. There are no feasible mitigation measures for the project as proposed; therefore, the impact would remain significant and unavoidable.

As identified in Section 4.C, Aesthetics, under Impact AE-1, the effect of the scale and prominence of the proposed new development or its variants on existing scenic vistas of San Francisco's Downtown as viewed from the eastern waterfront and Bay Bridge would be considered significant. No effective mitigation measure is available that would avoid or substantially reduce the significant impact of the proposed project and project variants; therefore, the impact would remain significant and unavoidable.

As identified in Section 4.E, Transportation and Circulation, under Impact C-TR-1, the vehicle trips generated by the proposed project and its variants would contribute considerably to the cumulative impact at the Spear Street/Howard Street intersection. As discussed under Mitigation Measure M-C-TR-1, a reduction in the extent of or the removal of the bulb-outs proposed along Spear Street to allow for striping of left turn pockets on the northbound and southbound Spear Street approaches and optimization of the signal timing plan at the Spear Street/Howard Street intersection would change the intersection operation to LOS D during the weekday p.m. peak hour and would reduce the cumulative impacts from the proposed project and its variants to a less-than-significant level. This mitigation measure was identified in the Transit Center District Plan EIR as *Mitigation Measure PRP-TRAFFIC-1i*, and its implementation was considered uncertain and infeasible. Therefore, mitigation to less-than-significant levels is infeasible, and the impact would remain significant and unavoidable.

As identified in Section 4.H, Shadow, under Impact WS-1, implementation of the proposed project or project variants would cast net new shadow on the northern and central portions of Rincon Park in the afternoon on a daily basis throughout the year. No mitigation is feasible, and therefore project and project variant shadow impacts on Rincon Park would remain significant and unavoidable. Furthermore, as identified under Impact C-WS-1, implementation of the proposed project or project variants, in combination with reasonably foreseeable future projects including potential future development under the TCDP, would increase the amount of net new shadow on a large number of public open spaces including Rincon Park, the Embarcadero Promenade, and downtown sidewalks. Due to the number of proposed projects adding net new shadow on public open spaces and the layering of additional times of day and times of year when shadow would occur, combined with the impact of the proposed TCDP on the use of some of these open spaces, cumulative shadow impacts would be significant and unavoidable. By contributing net new shadow to Rincon Park, the Embarcadero Promenade, and downtown sidewalks, the proposed project or project variants would make a cumulatively considerable contribution to this significant and unavoidable cumulative impact. As identified, there are no feasible mitigation measures available to reduce the project-specific impact; therefore, Impact C-WS-1, discussed on pp. 4.H.30-4.H.39, would remain significant and unavoidable.

As identified in Section 4.K, Hydrology and Water Quality, under Impact HY-2, implementation of the proposed project or project variants would expose people or structures to increased risk of flooding due to climate-induced sea level rise. There are no feasible project-specific mitigation measures available; therefore, project and project variant flooding impacts would remain significant and unavoidable.

C. SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL IMPACTS

In accordance with Section 21100 (b)(2)(B) of CEQA, and Section 15126.2(c) of the CEQA Guidelines, an EIR must identify any significant irreversible environmental changes that could result from implementation of the proposed project. This may include current or future uses of non-renewable resources and secondary or growth-inducing impacts that commit future generations to similar uses. According to the CEQA Guidelines, irretrievable commitments of resources should be evaluated to assure that such current consumption is justified. The CEQA Guidelines describe three distinct categories of significant irreversible changes: 1) changes in land use that would commit future generations, 2) irreversible changes from environmental actions, and 3) consumption of nonrenewable resources. Each of these categories is discussed below in relation to the proposed project. The conclusions for the proposed project and project variants are the same, except where noted.

CHANGES IN LAND USE WHICH WOULD COMMIT FUTURE GENERATIONS

As described throughout this EIR, implementation of the proposed project or project variants would entail the demolition of the existing 7-story parking garage and construction of a high-rise residential tower and associated public open space improvements within an urbanized area. The major change in use on the project site under the proposed project and the Public Parking Variant would be related to the construction of a new high-rise residential tower and the introduction of new residential and retail (restaurant/café) uses on the project site. The Residential/Hotel Mixed Use Variant would introduce a new hotel use in addition to residential and retail (restaurant/café) uses on the project site. The project site is currently occupied and developed with parking uses and the adjacent area across Steuart Street (the open space improvement site) is currently unimproved. Implementation of the proposed project would result in a change in land use on the project site that would commit future generations to the proposed new residential and retail (restaurant/café) uses (or a hotel use plus new residential and retail [restaurant/café] uses) as opposed to parking uses. Future generations would also benefit from the addition of new public open space. However, future generations could eventually redevelop the project site and public open space with other uses, if the proposed high-rise residential tower with a restaurant/cafe use (or a hotel use plus new residential and restaurant/café uses) were to no longer operate. Therefore, the proposed project and project variants would not constitute a significant adverse effect on changes in land use which would commit future generations.

IRREVERSIBLE CHANGES FROM ENVIRONMENTAL ACTIONS

No significant irreversible environmental damage, such as an accidental spill or explosion of hazardous materials, is anticipated to occur with implementation of the proposed project. Compliance with Federal, State and local regulations related to residential and retail uses identified in the Initial Study, Section E, Hazards and Hazardous Materials (see Appendix A, pp. 134-142), would reduce the possibility that hazardous substances from the demolition, construction, and operation of the proposed project or project variants would cause significant and unavoidable environmental damage. The proposed project would include excavation to a depth of approximately 59 feet below ground surface (bgs). The project variants would require additional excavation to a depth of approximately 70 feet bgs. Generally, the site excavation for the proposed project and project variants would not substantially alter the relatively flat topography of the project site.

No other irreversible permanent changes such as those that might result from construction of a large-scale mining project, hydroelectric dam, or other industrial project would result from development of the proposed project.

CONSUMPTION OF NONRENEWABLE RESOURCES

Consumption of nonrenewable resources includes increased energy consumption, conversion of agricultural lands to urban uses, and loss of access to mineral reserves. No agricultural lands would be converted and no access to mining reserves would be lost with construction of the proposed project or project variants.

Implementation of the proposed project or project variants would commit future generations to an irreversible commitment of energy resources in the form of usage of nonrenewable fossil fuels, due to vehicle and equipment use during demolition, construction, and operation of the proposed project or project variants. The proposed project and project variants would comply with California Code of Regulations Title 24 standards and the City's Building Code Requirements for Construction Projects; they would not use energy in a wasteful manner. Resources consumed during demolition, construction, and operation would include lumber, concrete, gravel, asphalt, masonry, metals, and water.

The existing parking use on the project site is not a land use that contributes substantially to the demand on water resources or on the capacity of the Altamont landfill. In contrast, the proposed project or project variants would introduce new residential and retail land uses that would irreversibly use water resources and landfill capacity. However, the proposed project or project variants would not involve a large commitment to those resources relative to supply, nor would it consume any of those resources wastefully. The proposed project and project variants would be designed and constructed with the goal of obtaining, at minimum, Leadership in Energy and Environmental Design (LEED) Silver certification, or as required by the San Francisco Building Code. Design, construction, and operation according to LEED standards would ensure the efficient use of water, energy, and materials resources. Further, the proposed project or project variants would not require the construction of a new power plant, or major new transmission lines to deliver energy.

The proposed project and project variants would introduce new residential and retail (restaurant/café) uses to the project site (or a hotel use plus new residential and retail [restaurant/café] uses). The project site is already served by existing utilities and construction of new major utilities would not be necessary. The project site is almost completely covered with impervious surfaces, and construction of the proposed project or project variants would not substantially increase the amount of impervious surface area on the project site. It is anticipated that there would be no net increase in the amount of stormwater runoff with implementation of the proposed project or project variants because the City's Stormwater Management Ordinance requirements now make mandatory a reduction in at-source runoff. The proposed project and project variants would meet these requirements; however, the majority of stormwater would continue to be handled by the City's combined sewer collection system. Neither the proposed project nor the project variants would require construction of new water or wastewater conveyance or treatment facilities. The *2010 Urban Water Management Plan for the City and County of San Francisco*, which includes all known or expected development projects and projected development in San Francisco through 2030, accounts for development like the proposed project or project variants. Therefore, the proposed project and project variants would not require new or expanded water supply resources or entitlements. In summary, service providers would have the capacity to provide for the proposed level of development on the project site.

D. AREAS OF KNOWN CONTROVERSY AND ISSUES TO BE RESOLVED

An Environmental Evaluation application for the 75 Howard Street project was submitted to the Planning Department on January 13, 2012. This application was revised on April 25, 2012 to accommodate minor adjustments to the proposed project's program and design. The Planning Department prepared an Initial Study and published a Notice of Preparation of an EIR on December 12, 2012, announcing its intent to prepare and distribute a focused EIR (the NOP/IS is presented as Appendix A to this EIR). Publication of the NOP/IS initiated a 30-day public review and comment period that began on December 13, 2012, and ended on January 11, 2013.

Individuals and agencies that received these notices included owners of properties within 300 feet of the project site, and potentially interested parties, including regional and State agencies. During the public review and comment period, 11 comment letters were submitted to the Planning Department by interested parties. The comment letters on the NOP/IS raised the following issues:

On the basis of public comments on the NOP/IS, potential areas of controversy for the proposed project include the following:

- Project Description: Size of proposed residential units, private open space requirements, project site ownership, and accuracy of identification of surrounding building heights;
- Land Use: Potential effects on the character of the existing neighborhood, and the need for an in-depth analysis of the project's impact on land use character;
- Aesthetics: Opposition to the height of the proposed building, visual character, loss of views and consequent negative effect on property values, design and setbacks of the proposed building, potential effects of new views on property values and on privacy of neighboring homes and offices;
- Transportation and Circulation: Potential effects related to loss of parking, increased traffic congestion and auto/pedestrian/bicycle conflicts, and rerouted bus lanes;
- Air Quality: Location of the proposed project in a Department of Public Health "hot zone," and the impact of increased traffic on air quality;
- Shadow: Potential shadow impacts on public spaces;
- Recreation: Consideration of the eastern South of Market area's open space needs, accuracy of recreation and open space data presented in the Initial Study, and the need to consider surrounding uses in determining the area's recreation and open space needs;
- Public Services: Potential effects on Police Department, Fire Department, and emergency medical service response times;
- Variants: Potential effects of the Residential/Hotel Mixed Use Variant on working conditions, the broader hospitality market, and the quality of life for workers, neighbors, and other residents;
- Alternatives: Consideration of an alternative site for the proposed project.

Comments expressing support for the proposed project or opposition to it will be considered independent of the environmental review process by City decision-makers, as part of their decision to approve, modify, or disapprove the proposed project.

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6. ALTERNATIVES

A. INTRODUCTION

This chapter describes alternatives to the proposed 75 Howard Street project. It evaluates the environmental impacts associated with each alternative relative to existing conditions and to the environmental impacts of the proposed project. This Alternatives chapter also discusses the ability of each alternative to meet the project sponsor's objectives, while avoiding or substantially reducing one or more of the proposed project's significant impacts. Lastly, this chapter identifies one of the alternatives as an environmentally superior alternative, which is the alternative that would result in the least adverse effect on the physical environment.

The analysis of alternatives is of benefit to decision-makers because it provides more complete information about the potential impacts of land use decisions and, consequently, a better understanding of the interrelationships among all of the environmental topics under evaluation. Decision-makers must consider approval of an alternative if the alternative would substantially lessen or avoid significant environmental impacts identified for the proposed project and is determined to be feasible.

RANGE OF ALTERNATIVES CONSIDERED

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" in order to foster informed decision-making and public participation (CEQA Guidelines Section 15126.6(f)).

CEQA Guidelines Sections 15126.6(f)(1) and (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 City project decision-makers based on substantial evidence in the record, which includes, but is not limited to, information presented in the EIR, comments received on the Draft EIR, and responses to those comments.

The intent of the alternatives discussed in this chapter is to consider designs and development programs that could avoid or lessen significant and unavoidable impacts resulting from development (demolition and new construction) under the proposed project, as identified in Chapter 4, Environmental Setting, Impacts, and Mitigation. The EIR concludes that the project, if implemented as proposed, would result in significant and unavoidable impacts related to Land Use and Land Use Planning, Aesthetics, cumulative Transportation and Circulation, Shadow, and Hydrology and Water Quality.

Three alternatives are evaluated in this chapter:

- Alternative A: No Project Alternative
- Alternative B: Code Compliant Alternative
- Alternative C: Reduced Height Alternative

These alternatives and a comparison of significant and unavoidable impacts are summarized in Table 6.1: Comparison of Significant Impacts of Proposed Project Impacts to Impacts of Alternatives, below on pp. 6.3-6.5.

B. ALTERNATIVE A: NO PROJECT ALTERNATIVE

CEQA Guidelines Section 15126.6(e) requires that, among the project alternatives, a "no project" alternative be evaluated. CEQA Guidelines Section 15126.6(e)(2) requires that the no project alternative analysis "discuss the existing conditions…as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and policies and consistent with the available infrastructure and community services." As noted in CEQA Guidelines Section 15126.6, an EIR on "a development project on identifiable property" typically analyzes a no project alternative, i.e., "the circumstance under which the project does not proceed. Such a discussion would compare the environmental effects of the property remaining in its existing state against environmental effects that would occur if the project is approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this 'no project' consequence should be discussed."

Table 6.1: Comparison of Significant and Unavoidable Impacts of the Proposed Project to Impacts of the Alternatives

	Proposed Project	No Project Alternative	Code Compliant Alternative	Reduced Height Alternative
Legend: NI = No Impact; LS = Less than Significant; S = Significant; SU = Significant and unavoidable; SUM = Significant and unavoidable impact with mitigation; NA = Not Applicable				
Description				
High-Rise Tower Height	348 ft.	-	200 ft.	281 ft.
Number of Stories	31	-	18	25
Number of Residential Units	186 units	-	169 units	172 units
GSF by Use				
Residential	285,498 gsf	None	233,530 gsf	280,430 gsf
Retail	5,658 gsf	None	5,900 gsf	5,900 gsf
Parking	26,701 gsf	166,483 gsf	25,700 gsf	25,700 gsf
Other [a]	114,396 gsf	None	91,070 gsf	95,820 gsf
Total GSF	***432,253 gsf***	***166,483 gsf***	***356,200 gsf***	***407,850 gsf***
Open Space Site	Yes	No	No	Yes
Parking				
Public parking Spaces	-	540	-	-
Residential Spaces [b]	172	-	143	156
Commercial Spaces	2	-	2	2
Car-share Spaces [c]	1	-	1	1
Total Parking Spaces	**175**	**540**	**146**	**159**
Bicycle Parking Spaces	64	-	55	56
Loading				
Off-street spaces	2	-	2	2
On-street loading zones	2	-	1	2
Ability to Meet Project Sponsor's Objectives				
	Yes	No	Some	Most
Land Use and Land Use Planning				
Plan, policy, or regulation conflict	**LU-1**: The proposed project or variants would conflict with an 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. (SU)	Not applicable	Less than the proposed project. (LS)	Less than the proposed project. (SU)

	Proposed Project	No Project Alternative	Code Compliant Alternative	Reduced Height Alternative
Legend: NI = No Impact; LS = Less than Significant; S = Significant; SU = Significant and unavoidable; SUM = Significant and unavoidable impact with mitigation; NA = Not Applicable				
Aesthetics				
Scenic Vista	**AE-1**: The proposed project and project variants would have a substantial adverse effect on a scenic vista. (SU)	Not applicable	Less than the proposed project. (LS)	Similar to but less than the proposed project. (SU)
Transportation and Circulation				
Cumulative traffic – intersection operations	**C-TR-1**: The proposed project would contribute considerably to reasonably forseeable future cumulative traffic increases that would cause levels of service to deteriorate to unacceptable levels at the intersection of Spear and Howard Streets. (SUM)	Not applicable	Similar to but less than proposed project. (SUM)	Similar to but less than proposed project. (SUM)
Shadow				
Shadows	**WS-1**: The proposed project or variants would create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas. (SU)	Not applicable	Similar to but less than proposed project. (SU)	Similar to but slightly less than proposed project. (SU)
Cumulative shadows	**C-WS-1**: The proposed project or variants, in combination with past, present, and reasonably foreseeable future projects in the project vicinity, would create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas, resulting in a significant cumulative shadow impact. The proposed project or variants would make a cumulatively considerable contribution to this significant cumulative shadow impact. (SU)	Not applicable	Similar to but less than proposed project. (SU)	Similar to but slightly less than proposed project. (SU)
Hydrology and Water Quality				
Sea level rise	**HY-2**: The proposed project and project variants would expose people or structures to increased risk of flooding due to climate-induced sea level rise. (SUM)	Existing flooding risks due to Sea Level Rise would remain on the project site.	Similar to the proposed project. (SUM)	Similar to the proposed project. (SUM)

	Proposed Project	No Project Alternative	Code Compliant Alternative	Reduced Height Alternative

Legend: NI = No Impact; LS = Less than Significant; S = Significant; SU = Significant and unavoidable; SUM = Significant and unavoidable impact with mitigation; NA = Not Applicable

Notes:
[a] Includes space devoted to mechanical, circulation and building support areas.
[b] Includes the maximum number of off-street parking spaces allowed as of right in the C-3 District where the proposed project is located plus accessory off-street parking spaces as determined through the Planning Code Section 309 Review process. Project sponsor has requested an increase to the maximum amount of accessory off-street parking spaces.
[c] Required per SF Planning Code Section 166.

Sources: Turnstone Consulting and Adavant Consulting, February 2013

DESCRIPTION

Under Alternative A, No Project, the existing conditions at the 75 Howard Street project site would not change. The existing, legally nonconforming 550-space, 91-foot-tall, eight-level commercial parking garage on the 75 Howard Street building site would be retained in its current condition. The proposed 348-foot-tall, 432,253-gross-square-foot (gsf) residential high-rise tower containing 186 market rate units, approximately 5,658 gsf of retail use, and 175 below-grade parking spaces would not be constructed, nor would the proposed project variants. Assessor's Block 3742/Lot 12 would remain vacant and paved, and would continue to be owned by the City and County of San Francisco for construction staging and other temporary uses. There would be no landscape or hardscape improvements to the open space site or portions of the surrounding right-of way. The on-street parking along the segment of Steuart Street south of Howard Street would remain. There would be no changes to or narrowing of this segment of Steuart Street, and the turnaround bulb at the southern terminus of Steuart Street would not be reconfigured.

IMPACTS

This environmental analysis assumes that the existing structure and uses on the project site would not change and that the existing physical conditions, as described in detail for each environmental topic in Chapter 4, Environmental Setting, Impacts, and Mitigation, would remain the same.

If the No Project Alternative were implemented, none of the impacts associated with the proposed project, as described in Chapter 4, would occur. The No Project Alternative does not preclude future development of the project site with a range of land uses that are principally permitted at the project site. Development and growth would continue within the vicinity of the project site as nearby projects are approved, constructed, and occupied. These projects would contribute to significant cumulative impacts in the vicinity, but under the No Project Alternative, land use activity on the project site would not contribute to these cumulative impacts beyond existing levels.

Land Use and Land Use Planning

Under the No Project Alternative, existing land use conditions on the project site would not change. The existing 75 Howard Garage would continue operating as a public parking garage, and the open space improvement site would remain vacant. No residential, retail, below-grade parking, or open space uses would be developed on the project site, and none of the project approvals required for the proposed project would be required for this alternative. As with the proposed project, this alternative would not physically divide an established community or have an adverse impact upon the existing character of the project vicinity. Unlike the proposed project, this alternative would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. Compared to the proposed project, which would have a significant and unavoidable project-level land use impact and a less-than-significant cumulatively considerable contribution to significant cumulative land use impacts, the No Project Alternative would not have any impacts related to land use.

Aesthetics

Under the No Project Alternative, existing visual quality conditions for the project site and its surroundings would not change. The existing parking garage would not be demolished and replaced by a 348-foot-tall high-rise tower, so there would be no change in effects on scenic vistas, resources, or existing visual quality, unlike the proposed project, which would have significant and unavoidable project-level adverse effects on a scenic vista. The proposed project would have less-than-significant project-level impacts and a less-than-significant cumulatively considerable contribution to significant cumulative impacts on a scenic resource or visual character or quality of the site. The No Project Alternative would have no impacts related to aesthetics.

Cultural Resources

Under the No Project Alternative, existing archaeological resources would not be affected. Since the No Project Alternative would not result in any excavation or ground disturbance, there would not be any disturbance to potential archaeological deposits or human remains. The proposed project and its variants would have significant archaeological impacts, which would be mitigated to a less-than-significant level with implementation of the following mitigations: M-CP-1a: Archaeological Testing, Monitoring, Data Recovery, and Reporting; M-CP-1b: Interpretation; and M-CP-1c: Accidental Discovery, described on pp. 4.D.35-4.D.40. There would be no impacts related to archaeological resources under the No Project Alternative, and therefore no mitigation measures would be required.

Transportation and Circulation

Under the No Project Alternative, existing conditions would continue. There would be no change to the configuration or operation of the existing 75 Howard Street Garage; no alterations or improvements would be made to the Howard Street and Steuart Street rights-of way; bicycle and pedestrian conditions would remain unchanged; traffic or transit trips would not increase; and trip generation, parking, transit and loading demands would remain the same. The suggested transportation and circulation improvement measures (transit-related Improvement Measures I-TR-A: Transit Information for Residents and I-TR-B: Alternative Transportation Modes for Hotel Guests, on pp. 4.E.50-4.E.51; pedestrian-related Improvement Measures I-TR-C: Driveway Operations Plan, I-TR-D: Vehicle Queues and Pedestrian Conflicts, and I-TR-E: Installation of Pedestrian Alerting Devices, on pp. 4.E.55-4.E.56; bicycle-related Improvement Measures

I-TR-F: Installation of Bicycle Racks on the Steuart Street Plaza, I-TR-G: Provision of Bicycle Signage and Information, and I-TR-H: Bicycle Availability to Hotel Guests, on p. 4.E.59; loading-related Improvement Measures I-TR-I: Sidewalk Widening and I-TR-J: Reservation of Curb Parking for Residential Move-In and Move-Out, on p. 4.E.62; parking-related Improvement Measure I-TR-K: Installation of Electronic “Parking Full” Sign, on p. 4.E.69, and construction-related Improvement Measures I-TR-L: Expanded Traffic Control Plan for Construction, I-TR-M: Carpool and Transit Access for Construction Workers, and I-TR-N: Project Construction Updates for Adjacent Businesses and Residents, on pp. 4.E.71-4.E.72) would not be applicable to the No Project Alternative. The proposed project would have less-than-significant project-level transportation and circulation impacts and a cumulatively considerable contribution to significant cumulative transportation and circulation impacts. The No Project Alternative would have no impacts related to transportation and circulation.

Noise

Under the No Project Alternative, there would be no demolition or construction activities on the project site, and, consequently, no new sources of construction-related noise or vibration. No new operational noise would occur. Ambient noise levels would remain as in the existing conditions. Potential noise impacts and the mitigation measures identified for the proposed project (M-NO-1a: Noise Control Measures During Pile Driving, M-NO-1b: General Construction Noise Control Measures, M-NO-3: Interior Mechanical Equipment, and M-C-NO-1a: Cumulative Construction Noise Control Measures, described on pp. 4.F.22-4.F.23, 4.F.28, and p. 4.F.34) would not be applicable. The proposed project would have less-than-significant project-level impacts and a less-than-significant cumulatively considerable contribution to significant cumulative noise and vibration impacts with mitigation. The No Project Alternative would have no impacts related to noise.

Air Quality

Under the No Project Alternative, there would add no new sources of air pollutants from demolition and construction activities. Therefore, mitigation measures identified for the project-related sources of emissions (M-AQ-2: Construction Emissions Minimization, and M-AQ-4a: Best Available Control Technology for Diesel Generators, described on pp. 4.G.31-4.G.33 and p. 4.G.36) would not be required. No new residential or other sensitive land use would be developed under the No Project Alternative, and therefore Mitigation Measure M-AQ-4b: Air Filtration Measures, described on pp. 4.G.36-4.G.37, would not be required. The proposed project and its variants would have less-than-significant project-level impacts and a less-than-significant cumulatively considerable contribution to significant cumulative air quality impacts with mitigation. The No Project Alternative would have no impacts related to air quality.

Shadow

Under the No Project Alternative, there would be no change in existing sunlight conditions on Rincon Park, the Embarcadero Promenade, or any of the nearby privately owned publicly accessible open spaces (POPOs) or public sidewalks. The No Project Alternative would not cast net new shadow on the aforementioned open spaces or other public areas. Therefore, compared to the proposed project, which would have significant and unavoidable project-level shadow impacts and a significant and unavoidable cumulatively considerable contribution to a significant cumulative shadow impact, the No Project Alternative would have no impacts related to shadow.

Utilities and Service Systems

Under the No Project Alternative, existing utilities and infrastructure on the project site would remain the same as under current conditions. Under existing conditions, the project site is adequately served by existing utilities and service systems. There would be no changes in the generation and treatment of wastewater or stormwater and existing utilities infrastructure would remain unchanged; the project site would continue to be adequately served. The proposed project would have less-than-significant utilities and service systems impacts as described in Section 4.I, Utilities and Service Systems. The No Project Alternative would not have any impacts related to utilities and service systems.

Biological Resources

No new high-rise structure would be constructed under the No Project Alternative, and therefore no impacts related to bird migration and local movement, birdstrike risks, or bats would occur. Mitigation Measures M-BI-1a: Design Standards to Render Building Less Hazardous to Birds, and M-BI-1b: Night Lighting Minimization, and Improvement Measure I-BI-A: Tenant Education, described on pp. 4.J.13-4.J.14, would not be required under the No Project Alternative. The proposed project would have less-than-significant project-level and a less-than-significant cumulatively considerable contribution to significant cumulative biological resources impacts with mitigation. The No Project Alternative would have no impacts related to biological resources.

Hydrology and Water Quality

Under the proposed project, Mitigation Measure M-HY-2: Emergency Plan, described on pp. 4.K.25-4.K.26, would not be required. There would be a continued increased probability of sea level rise along the waterfront and nearby low-lying areas due to climate change that could expose people or existing structures on the project site to increased risk of flooding under the No Project Alternative. However, the No Project Alternative would not introduce residential uses to the project site and would not result in project-level impacts or significant cumulative hydrology and water quality impacts.

Other Topics

The Notice of Preparation/Initial Study (NOP/IS) and public scoping process concluded that the proposed project would have no impacts, less-than-significant impacts, or less-than-significant impacts with mitigation in the following analysis areas:

- Land Use and Land Use Planning (Physically Divide an Established Community, only);
- Aesthetics (Create a New Source of Substantial Light or Glare, only);
- Population and Housing;
- Cultural and Paleontological Resources (Historic Resources and Paleontological Resources, only);
- Greenhouse Gas Emissions;
- Wind and Shadow (Wind, only);
- Recreation;
- Utilities and Service Systems (Exceedances of Wastewater Treatment Requirements of the Applicable Regional Water Quality Control Board, Availability of Sufficient Water Supply to Serve the Project, Capacity of Wastewater Treatment to Serve the Project, Capacity of Landfill to Serve the Project, or Compliance with Federal, State, and Local Statutes and Regulations Related to Solid Waste, only);
- Public Services;
- Biological Resources (Substantial Adverse Effects on any Species, or Special-Status Species in Local or Regional Plans, Policies, or Regulations; Substantial Adverse Effects on any Riparian Habitat or Other Sensitive Natural Community; Substantial Adverse Effects on Federally Protected Wetlands as Defined by Section 404 of the Clean Water Act; Conflict with Any Local Policies or Ordinances Protecting Biological Resources; and Conflict with the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan or Other Approved Local, Regional, or State Habitat Conservation Plan, only);
- Geology and Soils;
- Hydrology and Water Quality (Violate Water Quality Standards or Waste Discharge Requirements; Deplete Groundwater Supplies or Interfere Substantially with Groundwater Recharge; Alter the Existing Drainage Pattern of the Site Resulting in Substantial Erosion or Siltation; Alter the Existing Drainage Pattern of the Site Resulting in Substantially Increased Runoff in a Manner that would Result in Flooding; Create or Contribute to Runoff Water which would Exceed Capacity of Existing Stormwater Systems; Degrade Water Quality; Place Housing within a 100-year Flood Hazard Area; Place Structures within a 100-year flood hazard area that would Impede or Redirect Flood Flows; and Expose People or Structures to a Significant Risk of Loss, Injury or Death Involving Flooding as a Result of a Failure of a Levee or Dam, only);

- Hazards/Hazardous Materials;
- Mineral/Energy Resources; and
- Agricultural and Forest 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. Therefore, mitigation measures and improvement measure presented in the NOP/IS (Mitigation Measure M-CP-3: Paleontological Resources Monitoring and Mitigation Program, Mitigation Measure M-HZ-1a: Site Assessment and Corrective Action for All Sites, Mitigation Measures M-HZ-1b: Hazardous Building Materials Abatement, and Improvement Measure I-WS-A) would not be required under the No Project Alternative.

CONCLUSION

Under the No Project Alternative, the existing conditions at the 75 Howard Street project site would not change. The existing commercial parking garage on the 75 Howard Street building site would be retained in its current condition and no high-rise, mixed-use tower would be constructed on the site. The No Project Alternative would have no significant and unavoidable impacts related to land use and land use planning, aesthetics, transportation and circulation, shadow, and hydrology and water quality; would have no impacts related to archaeological resources, noise, air quality, utilities and service systems, and biological resources; and would have no impacts on topics determined in the NOP/IS to either be less than significant or less than significant with mitigation under the proposed project. Therefore, no mitigation measures or improvement measures would be required.

The No Project Alternative would not achieve any of the following objectives of the project sponsor.

- To improve the architectural and urban design character of the City's waterfront by replacing the existing above-grade parking garage with a high-quality residential project with ground floor retail uses and sufficient parking.
- To increase the City's supply of housing.
- To construct streetscape improvements and open space that serve neighborhood residents, and workers, and enliven pedestrian activity on the waterfront during evening and nighttime hours.
- To construct a high-quality project that includes a sufficient number of residential units to make economically feasible the demolition and replacement of the existing above-grade parking garage, produce a reasonable return on investment for the project sponsor and its investors, attract investment capital and construction financing, and generate sufficient revenue to finance the open space amenities proposed as part of the project.

C. ALTERNATIVE B: CODE COMPLIANT ALTERNATIVE

DESCRIPTION

The Alternative B: Code Compliant Alternative provides an alternative that meets all applicable provisions of the Planning Code. Under this alternative, the project site would remain within the 200-S Height and Bulk District as shown on Zoning Map Sheet HT01, the 200-foot height limit specified on Map 5 (Proposed Height and Bulk Districts) in the *Downtown Area Plan* of the *General Plan*. Development under this alternative would comply with the bulk controls for the "lower tower" and "upper tower" as set forth under Planning Code Section 270(d). This alternative would not include either the Parking Variant or Residential/Hotel Mixed Use Variant analyzed for the proposed project.

Under this alternative, the existing commercial parking garage would be demolished and a new 18-story, approximately 200-foot-tall tower (plus an additional 20-foot-tall elevator/mechanical penthouse and screening) would be constructed on the 75 Howard Street building site (see Figure 6.1: Code Compliant Alternative Site Plan and Figure 6.2: Code Compliant Alternative Massing Diagrams). This alternative would be 13 stories and 150 feet shorter than the tower under the proposed project. The Code Compliant Alternative would contain 169 market rate units (17 fewer units than under the proposed project) and approximately 5,900 gsf of retail use (slightly less than under the proposed project), including space for restaurant and café uses.

Under the Code Compliant Alternative, a total of 146 parking spaces (29 fewer spaces than under the proposed project) would be constructed in a 25,700-gsf parking garage located on two below-grade levels accessed from Howard Street. One parking space would be reserved for car-share vehicles, two parking spaces would be reserved for commercial uses, and 143 parking spaces would be assigned to building residents. Similar to the proposed project, none of the parking spaces would be independently accessible; all vehicles would be mechanically parked by valet in stacked spaces. Similar to the proposed project, this alternative would include two loading spaces located on Basement Level 1. This alternative would also include 55 bicycle storage spaces (9 fewer than under the proposed project) located on Basement Level 1.

The Code Compliant Alternative would not include the proposed improvements to the open space site on Assessor's Block 3742/Lot 12. The site would remain vacant and paved with asphalt, and would continue to be owned by the City and County of San Francisco for temporary uses such as construction staging. There would be no landscape or hardscape improvements to the open space site or portions of the surrounding right-of-way. Under this alternative, the on-street parking a

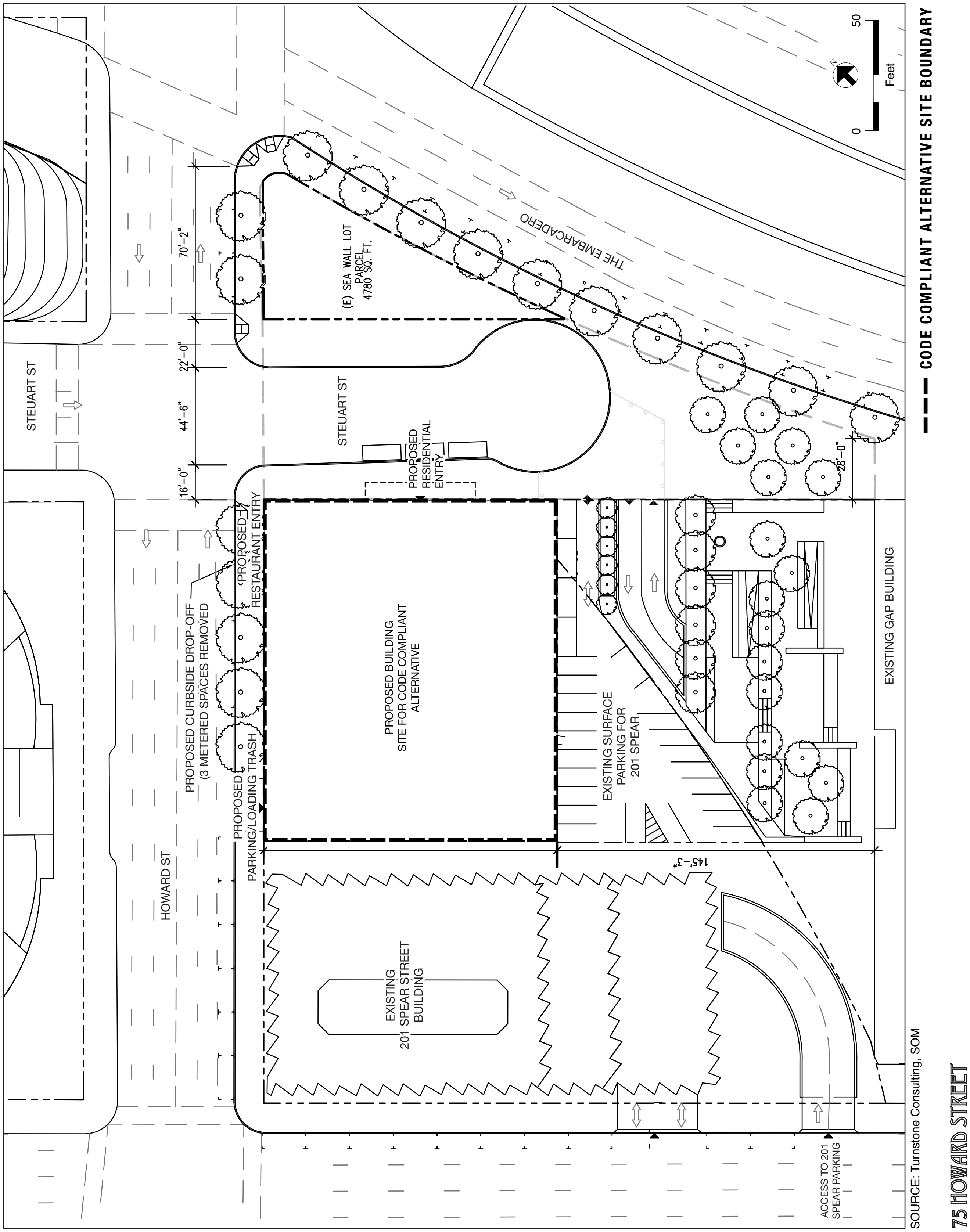
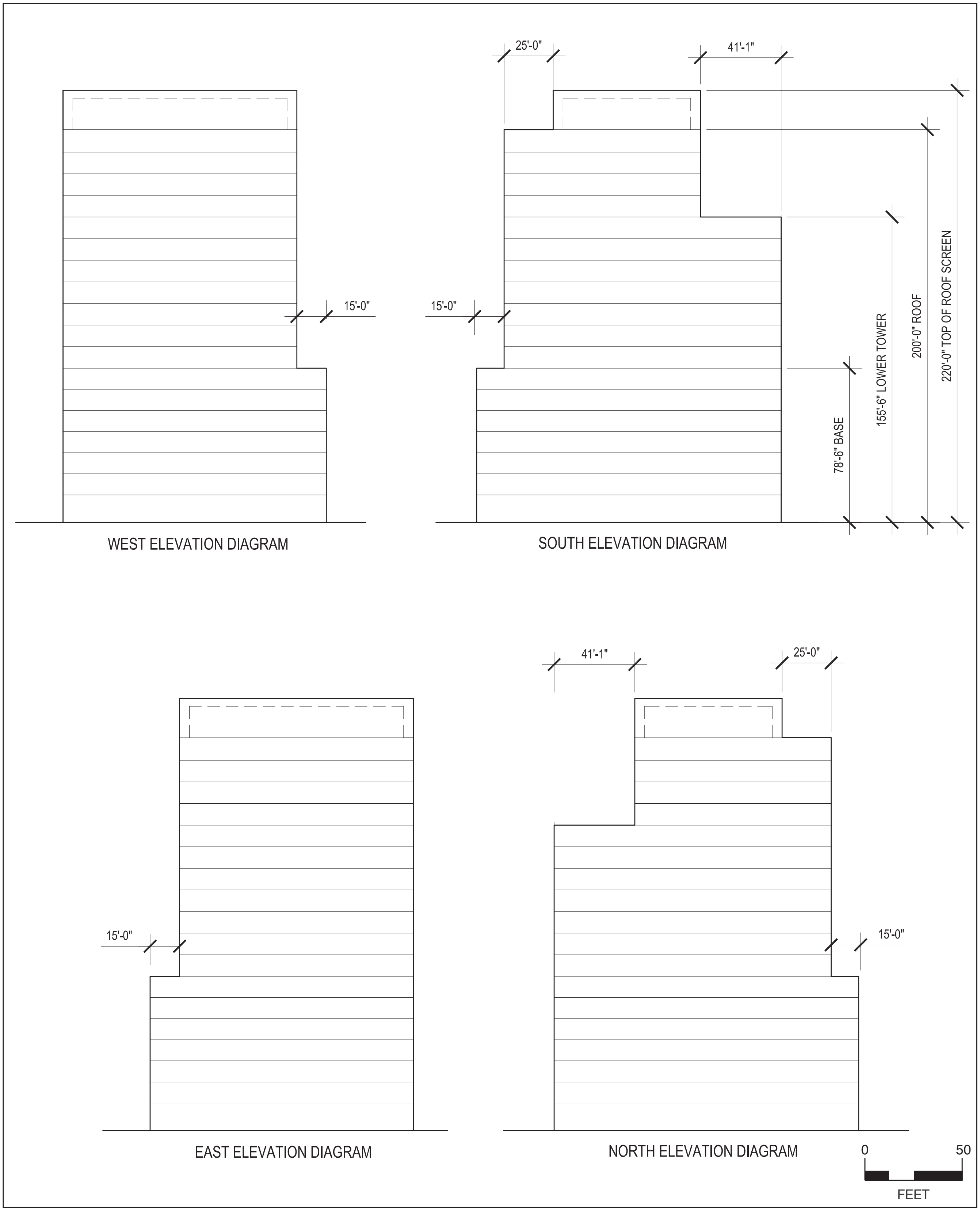


FIGURE 6.1: CODE COMPLIANT ALTERNATIVE SITE PLAN



SOURCE: SOM; Turnstone Consulting

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FIGURE 6.2: CODE COMPLIANT ALTERNATIVE MASSING DIAGRAMS

long the east-side of Steuart Street south of Howard Street would remain; however, the on-street parking along the west side of Steuart Street adjacent to the east elevation of the proposed building would be removed for curb-side loading. No changes would occur with regard to narrowing this segment of Steuart Street, and the turnaround bulb at the southern terminus of Steuart Street would not be eliminated, as it would under the proposed project. However, the sidewalks adjacent to the building would be improved pursuant to the requirements of Planning Code Section 138.1.

Under the Code Compliant Alternative, the following discretionary project approvals would be required: approval of a Section 309 Determination of Compliance and Request for Exceptions for the Construction of a New Building in a C-3 District, and the granting of variances from Planning Code requirements for Dwelling Unit Exposure (per Planning Code Section 140) and Street Frontages (per Planning Code Section 145.1).

IMPACTS

Land Use and Land Use Planning

The Code Compliant Alternative would include a mix of residential, retail, and below-grade parking uses. Under this alternative, the open space improvement site would not be developed. As with the proposed project, this alternative would not physically divide an established community or have an adverse impact upon the existing character of the project vicinity. At a height of 200 feet, this alternative would be more consistent with certain objectives and policies of the *General Plan's* Urban Design Element, *Downtown Area Plan*, and *Transit Center District Plan* (TCDP), because it would comply with the existing height limit for the project site. Due to its shorter height, this alternative would cast about 53.5 percent less annual net new shadow on Rincon Park than would the proposed project, but would still result in a significant and unavoidable shadow impact to Rincon Park. Like the proposed project, this alternative would conflict with Priority Policy No. 8, which calls for the protection of parks and open spaces and their access to sunlight and vistas. The net new shadow on Rincon Park would occur in the afternoon throughout the year and would fall on pedestrian paths and seating areas in the park as well as the Embarcadero Promenade, which forms the eastern perimeter of the park and is used for active recreation. The proposed project would have significant and unavoidable land use impacts, whereas the Code Compliant Alternative would have less-than-significant land use impacts. Neither the proposed project nor the Code Compliant Alternative would make a cumulatively considerable contribution to a significant cumulative land use impact.

The physical environmental impacts that could result from the potential inconsistency between the Code Compliant Alternative and Priority Policy No. 8 are discussed below under the topics of Aesthetics and Shadow.

Aesthetics

On pp. 4.C.3-4.C.4, Section 4.C, Aesthetics, identifies two types of potentially affected scenic vistas: Views Along Inland Street View Corridors, and Views of Downtown from the Eastern Waterfront and the Bay Bridge. The impact of this alternative on views along inland street view corridors would be substantially the same as that described for the proposed project on pp. 4.C.18-4.C.19. As with the proposed project, this alternative would not obstruct views to the Bay from inland street corridors, but, together with existing buildings, would frame these views, and would have a less-than-significant effect on scenic vistas along inland street view corridors.

Unlike the proposed project, which would have significant and unavoidable project-level impacts on scenic vistas of Downtown from the eastern waterfront and the Bay Bridge, the Code Compliant Alternative would have a less-than-significant impact on scenic vistas. At a height of 200 feet, this alternative would be more consistent with the City's vision for the urban form of San Francisco's Downtown as articulated in the objectives and policies of the *General Plan's* Urban Design Element, *Downtown Area Plan*, and TCDP. In particular, this alternative would be more consistent with policies calling for Downtown building heights to respect the prevailing scale of development and to step down to the waterfront. Unlike the proposed project, this 200-foot-tall alternative would effectuate a substantial step down to waterfront open space and the Bay from the 256-foot-tall 201 Spear Street Building immediately to the west of the project site, and the 280-foot-tall Rincon Towers to the north. While conformity or conflict with plans and policies is not to be construed as constituting a significance threshold, these plans and policies reflect the City's vision for the overall form of Downtown, and can inform the analysis of impacts under CEQA. As the Code Compliant Alternative would be shorter than the buildings immediately adjacent to the project site, the Code Compliant Alternative would reinforce the existing pattern discernible at the southeast edge of Downtown of buildings stepping down to the water's edge. This existing pattern would be continued and reinforced with new development under the *General Plan*. As such, the impact of the Code Compliant Alternative on scenic vistas of Downtown as viewed from the eastern waterfront would be considered less than significant. Neither the proposed project nor the Code Compliant Alternative would make a cumulatively considerable contribution to a significant cumulative aesthetic impact.

The impact of the Code Compliant Alternative on scenic resources would be substantially the same as that described for the proposed project, except that this alternative would not include development of a new public open space on the open space improvement site. The project site contains no scenic resources. As with the proposed project, this alternative would reinforce the western edge of The Embarcadero, presenting an active face to The Embarcadero and Rincon Park. Therefore, like the proposed project, this alternative would have a less-than-significant effect on scenic resources.

Under this alternative, it is assumed that the design and materials of the new tower would be similar to the proposed project, and include features that relate visually with the surrounding visual setting and improve the pedestrian realm, except that this alternative does not include development of a new public open space on the open space improvement site. As under the proposed project, this alternative would have a less-than-significant effect on visual character and quality. Neither the proposed project nor this alternative would make a cumulatively considerable contribution to a significant impact related to aesthetics.

Cultural Resources

Excavation required for the Code Compliant Alternative would be similar to that required for the proposed project in terms of location and depth. As such, potential impacts on archaeological resources under this alternative would be similar to those with the proposed project. Mitigation Measures M-CP-1a: Archaeological Testing, Monitoring, Data Recovery and Reporting; M-CP-1b: Interpretation; and M-CP-1c: Accidental Discovery, identified for the proposed project and described on pp. 4.D.35-4.D.40, would also be applicable to this alternative to ensure that, similar to the proposed project, potential project-level impacts on archaeological resources, if present within the project site, would be less than significant (with mitigation incorporated), and that contributions to significant cumulative impacts to archaeological resources would not be cumulatively considerable.

Transportation and Circulation[1]

Existing Plus Code Compliant Alternative

Under the Code Compliant Alternative, the location and size of the restaurant (4,913 gsf) and café (918 gsf) uses would be the same as under the proposed project. However, under this alternative the proposed building would be 13 stories shorter and 17 fewer residential units would be developed (169 residential units compared to 186 residential units under the proposed project). As a result, the travel demand generated by the Code Compliant Alternative for all modes would be less than that under the proposed project, as shown in Table 6.2: Trip Generation by Mode for Proposed Project and Code Compliant Alternative (Weekday PM Peak Hour).

Traffic Impacts

Under the Code Compliant Alternative, as shown in Table 6.2, 180 vehicle trips would be generated during the weekday p.m. peak period (15 fewer than under the proposed project).

[1] Adavant Consulting, Memo to Greg Riessen/Susan Mickelsen/Don Lewis Re: 75 Howard Street Project Transportation Study, Case Number 2001.1122! Proposed Project Alternatives Assessment, June 28, 2013 (hereinafter "75 Howard Street Project – Alternatives Assessment"), pp. 4-8. A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2011.1122E.

Traffic impacts at the nine study intersections would be similar to, but less than, those with the proposed project. As under the proposed project, the impact on traffic operations at the nine study intersections under this alternative would be less than significant.

Table 6.2: Trip Generation by Mode for Proposed Project and Code Compliant Alternative (Weekday PM Peak Hour)

	Person-Trips					
	Auto	**Transit**	**Walk**	**Other** [a]	**Total**	**Vehicle Trips**
Proposed Project						
Total	274	156	363	80	873	195
Code Compliant Alternative						
Total	254	146	344	77	821	180

Notes:
[a] "Other" includes bicycle, motorcycle, and additional modes such as taxis.
Source: Adavant Consulting, June 2013

Transit Impacts

Under the Code Compliant Alternative, as shown in Table 6.2, 146 transit trips would be generated during the weekday p.m. peak period (10 fewer than under the proposed project). Similar to the proposed project, impacts on local and regional transit capacity utilization with this alternative would be less than significant. Transit impacts would be less than significant with this alternative, and Improvement Measure I-TR-A: Transit Information for Residents, identified for the proposed project and described on p. 4.E.50, would also be applicable to this alternative to encourage transit use. Improvement Measure I-TR-A would encourage residents to use transit by having the project sponsor include a transportation insert in new resident move-in packets with information on available transit service (nearby lines, schedules and fares), information on where Clipper Cards could be purchased, and information on the 511 Regional Rideshare Program.

Pedestrian Impacts

Under the Code Compliant Alternative, as shown in Table 6.2, 490 walk trips (344 pedestrian trips and 146 transit trips[2]) would be generated during the weekday p.m. peak period; this is 29 fewer walk trips (19 fewer pedestrian trips and 10 fewer transit trips) than under the proposed project. As with the proposed project, under the Code Compliant Alternative pedestrian access to the restaurant/café and residential uses on the project site would be from Howard Street and Steuart Street, respectively; and the two-way parking garage driveway would be located at the west end of Howard Street.

As with the proposed project, impacts on pedestrian level of service on the adjacent sidewalks and crosswalks – the Howard Street/Steuart Street sidewalks, the Spear Street/Howard Street

[2] Transit trips are included because they involve walking from the transit stop to the project site.

crosswalk, and the Steuart Street/Howard Street crosswalk – during the weekday p.m. peak period and Saturday midday peak hour with this alternative would be less than significant. Conflicts between pedestrians and vehicles could occur at the two-way parking garage entry driveway under the Code Compliant Alternative, as with the proposed project. Therefore, Improvement Measures I-TR-C: Driveway Operations Plan, I-TR-D: Vehicle Queues and Pedestrian Conflicts, and I-TR-E: Installation of Pedestrian Alerting Devices, identified for the proposed project and described on pp. 4.E.55-4.E.56, would also be applicable to this alternative. Improvement Measure I-TR-C would result in the implementation of a *Driveway Operations Plan*, Improvement Measure I-TR-D would result in the implementation of a queue abatement program to ensure that vehicle queues do not block any portion of the sidewalk or roadway of Howard Street, and Improvement Measure I-TR-E would improve the visibility and awareness of cars and pedestrians at the proposed garage entrance.

Bicycle Impacts

Under the Code Compliant Alternative, 55 bicycle storage spaces would be located on the first basement level and would be accessed by elevator from either the residential or service entrance located at the ground floor. The Code Compliant Alternative would not substantially change bicycle travel in the vicinity of the project site, and therefore, similar to the proposed project, impacts on bicyclists would be less than significant. While impacts on bicyclists would be less-than-significant with this alternative, Improvement Measures I-TR-F: Installation of Bicycle Racks on the Steuart Street Plaza and I-TR-G: Provision of Bicycle Signage and Information, identified for the proposed project and described on p. 4.E.59, would also be applicable to this alternative to promote the use of bicycles. Improvement Measure I-TR-F would result in the installation of bicycle racks in the proposed Steuart Street Plaza to support the restaurant/café uses, and Improvement Measure I-TR-G would result in the development and installation of signage indicating the location of bicycle routes and bicycle parking areas.

Loading Impacts

As with the proposed project, the Code Compliant Alternative would provide two off-street freight loading spaces (35 feet long by 12 feet wide by 14 feet high) on the first basement level with access via the two-way driveway at the west end of Howard Street. Off-street loading operations and trash pick-up service under the Code Compliant Alternative would be similar to those for the proposed project. Under this alternative, there would be fewer residential units than under the proposed project; therefore, loading demand would be reduced under this alternative compared to the proposed project. Since the Code Compliant Alternative would provide the code-required off-street loading spaces, and since the loading demand could be accommodated within the proposed supply, loading impacts under this alternative would be less than significant, as with the proposed project.

Like the proposed project, the Code Compliant Alternative would require approval through the SFMTA Color Curb Program to develop two curbside drop-off areas: one on Howard Street (40 feet long) to support the proposed restaurant use and the other on Steuart Street (68 feet long) to support the proposed residential use. As with the proposed project, under this alternative development of the project driveway and curbside drop-off area on Howard Street would require the removal of three metered on-street parking spaces and development of the curbside drop-off area on Steuart Street would require the removal of four metered on-street parking spaces. Unlike the proposed project, modifications to the east sidewalk on Steuart Street would not occur and the four metered on-street parking spaces would remain. Like the proposed project, this alternative would provide sufficient passenger loading to meet the demand on the project site; therefore loading impacts would be less than significant. While loading impacts would be less than significant with this alternative, Improvement Measure I-TR-C: Driveway Operations Plan, identified for the proposed project and described on p. 4.E.55, and Improvement Measures I-TR-I: Sidewalk Widening and I-TR-J: Reservation of Curb Parking for Residential Move-In and Move-Out, identified for the proposed project and described on p. 4.E.62, would also be applicable to this alternative to help improve loading operations and to minimize indirect effects on transportation operating conditions in the project vicinity.

Emergency Access Impacts

Unlike the proposed project, implementation of the Code Compliant Alternative would not result in any modifications to the Steuart Street roadway, the elimination of the turnaround bulb at the southern terminus of Steuart Street, or the removal of two on-street metered parking spaces along The Embarcadero to provide an emergency vehicle exit. Therefore, the Code Compliant Alternative would not affect emergency vehicle access to the project site or project vicinity, nor would it change the configuration or capacity of adjacent travel lanes such that it would conflict with the San Francisco Fire Code. Similar to the proposed project, impacts on emergency access under this alternative would be less than significant.

Parking Impacts

Under the Code Compliant Alternative, a total of 146 parking spaces (29 fewer than under the proposed project) would be provided (143 assigned to residential uses, 1 car-share space, and 2 commercial parking spaces assigned to the restaurant/café uses). As with the proposed project, under this alternative off-street parking would be located in the second below-grade basement level. Access into the parking garage would be via a 24-foot-wide, two-way driveway at the west end of the proposed building along Howard Street; none of the parking spaces would be independently accessible, i.e., all parking would be by an attendant operating a mechanical parking system. There would be no on-site public parking provided. Similar to the proposed project, under the Code Compliant Alternative the project sponsor would request, through the

Section 309 Review process, an increase in the maximum amount of accessory off-street parking allowed under Planning Code Section 151.1, and would seek a variance from the Planning Code to allow for the development of a 24-foot-wide garage access driveway.

As with the proposed project, under the Code Compliant Alternative the existing 540-space public parking garage at 75 Howard Streetwould be eliminated, resulting in a similar reduction in the off-street parking supply in the project vicinity. Unlike the proposed project, which would require the removal of 13 on-street metered parking spaces, only 7 on-street metered parking spaces would be eliminated under this alternative, resulting in a lesser reduction to the on-street parking supply in the project vicinity. The residential and commercial uses associated with the Code Compliant Alternative would generate a peak evening demand of 275 parking spaces, approximately 43 fewer spaces than under the proposed project. Compared to a supply of 145 long-term parking spaces,[3] the Code Compliant Alternative parking demand would result in a shortfall of 130 spaces during the weekday evening period, which would be slightly less than that for the proposed project. As with the proposed project, under the Code Compliant Alternative the loss of the existing public parking spaces during the midday period would result in motorists parking outside of the study area or shifting to another travel mode, and during the evening period the off-street parking supply in the study area would be sufficient to meet demand.

Under the Code Compliant Alternative, 12 fewer vehicles would enter and exit the Howard Street parking garage during the weekday p.m. peak hour than under the proposed project. As with the proposed project, parking operations would not be expected to result in queues that spill out of the parking garage and back onto Howard Street. Unlike the proposed project, which would include Improvement Measure I-TR-K: Installation of Electronic "Parking Full" Sign, described on p. 4.E.69, no improvement measures have been identified for this alternative.

Construction Impacts

Construction activities associated with the Code Compliant Alternative would be similar to, but less than, those described for the proposed project. Overall, the construction-related transportation impacts of this alternative would be less than significant due to their temporary and limited duration. Improvement Measures I-TR-L: Expanded Traffic Control Plan for Construction, M: Carpool and Transit Access for Construction Workers, and N: Project Construction Updates for Adjacent Businesses and Residents, identified for the proposed project and described on pp. 4.E.71-4.E.72, would be applicable to this alternative to reduce its less-than-significant, construction-related transportation effects. Improvement Measures I-TR-L, M, and N could require the contractor to prepare a traffic control plan for project construction to reduce potential conflicts between construction activities and pedestrians, transit, and autos; could require the construction contractor to encourage carpooling and transit access to the site by

[3] This total does not include the car-share space.

construction workers; and could require the project sponsor to provide nearby residences and adjacent businesses with regularly updated information regarding project construction.

<u>2035 Cumulative Conditions</u>

As with the proposed project, 2035 cumulative conditions under the Code Compliant Alternative would include the public realm and transportation system improvements proposed as part of the TCDP. Under the Code Compliant Alternative, as shown in Table 6.2, 180 vehicle trips would be generated during the weekday p.m. peak period (15 fewer than under the proposed project). Under 2035 cumulative conditions, vehicle delays would increase at the nine study intersections compared to existing conditions, and, as under the proposed project, six of the nine study intersections – The Embarcadero/Mission Street, The Embarcadero/Howard Street, The Embarcadero/Folsom Street, The Embarcadero/Harrison Street, Spear Street/Howard Street, and Spear Street/Folsom Street –would operate at LOS E or LOS F (as described in Section 4.E, Transportation and Circulation, pp. 4.E.72-4.E.75). The other three study intersections – Steuart Street/Mission Street, Steuart Street/Howard Street, and Fremont Street/Folsom Street/I-80 WB Off-Ramp – would operate at LOS C or LOS D under 2035 cumulative conditions.

Like the proposed project, the Code Compliant Alternative would result in less-than-significant cumulatively considerable contributions to significant cumulative impacts at five of the six study intersections that operate at LOS E or LOS F under 2035 cumulative conditions, based on consideration of the alternative's contribution to critical movements. Therefore, the Code Compliant Alternative's traffic impacts under 2035 cumulative conditions at these five study intersections (The Embarcadero/Mission Street, The Embarcadero/Howard Street, The Embarcadero/Folsom Street, The Embarcadero/Harrison Street, and Spear Street/Folsom Street) would result in a less-than-significant cumulatively considerable contribution, especially since its contribution to critical movements would be less than for the proposed project.

As described on EIR pp. 4.E.72-4.E.75, intersection operations at Spear Street/Howard Street under 2035 cumulative conditions would degrade to LOS E due to the elimination of one or two southbound travel lanes between Market Street and Folsom Street and their conversion into one northbound travel lane, as called for in the TCDP. This significant cumulative impact would not arise without implementation of this component of the TCDP. Feasible mitigation measures aimed at lessening the significant cumulative traffic impact at the Spear Street/Howard Street intersection related to the implementation of certain public realm components of the TCDP were not identified as part of its environmental review. Therefore, the significant cumulative traffic impact at the Spear Street/Howard Street intersection under 2035 cumulative conditions would be unavoidable. As with the proposed project, which would contribute considerably to the significant cumulative traffic impact at the Spear Street/Howard Street intersection (as described in Section 4.E, Transportation and Circulation, pp. 4.E.72-4.E.75), the Code Compliant

Alternative would also contribute to the significant cumulative traffic impact at the Spear Street/Howard Street intersection, although to a lesser degree, because it would generate slightly fewer new vehicle and transit trips. Therefore, under the Code Compliant Alternative, the suggested transportation and circulation mitigation measure identified for the proposed project (Mitigation Measure M-C-TR-1: Modifications to the Intersection of Spear and Howard Streets, on p. 4.E.74) would also be applicable. However, as discussed therein, the feasibility of this mitigation measure is not certain, and like the proposed project, the Code Compliant Alternative would generate a cumulatively considerable contribution to the significant and unavoidable cumulative impact at the Spear Street/Howard Street intersection.

As described on EIR pp. 4.E.75-4.E.77, transit operations under 2035 cumulative conditions for the Geary subcorridor of Muni's Northwest screenline would exceed the 85 percent capacity utilization standard resulting in a significant cumulative transit impact. The additional project-related transit trips generated under both the proposed project and this alternative would be within the daily variation of transit demand. Therefore, under the Code Compliant Alternative project-related transit trips added to the Muni screenlines and subcorridors, including those to the Northwest screenline's Geary subcorridor, would make a minimal contribution to the cumulative transit ridership increase and the contribution would be considered less than significant.

In summary, compared to the proposed project, which would have less-than-significant project-level traffic and transit impacts, would make a significant contribution to a significant cumulative traffic impact at the Spear Street/Howard Street intersection, but would not make a significant contribution to a significant cumulative transit impact at the Geary corridor of Muni's Northwest screenline, the Code Compliant Alternative would generate similar, but slightly reduced, less-than-significant project-level traffic and transit impacts, would make a significant, but slightly reduced, contribution to the significant cumulative traffic impact at the Spear Street/Howard Street intersection, and would not contribute to a significant cumulative transit impact at the Geary corridor of Muni's Northwest screenline. Furthermore, compared to the proposed project, which would generate a less-than-significant contribution to cumulative impacts on pedestrian, bicycle, and loading impacts as well as construction-related transportation and circulation impacts in the project vicinity, the Code Compliant Alternative would generate a similar, but slightly reduced, contribution to pedestrian, bicycle, and loading impacts under 2035 cumulative conditions as well as construction-related transportation and circulation impacts.

Noise

Similar to the proposed project, the Code Compliant Alternative would result in demolition, excavation, and building construction activities that would temporarily and intermittently increase noise and groundborne vibration in the project vicinity to levels that could be considered an annoyance by occupants of nearby properties. The greatest construction noise and vibration impacts would be during demolition and basement construction, and the loudest activities, such as installation of piles, demolition, and excavation, would occur over the first 30 weeks, the same duration as with the proposed project. The overall duration of construction noise would be shorter than that for the proposed project. Construction activities would be required to comply with the San Francisco Noise Ordinance. However, as with the proposed project, noise from construction would still be substantially greater than existing noise levels in the project vicinity and could significantly impact nearby sensitive receptors. To ensure construction noise and vibration are reduced to the maximum amount feasible, Mitigation Measures M-NO-1a: Noise Control Measures During Pile Driving, and M-NO-1b: General Construction Noise Control Measures, identified for the proposed project and described in Section 4.F, Noise, pp. 4.F.22-4.F.23, would also be applicable under this alternative. Mitigation Measure M-NO-1a would require the use of feasible noise- and vibration-reducing techniques for installing piles such as erecting barriers and pre-drilling pile holes where feasible, and Mitigation Measure M-NO-1b would require the project contractor to use equipment with lower noise emissions and sound controls where feasible, locate stationary equipment as far as possible from sensitive receptors, designate a construction noise complaint and enforcement manager, and provide advance notification to surrounding receptors.

Construction of the Code Compliant Alternative would cause cumulative construction noise impacts that would occur with other projects in the vicinity, including construction occurring as development is approved pursuant to implementation of the TCDP. As with the proposed project, Mitigation Measure M-C-NO-1a: Cumulative Construction Noise Control Measures, p. 4.F.34, would also be applicable to this alternative. Mitigation Measure M-C-NO-1a would ensure that construction of the alternative would not result in a cumulatively considerable contribution to temporary or periodic increases in ambient noise or vibration. As with the proposed project, implementation of these mitigation measures under this alternative would decrease significant project-level construction noise and vibration impacts and cumulatively considerable contributions to cumulative construction noise and vibration impacts to a less-than-significant level.

Operation of the Code Compliant Alternative would introduce additional noise sources to the area, such as new mechanical equipment for building utilities, including ventilation equipment (HVAC equipment) and other building mechanical systems. To address stationary operational noise sources, Mitigation Measure M-NO-3: Interior Mechanical Equipment, identified for the proposed project and described on p. 4.F.28, would also be applicable to this alternative. This mitigation measure would require that stationary sources of noise be installed with noise-insulating enclosures or other adequate noise-attenuating features. With implementation of this mitigation measure, operational noise would not significantly increase the ambient noise levels of the area and would be consistent with the noise level limits of the San Francisco Noise Ordinance and the *San Francisco General Plan* Land Use Compatibility Guidelines for Community Noise, and this impact would be mitigated to less-than-significant levels for this alternative, similar to the proposed project. As with the proposed project, the Code Compliant Alternative project-level impacts would be less-than-significant (with mitigation incorporated) and would have no cumulatively considerable contribution to significant cumulative operational ambient noise levels in the project vicinity.

Air Quality

Similar to the proposed project, the Code Compliant Alternative would result in demolition, excavation, and building construction activities that would cause emissions of criteria air pollutants and toxic air contaminants that would affect local air quality. Activities that create dust would be subject to the Construction Dust Control Ordinance. The construction activities, equipment, and phasing under this alternative would be similar to those of the proposed project. This alternative would result in construction emissions of criteria air pollutants that would be below the applicable significance thresholds. However, toxic air contaminants (TACs) emitted during construction would expose sensitive receptors to substantial pollutant concentrations, requiring mitigation, as under the proposed project. Implementation of Mitigation Measure M-AQ-2: Construction Emissions Minimization, identified for the proposed project and described on pp. 4.G.31-4.G.33, would be applicable to this alternative. This mitigation measure, which calls for the development of a construction emissions minimization plan, would reduce construction emissions and the construction-related emissions impacts of this alternative on nearby sensitive receptors to a less-than-significant level.

Due to fewer residential units and slightly less retail use, operational emissions for the Code Compliant Alternative would be similar to, but less than, those of the proposed project. Sources of operational emissions for this alternative would include a back-up emergency generator, other mechanical systems, and new motor vehicle trips with emissions from mobile sources. The emissions from mobile sources would be slightly less than those of the proposed project, because of the lower travel demand under this alternative. As with the proposed project, the project sponsor would be required to obtain applicable permits to operate an emergency generator from the BAAQMD, and Mitigation Measure M-AQ-4a: Best Available Control Technology for Diesel Generators, identified for the proposed project and described on p. 4.G.36, would also be applicable to this alternative. This mitigation measure would require the diesel generator to achieve up-to-date standards or include a verified emissions control device, which would reduce to a less-than-significant level the impact of locating a new source within an area that already experiences poor air quality.

Under this alternative, as with the proposed project, the new residential land use would be developed in an area that experiences higher levels of air pollution, and this alternative would have the potential to expose sensitive receptors to substantial concentrations of air pollutants.

Because of the setting, Mitigation Measure M-AQ-4b: Air Filtration Measures, identified for the proposed project and described on pp. 4.G.36-4.G.37, would be applicable to this alternative. This mitigation measure would require the project sponsor to install ventilation and filtration systems, with provisions for ongoing maintenance and disclosure to occupants. With implementation of this mitigation measure, this alternative would result in a less-than-significant impact with respect to exposing sensitive receptors to substantial pollutant concentrations.

As with the proposed project, the Code Compliant Alternative would not conflict with or obstruct implementation of the applicable air quality plan, and this alternative would not expose a substantial number of people to objectionable odors.

Project-level criteria air pollutant emissions at levels below the thresholds are not anticipated to contribute to an air quality violation or result in a cumulatively considerable net increase in criteria air pollutants. Although this alternative would add a new residential land use and new sources of TACs within an area of the City that is already adversely affected by poor air quality, mitigation identified for the proposed project (Mitigation Measures M-AQ-2, which could reduce construction period emissions by as much as 94 percent; M-AQ-4a, which requires best available control technology to limit emissions from the project's emergency back-up generator; and M-AQ-4b, which requires that the building be designed to reduce outdoor infiltration of fine particulate matter indoors by 80 percent) would also be applicable to this alternative. Compliance with these mitigation measures would ensure that this alternative's contribution to cumulative air quality impacts would not result in a cumulatively considerable contribution to significant cumulative air quality impacts. Therefore, as with the proposed project, there would be less-than-significant (with mitigation incorporated) project-level impacts and no cumulatively considerable contribution to significant cumulative impacts related to air quality under the Code Compliant Alternative.

Shadow

The 200-foot-tall Code Compliant Alternative, which would be 148 feet shorter than the proposed project, would shadow some of the same publicly accessible open spaces (the Embarcadero Promenade and Rincon Park), privately owned publicly accessible open spaces (POPOs), and public sidewalks. The Code Compliant Alternative would cast about 4,517,994 square-foot-hours (sfh) of annual net new shadow on Rincon Park (a reduction of about 53.5 percent when compared to the proposed project). The net new shadow on Rincon Park would occur in the afternoon throughout the year and would fall on the hardscape and seating areas in the middle of the park. Given the number of people who sit in sunlit areas of Rincon Park in the afternoon, net new shadow on these sunlit areas would adversely affect the use of these areas. For these reasons, the Code Compliant Alternative would have significant project-level shadow impacts on outdoor recreation facilities and other public areas. The TCDP EIR identified significant cumulative shadow impacts on outdoor recreation facilities and other public areas,[4] and the Code Compliant Alternative would make a cumulatively considerable contribution to this significant cumulative shadow impact.

Utilities and Service Systems

Under the Code Compliant Alternative, there would be fewer residents on the project site than with the proposed project and the increase in wastewater flows would be less than for the proposed project. The Code Compliant Alternative would not result in the exceedance of any wastewater treatment requirements. Under this alternative there would be no alterations or improvements to the Steuart Street right-of way south of Howard Street; thus stormwater drainage patterns on the Steuart Street right-of-way would be the same as under existing conditions. Stormwater management on the project site would comply with the SMO, and stormwater would be handled in a way similar to that for the proposed project and project variants. As under the proposed project, this alternative would not require or result in the construction of new or the expansion of existing water wastewater treatment facilities, or stormwater drainage facilities. Construction of the Code Compliant Alternative in combination with reasonably foreseeable projects in the project vicinity would not result in a cumulatively considerable contribution to significant and adverse cumulative impacts on the treatment of stormwater runoff or affect capacity of wastewater treatment facilities or stormwater drainage facilities. Therefore, under the Code Compliant Alternative, project-level impacts would be less than significant and there would be no cumulatively considerable contribution to significant cumulative impacts on utilities and service systems.

Biological Resources

Construction of the 200-foot-tall, high-rise tower under the Code Compliant Alternative would result in similar impacts related to bird migration and local movement, birdstrike risks, or bats as under the proposed project. Mitigation Measures M-BI-1a: Design Standards to Render Building Less Hazardous to Birds and M-BI-1b: Night Lighting Minimization, and Improvement Measure I-BI-A: Tenant Education would also be applicable to this alternative to ensure that the proposed high-rise tower would not result in significant impacts related to bird strikes. As under the proposed project, construction of the 200-foot-tall, high-rise tower would not interfere with the movement of, or have any effects on, native resident bats. Therefore, as under the proposed project, the Code Compliant Alternative would have less-than-significant project-level impacts (with mitigation incorporated) and no cumulatively considerable contribution to significant cumulative impacts related to biological resources.

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[4] San Francisco Planning Department, *Transit Center District Plan and Transit Tower Final EIR*, certified on May 24, 2012, p. 527.

Hydrology and Water Quality

Under this alternative, impacts from exposure to significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow would be the same as under the proposed project. There would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts related to impacts from inundation by seiche, tsunami, or mudflow.

Impacts from increased risk of flooding due to climate-induced sea level rise under this alternative would also be similar to those with the proposed project. As under the proposed project, even with the implementation of Mitigation Measure M-HY-2: Emergency Plan, described on pp. 4.K.25-4.K.26, there would be significant and unavoidable project-level impacts from flooding due to climate-induced sea level rise under this alternative. As under the proposed project, the Code Compliant Alternative's contribution to cumulative impacts with respect to sea level rise would not result in a cumulatively considerable contribution to significant cumulative sea level rise impacts.

Other Topics

The NOP/IS and public scoping process concluded that the proposed project would have no impacts, less-than-significant impacts, or less-than-significant impacts with mitigation in the following analysis areas:

- Land Use and Land Use Planning (Physically Divide an Established Community, only);
- Aesthetics (Create a New Source of Substantial Light or Glare, only);
- Population and Housing;
- Cultural and Paleontological Resources (Historic Resources and Paleontological Resources, only);
- Greenhouse Gas Emissions;
- Wind and Shadow (Wind, only);
- Recreation;
- Utilities and Service Systems (Exceedances of Wastewater Treatment Requirements of the Applicable Regional Water Quality Control Board, Availability of Sufficient Water Supply to Serve the Project, Capacity of Wastewater Treatment to Serve the Project, Capacity of Landfill to Serve the Project, or Compliance with Federal, State, and Local Statutes and Regulations Related to Solid Waste, only);
- Public Services;
- Biological Resources (Substantial Adverse Effects on any Species, or Special-Status Species in Local or Regional Plans, Policies, or Regulations; Substantial Adverse Effects on any Riparian Habitat or Other Sensitive Natural Community; Substantial Adverse Effects on Federally Protected Wetlands as Defined by Section 404 of the Clean Water

Act; Conflict with Any Local Policies or Ordinances Protecting Biological Resources; and Conflict with the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan or Other Approved Local, Regional, or State Habitat Conservation Plan, only);

- Geology and Soils;
- Hydrology and Water Quality (Violate Water Quality Standards or Waste Discharge Requirements; Deplete Groundwater Supplies or Interfere Substantially with Groundwater Recharge; Alter the Existing Drainage Pattern of the Site Resulting in Substantial Erosion or Siltation; Alter the Existing Drainage Pattern of the Site Resulting in Substantially Increased Runoff in a Manner that would Result in Flooding; Create or Contribute to Runoff Water which would Exceed Capacity of Existing Stormwater Systems; Degrade Water Quality; Place Housing within a 100-year Flood Hazard Area, Place Structures within a 100-year flood hazard area that would Impede or Redirect Flood Flows; and Expose People or Structures to a Significant Risk of Loss, Injury or Death Involving Flooding as a Result of a Failure of a Levee or Dam, only);
- Hazards/Hazardous Materials;
- Mineral/Energy Resources; and
- Agricultural and Forest Resources.

The Code Compliant Alternative would occupy the same building site as the proposed project, but would not include the proposed open space and Steuart Street right-of-way improvements on the open space improvement site. This alternative would include a substantially similar mix of land uses and a substantially similar (but lessened) intensity of uses on the site. Impacts under this alternative for each of the above-noted environmental topics would be substantially similar to those of the proposed project. The Code Compliant Alternative would not result in any new potentially significant impacts for the environmental topics identified in the NOP/IS for the proposed project. The mitigation measures and improvement measure presented in the NOP/Initial Study for the proposed project (Mitigation Measure M-CP-3: Paleontological Resources Monitoring and Mitigation Program, Mitigation Measure M-HZ-1a: Site Assessment and Corrective Action for All Sites, Mitigation Measures M-HZ-1b: Hazardous Building Materials Abatement, and Improvement Measure I-WS-A) would also be applicable under the Code Compliant Alternative. Therefore, the conclusions in the NOP/IS with respect to the above environmental topics would be less than significant or less than significant with mitigation under the Code Compliant Alternative.

CONCLUSION

The Code Compliant Alternative, unlike the proposed project, would result in less-than-significant project-level impacts on scenic vistas of Downtown from the eastern waterfront and the Bay Bridge. The reduced height of the high-rise tower would substantially step down to the waterfront open space and the Bay and would be more consistent with the City's vision for the urban form of San Francisco's Downtown; thus it would reinforce the existing pattern discernible at the southeast edge of Downtown because it would be more similar in height than the proposed project to the buildings immediately adjacent to the project site. Unlike the proposed project, the Code Compliant Alternative would also result in less-than-significant project-level land use and land use planning impacts since this alternative would comply with the existing height limit for the project site. The Code Compliant Alternative would result in less annual net new shadow on Rincon Park, but would still create significant and unavoidable shadow impacts on Rincon Park. Neither the proposed project nor the Code Compliant Alternative would make a cumulatively considerable contribution to significant cumulative aesthetic or land use impacts, because both the proposed project and the Code Compliant Alternative would be substantially shorter than the new height limits and buildings anticipated by the TCDP on nearby blocks. As under the proposed project, but to a lesser degree, the Code Compliant Alternative would result in the following significant and unavoidable impacts: significant and unavoidable cumulative impacts on intersection operations at Spear Street/Howard Street under 2035 cumulative conditions (transportation and circulation); and significant and unavoidable project-level and cumulative shadow impacts on Rincon Park (shadow). The Code Compliant Alternative would have the same, but to a lesser degree, significant and unavoidable project-level and cumulative shadow impacts on outdoor recreation facilities and other public areas as under the proposed project. The Code Compliant Alternative would also have the same significant and unavoidable project-level impacts as the proposed project from the increased risk of flooding due to climate-induced sea level rise. As with the proposed project, but to a lesser degree, the Code Compliant Alternative would result in less-than-significant impacts (with mitigation or improvement measures) related to cultural and paleontological resources, noise, air quality, wind, utilities and service systems, biological resources, and hazards and hazardous materials. This alternative, as with the proposed project, would result in less-than-significant impacts in the areas of population and housing, greenhouse gas emissions, recreation, public services, geology and soils, and mineral and energy resources. Neither the Code Compliant Alternative nor the proposed project would result in impacts related to agricultural and forest resources.

The Code Compliant Alternative would achieve some of the basic objectives of the project sponsor. This alternative would improve the architectural and urban design character of the City's waterfront by replacing the existing above-grade parking garage with a high-quality residential project with ground floor retail uses and sufficient parking. It would also increase the City's supply of housing. The Code Compliant Alternative, however, would not meet the project sponsor's objective to construct streetscape improvements and open space that serve the neighborhood residents and workers, and enliven pedestrian activity on the waterfront during evening and nighttime hours, nor would it meet the sponsor's objectives to construct a high-quality project that includes a sufficient number of residential units to make economically feasible the demolition and replacement of the existing above-grade parking garage, produce a reasonable return on investment for the project sponsor and its investors, and attract investment capital and construction financing. Specifically, and according to the project sponsor, the Code Compliant Alternative may be financially infeasible, as the Code Compliant Alternative and the existing Planning Code requirements applicable to the property are not conducive to residential use, as the Code Compliant Alternative would contain floor plates (17,000 square feet) that are unusually large for a residential building.[5] Such floor plates significantly exceed the market standard for residential buildings because bedrooms and living rooms require access to daylight and air. The interior space must be built at nearly the same cost as any other interior area of the building, but it does not add to the value of the unit in the same way that even a very small extra bedroom for children or guests would. Floor plates of these sizes (17,000 sf and greater) are occasionally seen in residential buildings but only when the site is wide enough to allow for very rectangular or bar shaped double-loaded buildings of no more than 80 feet in depth, with service cores typically placed at the ends.[6]

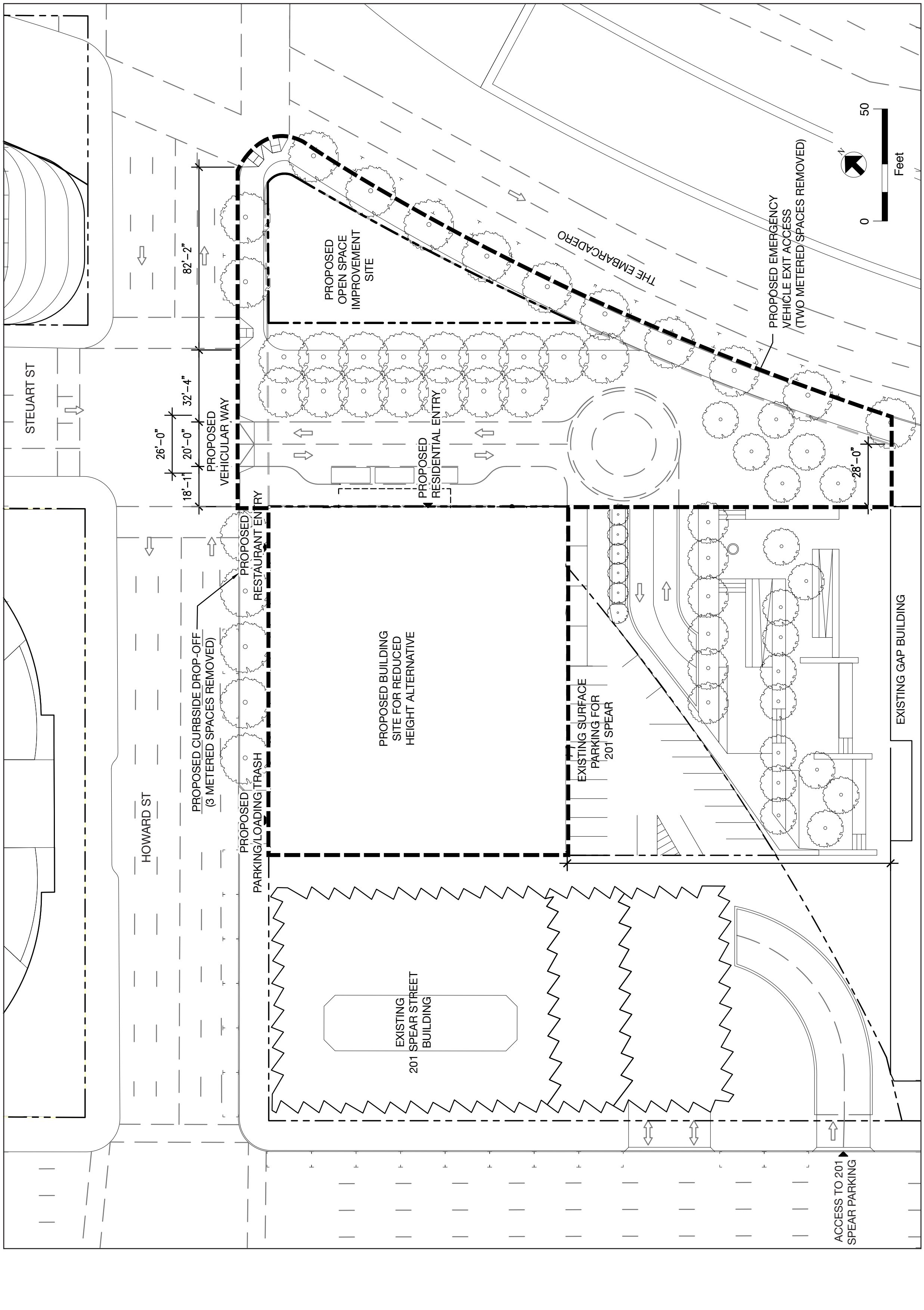
D. ALTERNATIVE C: REDUCED HEIGHT ALTERNATIVE

DESCRIPTION

Alternative C: Reduced Height Alternative provides an alternative that would reduce (but not eliminate) the land use, aesthetic and shadow impacts when compared to the proposed project. Under this alternative, the existing commercial parking garage would be demolished and a new 25-story, approximately 281-foot-tall tower (plus an additional 17-foot-tall elevator/mechanical penthouse screening) would be constructed on the 75 Howard Street building site (see Figure 6.3: Reduced Height Alternative Site Plan and Figure 6.4: Reduced Height Alternative Massing Diagrams). This alternative would be 6 stories or 67 feet shorter than the tower under the proposed project, and would be similar in height to the immediately adjacent buildings. The Reduced Height Alternative would contain 172 market rate units (14 fewer units than under the proposed project) and approximately 5,900 gsf of retail use, including space for restaurant and café uses, (slightly less than under the proposed project).

Under the Reduced Height Alternative, a total of 159 parking spaces (16 fewer spaces than under the proposed project) would be constructed in a 25,700-gsf parking garaged located on two below-grade levels accessed from Howard Street. One parking space would be reserved for car-share vehicles and 158 parking spaces would be assigned to building residents and commercial uses. Similar to the proposed project, none of the parking spaces would be independently accessible; all vehicles would be mechanically parked by valet in stacked spaces. Similar to the proposed project, this alternative would include two loading spaces located on Basement Level 1.

[5] Email correspondence from Mark Schwettmann, SOM, to W. Calvin Meeder, Paramount Group, Tuesday, May 28, 2013.
[6] Email correspondence from Mark Schwettmann, SOM, to W. Calvin Meeder, Paramount Group, Tuesday, May 28, 2013.

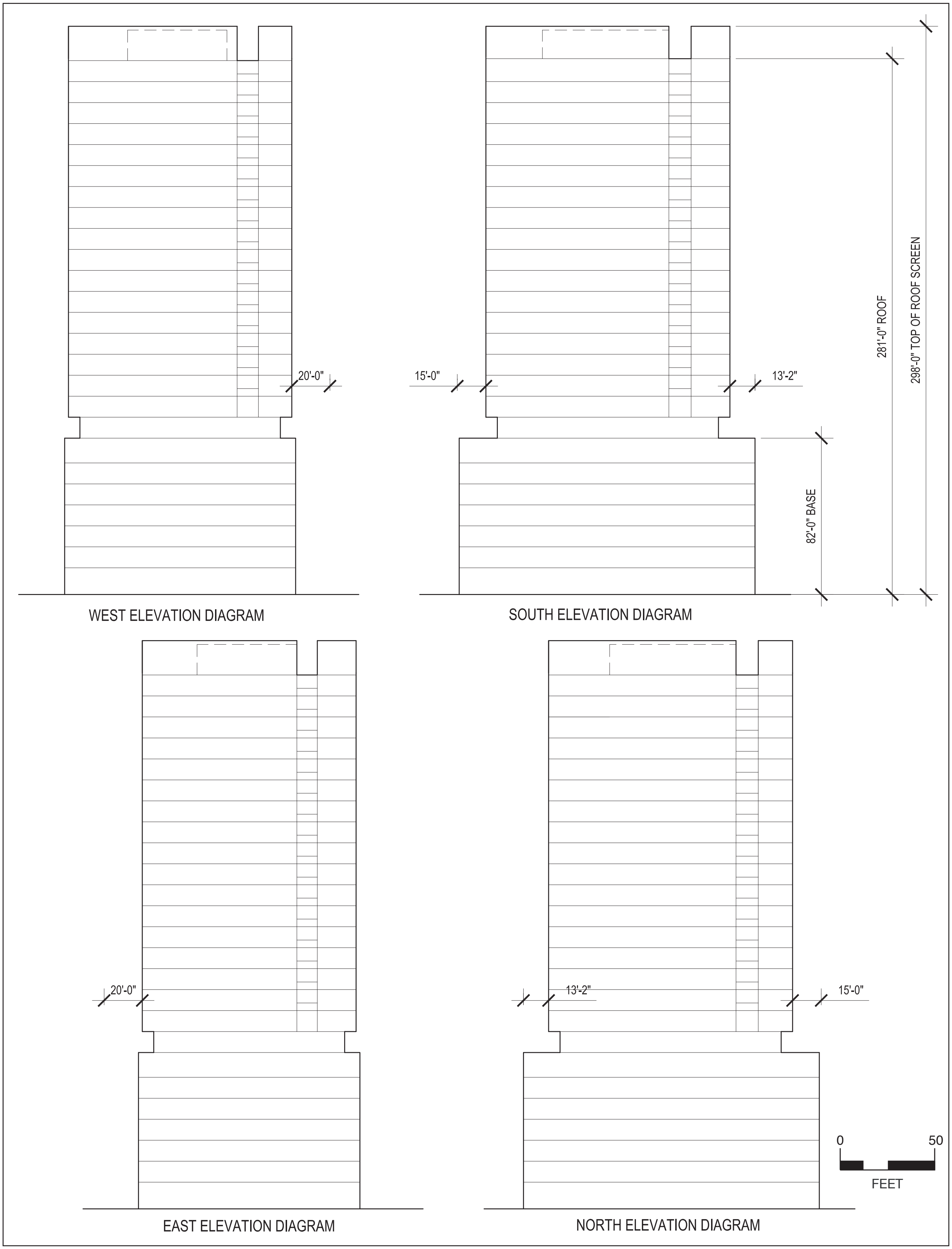


SOURCE: Turnstone Consulting, SOM

REDUCED HEIGHT ALTERNATIVE SITE BOUNDARY

75 HOWARD STREET

FIGURE 6.3: REDUCED HEIGHT ALTERNATIVE SITE PLAN



SOURCE: SOM; Turnstone Consulting

75 HOWARD STREET

FIGURE 6.4: REDUCED HEIGHT ALTERNATIVE MASSING DIAGRAMS

This alternative would also include 56-bicycle storage spaces (8 fewer than under the proposed project) located on Basement Level 1.

The Reduced Height Alternative would include landscaping and paving improvements, resulting in a new 4,780-sq.-ft. landscaped, publicly accessible open space at Block 3742/Lot 12 and the portion of the Steuart Street right-of-way south of Howard Street. As under the proposed project, on-street parking along the segment of Steuart Street south of Howard Street would be eliminated. This segment of Steuart Street would be narrowed, and the turnaround bulb at the southern terminus of Steuart Street would be reconfigured.

This alternative would comply with the lower tower bulk controls, but it would not comply with the upper tower bulk control that establishes a maximum diagonal building dimension of 160 feet. The tower portion of this alternative would have a maximum diagonal building dimension of 170 feet. In addition, this alternative would not comply with the volume reduction bulk control for the upper tower, which requires that the average floor size of the upper tower be reduced as set forth in Planning Code Section 270(d)(3)(B). Based on an average lower tower floor size of 13,850 sq. ft., the upper tower would have to be reduced by 15 percent (i.e., the average upper tower floor size cannot exceed 11,772 sq. ft.). The upper tower (floors 16 and above) of this alternative would have an average floor size of approximately 13,850 sq. ft. This alternative would require bulk exceptions pursuant to Planning Code Sections 270, 272, and 309.

Similar to the proposed project, the Reduced Height Alternative would exceed the height limit of the existing 200-S Height and Bulk District, as well as the 200-foot height limit specified on Map 5 (Proposed Height and Bulk Districts) in the *Downtown Area Plan* of the *General Plan* and as adopted in the TCDP. As a result, this alternative would require the adoption of legislative amendments to reclassify the height limit from 200 feet to 285 feet (recommendation of adoption by the Planning Commission and adoption by the Board of Supervisors). Other required discretionary approvals are identical to those required for the proposed project. These include approval of a *General Plan* Referral, approval of a Section 309 Determination of Compliance and Request for Exceptions for the Construction of a New Building in a C-3 District, and the granting of variances from Planning Code requirements for Dwelling Unit Exposure (per Planning Code Section 1409) and Street Frontages (per Planning Code Section 145.1).

This alternative would not include either the Parking Variant or the Residential/Hotel Mixed Use Variant which were analyzed under the proposed project.

IMPACTS

Land Use and Land Use Planning

The Reduced Height Alternative would include a mix of residential, retail, and below-grade parking uses. Under this alternative, landscaping and paving improvements would be made to the open space improvement site, resulting in a new 4,780-sq.-ft. publicly accessible open space. As with the proposed project, this alternative would not physically divide an established community or have an adverse impact upon the existing character of the project vicinity. At a height of 281 feet, this alternative would not be consistent with some of the objectives and policies of the *General Plan's* Urban Design Element, *Downtown Area Plan*, and TCDP, and it would not comply with the existing height limit for the project site. Due to its shorter height, this alternative would cast less annual net new shadow on Rincon Park than would the proposed project. As with the proposed project and the No Project Alternative, this alternative would conflict with Priority Policy No. 8, which calls for the protection of parks and open spaces and their access to sunlight and vistas. For these reasons, the Reduced Height Alternative would have the same significant and unavoidable land use impacts described for the proposed project in Section 4.B, Land Use and Land Use Planning. As with the proposed project, the Reduced Height Alternative would not make a cumulatively considerable contribution to a significant cumulative land use impact, because both the proposed project and the Reduced Height Alternative would be somewhat shorter than the new height limits and buildings anticipated by the TCDP on nearby blocks.

The physical environmental impacts that could result from the potential conflicts between the Reduced Height Alternative and the objectives and policies of the *General Plan* and Priority Policy No. 8 are discussed below under the topics of Aesthetics and Shadow.

Aesthetics

Section 4.C, Aesthetics, on pp. 4.C.3-4.C.4, identifies two types of potentially affected scenic vistas: Views Along Inland Street View Corridors, and Views of Downtown from the Eastern Waterfront and the Bay Bridge. The impact of this alternative on views along inland street view corridors would be substantially the same as that described for the proposed project on pp. 4.C.18-4.C.20. As with the proposed project, this alternative would not obstruct views to the Bay from inland street corridors, but, together with existing buildings, would frame these views, and would have a less-than-significant effect on scenic vistas along inland street view corridors.

Like the proposed project, this alternative would have a significant and unavoidable impact on scenic vistas of Downtown from the eastern waterfront and the Bay Bridge. At a height of 281 feet, this alternative would be potentially inconsistent with certain policies relating to urban form as articulated in the objectives and policies of the *General Plan's* Urban Design Element, *Downtown Area Plan*, and TCDP. In particular, because this alternative would be similar in height to the buildings immediately adjacent to the project site rather than shorter than these immediately adjacent buildings, this alternative would potentially conflict with policies calling for Downtown building heights to respect the prevailing scale of development and to step down to the waterfront. While conformity or conflict with plans and policies is not to be construed as constituting a significance threshold, these plans and policies reflect the City's vision for the overall form of Downtown, and can inform the analysis of impacts under CEQA. This alternative, because it is not shorter than the buildings immediately adjacent to it, could be experienced as interrupting an existing pattern discernible at the southeast edge of Downtown of buildings stepping down to the water's edge. This existing pattern is to be continued and reinforced in new development under the *General Plan*. As such, the impact of this alternative on scenic vistas of Downtown as viewed from the eastern waterfront would be considered significant and unavoidable.

The impact of the Reduced Height Alternative on scenic resources would be similar to that described for the proposed project. The project site contains no scenic resources. As with the proposed project, this alternative would reinforce the western edge of The Embarcadero, presenting an active face to The Embarcadero and Rincon Park, and would develop the open space improvement site into a landscaped publicly accessible open space. Like the proposed project, this alternative would have a less-than-significant effect on scenic resources.

Under the Reduced Height Alternative, it is assumed that the design and materials of the new tower would be similar to the proposed project, and include features that relate visually with the surrounding setting and improve the pedestrian realm, including development of a new public open space on the open space improvement site. This alternative would have a less-than-significant effect on visual character and quality.

The Reduced Height Alternative would have a similar cumulative impact as that described for the proposed project. As with the proposed project, this alternative would not make a cumulatively considerable contribution to a significant impact related to aesthetics.

Cultural Resources

Excavation required for the Reduced Height Alternative would be similar to that required for the proposed project in terms of location and depth. As such, potential impacts on archaeological resources under this alternative would be similar to those with the proposed project. Mitigation Measures M-CP-1a: Archaeological Testing, Monitoring, Data Recovery and Reporting; M-CP-1b: Interpretation; and M-CP-1c: Accidental Discovery, identified for the proposed project and described on pp. 4.D.35-4.D.40, would also be applicable to this alternative to ensure that, similar to the proposed project, potential project-level impacts on archaeological resources, if present within the project site, would be less than significant (with mitigation incorporated) under this alternative and that contributions to significant cumulative impacts to archaeological resources would not be cumulatively considerable.

Transportation and Circulation[7]

Existing Plus Reduced Height Alternative

Under the Reduced Height Alternative, the location and size of the restaurant (4,913 gsf) and café (918 gsf) uses would be the same as under the proposed project. However, under this alternative the proposed building would be 6 stories shorter and 16 fewer residential units would be developed (172 residential units compared to 186 residential units under the proposed project). As a result, the travel demand generated by the Reduced Height Alternative for all modes would be less than that under the proposed project, as shown in Table 6.3: Trip Generation by Mode for Proposed Project and Reduced Height Alternative (Weekday PM Peak Hour).

Table 6.3: Trip Generation by Mode for Proposed Project and Reduced Height Alternative (Weekday PM Peak Hour)

	Person-Trips					
	Auto	**Transit**	**Walk**	**Other** [a]	**Total**	**Vehicle Trips**
Proposed Project						
Total	274	156	363	80	873	195
Reduced Height Alternative						
Total	264	150	353	78	845	188

Notes:
[a] "Other" includes bicycle, motorcycle, and additional modes such as taxis.
Source: Adavant Consulting, June 2013

Traffic Impacts

Under the Reduced Height Alternative, as shown in Table 6.3, 188 vehicle trips would be generated during the weekday p.m. peak period (7 fewer than under the proposed project). Traffic impacts at the nine study intersections would be similar to, but less than, those with the proposed project. As under the proposed project, the impact on traffic operations at the nine study intersections under this alternative would be less than significant.

Transit Impacts

Under the Reduced Height Alternative, as shown in Table 6.3, 150 transit trips would be generated during the weekday p.m. peak period (6 fewer than under the proposed project). Similar to the proposed project, impacts on local and regional transit capacity utilization with this alternative would be less than significant. Improvement Measure I-TR-A: Transit Information for Residents, identified for the proposed project and described on p. 4.E.50, would also be

[7] 75 Howard Street Project – Alternatives Assessment, pp. 8-11.

applicable to this alternative to promote transit use. Improvement Measure I-TR-A would encourage residents to use transit by having the project sponsor include a transportation insert in new resident move-in packets with information on available transit service (nearby lines, schedules and fares), information on where Clipper Cards could be purchased, and information on the 511 Regional Rideshare Program.

Pedestrian Impacts

Under the Reduced Height Alternative, as shown in Table 6.3, 503 walk trips (353 pedestrian trips and 150 transit trips[8]) would be generated during the weekday p.m. peak period; this is 16 fewer walk trips (10 fewer pedestrian trips and 6 fewer transit trips) than under the proposed project. As with the proposed project, under the Reduced Height Alternative pedestrian access to the restaurant/café and residential uses on the project site would be from Howard Street and Steuart Street, respectively, and the two-way parking garage driveway would be located at the west end of Howard Street. Department of Public Works and San Francisco Public Utilities Commission approval for the width increases to the east and west sidewalks along Steuart Street and the Steuart Street roadway elevation change and reconfiguration would also be required under this alternative.

As with the proposed project, impacts on pedestrian level of service on the adjacent sidewalks and crosswalks – the Howard Street/Steuart Street sidewalks, the Spear Street/Howard Street crosswalk, and the Steuart Street/Howard Street crosswalk – during the weekday p.m. peak period and Saturday midday peak hour with this alternative would be less than significant. Conflicts between pedestrians and vehicles could occur at the two-way parking garage entry driveway under the Reduced Height Alternative, as with the proposed project. Therefore, Improvement Measures I-TR-C: Driveway Operations Plan, I-TR-D: Vehicle Queues and Pedestrian Conflicts, and I-TR-E: Installation of Pedestrian Alerting Devices, identified for the proposed project and described on pp. 4.E.55-4.E.56, would also be applicable to this alternative. Improvement Measure I-TR-C would result in the implementation of a *Driveway Operations Plan*, Improvement Measure I-TR-D would result in the implementation of a queue abatement program to ensure that vehicle queues do not block any portion of the sidewalk or roadway of Howard Street, and Improvement Measure I-TR-E would improve the visibility and awareness of cars and pedestrians at the proposed garage entrance.

Bicycle Impacts

Under the Reduced Height Alternative, 56 bicycle storage spaces would be located on the first basement level and would be accessed by elevator from either the residential or service entrance located at the ground floor. The Reduced Height Alternative would not substantially change

[8] Transit trips are included because they involve walking from the transit stop to the project site.

bicycle travel in the vicinity of the project site, and therefore, similar to the proposed project, impacts on bicyclists would be less than significant. While impacts on bicyclists would be less-than-significant with this alternative, Improvement Measures I-TR-F: Installation of Bicycle Racks on the Steuart Street Plaza and I-TR-G: Provision of Bicycle Signage and Information, identified for the proposed project and described on p. 4.E.59, would also be applicable to this alternative to promote the use of bicycles. Improvement Measure I-TR-F would result in the installation of bicycle racks in the proposed Steuart Street Plaza to support the restaurant/café uses and Improvement Measure I-TR-G would result in the development and installation of signage indicating the location of bicycle routes and bicycle parking areas.

Loading Impacts

As with the proposed project, the Reduced Height Alternative would provide two off-street freight loading spaces (35 feet long by 12 feet wide by 14 feet high) on the first basement level with access via the two-way driveway at the west end of Howard Street. Off-street loading operations and trash pick-up service under the Reduced Height Alternative would be similar to those for the proposed project. Under this alternative, there would be fewer residential units than under the proposed project; therefore, loading demand would be reduced under this alternative compared to the proposed project. Since the Reduced Height Alternative would provide the code-required off-street loading spaces, and since the loading demand could be accommodated within the proposed supply, loading impacts under this alternative would be less than significant, as with the proposed project.

Like the proposed project, the Reduced Height Alternative would require approval through the SFMTA Color Curb Program to develop two curbside drop-off areas: one on Howard Street (40 feet long) to support the proposed restaurant use and the other on Steuart Street (68 feet long) to support the proposed residential use. As with the proposed project, under this alternative development of the project driveway and curbside drop-off area on Howard Street would require the removal of three metered on-street parking spaces, and the modifications to the Steuart Street right-of-way would require the removal of 10 metered on-street parking spaces. Like the proposed project, this alternative would provide sufficient passenger loading to meet the demand on the project site; therefore loading impacts would be less than significant. While loading impacts would be less than significant with this alternative, Improvement Measure I-TR-E: Driveway Operations Plan, identified for the proposed project and described on p. 4.E.56, and Improvement Measures I-TR-I: Sidewalk Widening and I-TR-J: Reservation of Curb Parking for Residential Move-In and Move-Out, identified for the proposed project and described on p. 4.E.62, would also be applicable to this alternative to help improve loading operations and to minimize indirect effects on transportation operating conditions in the project vicinity.

Emergency Access Impacts

As with the proposed project, implementation of the Reduced Height Alternative would result in a reduction to the total roadway width of the Steuart Street cul-de-sac (from 44.5 feet wide to 26 feet wide). The project sponsor would be required to receive approval from the San Francisco Fire Department for the proposed Steuart Street roadway width reduction, and the new emergency vehicle exit via The Embarcadero as under the proposed project. Under the Reduced Height Alternative, there would be no other change to the configuration or capacity of the travel lanes adjacent to the project site. Therefore, the Reduced Height Alternative would not affect emergency vehicle access to the project site or project vicinity, nor would it change the configuration or capacity of adjacent travel lanes such that it would conflict with the San Francisco Fire Code. Similar to the proposed project, impacts on emergency access under this alternative would be less than significant.

Parking Impacts

Under the Reduced Height Alternative, a total of 159 parking spaces (16 fewer than under the proposed project) would be provided (156 assigned to residential uses, 1 car-share space, and 2 commercial parking spaces assigned to the restaurant/café uses). As with the proposed project, under this alternative off-street parking would be located in the second below-grade basement level, and access into the parking garage would be via a 24-foot-wide, two-way driveway at the west end of the proposed building along Howard Street. None of the parking spaces would be independently accessible, i.e., all parking would be by attendant operating a mechanical parking system, and no on-site public parking would be provided. Similar to the proposed project, under the Reduced Height Alternative the project sponsor would request, through the Section 309 Review process, an increase in the maximum amount of accessory off-street parking allowed under Planning Code Section 151.1, and would seek a variance from the Planning Code to allow for the development of a 24-foot-wide garage access driveway.

As with the proposed project, under the Reduced Height Alternative the existing 540-space public parking garage at 75 Howard Street and 13 on-street metered parking spaces would be eliminated, resulting in a reduction in the off-street and on-street parking supplies in the project vicinity. The residential and commercial uses associated with the Reduced Height Alternative would generate a peak evening demand of 296 parking spaces, approximately 22 fewer spaces than under the proposed project. Compared to a supply of 155 long-term parking spaces,[9] the Code Compliant Alternative parking demand would result in a shortfall of 141 spaces during the weekday evening period, which would be slightly less than that for the proposed project. As with the proposed project, under the Reduced Height Alternative the loss of the existing public parking spaces during the midday period would result in motorists parking outside of the study area or shifting to

[9] This total does not include the car-share space.

another travel mode, and during the evening period the off-street parking supply in the study area would be sufficient to meet demand.

Under the Reduced Height Alternative, 8 fewer vehicles would enter and exit the Howard Street parking garage during the weekday p.m. peak hour than under the proposed project. As with the proposed project, parking operations would not be expected to result in queues that spill out of the parking garage and back onto Howard Street. Unlike the proposed project, which would include Improvement Measure I-TR-K: Installation of Electronic “Parking Full” Sign, described on p. 4.E.69, no improvement measures have been identified for this alternative.

Construction Impacts

Construction activities associated with the Reduced Height Alternative would be similar to, but less than, those described for the proposed project. Overall, the construction-related transportation impacts of this alternative would be less than significant due to their temporary and limited duration, similar to the proposed project but particularly since this alternative would involve less on-site development compared to the proposed project. Improvement Measures I-TR-L: Expanded Traffic Control Plan for Construction, M: Carpool and Transit Access for Construction Workers, and N: Project Construction Updates for Adjacent Businesses and Residents, identified for the proposed project and described on pp. 4.E.71-4.E.72, would be applicable to this alternative to reduce its less-than-significant construction-related transportation effects. Improvement Measures I-TR-L, M, and N could require the contractor to prepare a traffic control plan for project construction to reduce potential conflicts between construction activities and pedestrians, transit, and autos; could require the construction contractor to encourage carpooling and transit access to the site by construction workers; and could require the project sponsor to provide nearby residences and adjacent businesses with regularly updated information regarding project construction.

2035 Cumulative Conditions

As with the proposed project, 2035 cumulative conditions under the Reduced Height Alternative would include the public realm and transportation system improvements proposed as part of the TCDP. Under the Reduced Height Alternative, as shown in Table 6.3, 188 vehicle trips would be generated during the weekday PM peak period (7 fewer than under the proposed project). Under 2035 cumulative conditions, vehicle delays would increase at the nine study intersections compared to existing conditions, and, as under the proposed project, six of the nine study intersections – The Embarcadero/Mission Street, The Embarcadero/Howard Street, The Embarcadero/Folsom Street, The Embarcadero/Harrison Street, Spear Street/Howard Street, and Spear Street/Folsom Street – would operate at LOS E or LOS F (as described in Section 4.E, Transportation and Circulation, pp. 4.E.72-4.E.75). The other three study intersections – Steuart

Street/Mission Street, Steuart Street/Howard Street, and Fremont Street/Folsom Street/I-80 WB Off-Ramp – would operate at LOS C or LOS D under 2035 cumulative conditions.

Like the proposed project, the Reduced Height Alternative would result in less-than-significant cumulatively considerable contributions to significant cumulative impacts at five of the six study intersections that operate at LOS E or LOS F under 2035 cumulative conditions, based on consideration of the alternative's contribution to critical movements. Therefore, the Reduced Height Alternative's traffic impacts under 2035 cumulative conditions at these five study intersections (The Embarcadero/Mission Street, The Embarcadero/Howard Street, The Embarcadero/Folsom Street, The Embarcadero/Harrison Street, and Spear Street/Folsom Street) would result in a less-than-significant cumulatively considerable contribution.

As described on EIR pp. 4.E.72-4.E.75, intersection operations at Spear Street/Howard Street under 2035 cumulative conditions would degrade to LOS E due to the elimination of one or two southbound travel lanes between Market Street and Folsom Street and their conversion into one northbound travel lane, as called for in the TCDP. This significant cumulative impact would not arise without implementation of this component of the TCDP. Implementation of *Mitigation Measure PRP-TRAFFIC-li* was identified as infeasible in the *TCDP Transportation Impact Study*; therefore, the significant cumulative traffic impact at the Spear Street/Howard Street intersection under 2035 cumulative conditions would be unavoidable. As with the proposed project, which would contribute considerably to the significant cumulative traffic impact at the Spear Street/Howard Street intersection (as described in Section 4.E, Transportation and Circulation, pp. 4.E.72-4.E.75), the Reduced Height Alternative would also contribute to the significant cumulative traffic impact at the Spear Street/Howard Street intersection, although to a lesser degree, because it would generate slightly fewer new vehicle and transit trips. Therefore, under the Reduced Height Alternative, the suggested transportation and circulation mitigation measure identified for the proposed project (Mitigation Measure M-C-TR-1: Modifications to the Intersection of Spear and Howard Streets, described on p. 4.E.74) would also be applicable. However, as discussed therein, the feasibility of this mitigation measure is not certain, and, like the proposed project, the Reduced Height Alternative would generate a cumulatively considerable contribution to the significant and unavoidable cumulative impact at the Spear Street/Howard Street intersection.

As described on pp. 4.E.75-4.E.77, transit operations under 2035 cumulative conditions for the Geary subcorridor of Muni's Northwest screenline would exceed the 85 percent capacity utilization standard resulting in a significant cumulative transit impact. The additional project-related transit trips generated under both the proposed project and this alternative would be within the daily variation of transit demand. Therefore, under the Reduced Height Alternative as with the proposed project, the project-related transit trips added to the Muni screenlines and subcorridors, including those to the Northwest screenline's Geary subcorridor, would make a minimal contribution to the cumulative transit ridership increase and the contribution would be considered less than significant.

In summary, the proposed project would have less-than-significant project-level traffic and transit impacts, would make a significant contribution to a significant cumulative traffic impact at the Spear Street/Howard Street intersection, but would not make a significant contribution to a significant cumulative transit impact at the Geary corridor of Muni's Northwest screenline, while the Reduced Height Alternative would generate similar, but slightly reduced, less-than-significant, project-level traffic and transit impacts, would make a significant, but slightly reduced, contribution to a significant and unavoidable cumulative traffic impact at the Spear Street/Howard Street intersection, and would not contribute to a significant cumulative transit impact at the Geary corridor of Muni's Northwest screenline. Furthermore, compared to the proposed project, which would generate a less-than-significant contribution to cumulative impacts on pedestrian, bicycle, and loading impacts as well as construction-related transportation and circulation impacts in the project vicinity, the Reduced Height Alternative would generate a similar, but slightly reduced, contribution to pedestrian, bicycle, and loading impacts under 2035 cumulative conditions as well as to construction-related transportation and circulation impacts.

Noise

Similar to the proposed project, the Reduced Height Alternative would result in demolition, excavation, and building construction activities that would temporarily and intermittently increase noise and groundborne vibration in the project vicinity to levels that could be considered an annoyance by occupants of nearby properties. The greatest construction noise and vibration impacts would be during demolition and basement construction, and the loudest activities, such as installation of piles, demolition, and excavation, would occur over the first 30 weeks, the same duration as with the proposed project. The overall duration of construction noise would be shorter than that for the proposed project. Construction activities would be required to comply with the San Francisco Noise Ordinance. However, as with the proposed project, noise from construction would still be substantially greater than existing noise levels in the project vicinity and could significantly impact nearby sensitive receptors. To ensure construction noise and vibration are reduced to the maximum amount feasible, Mitigation Measures M-NO-1a: Noise Control Measures During Pile Driving, and M-NO-1b: General Construction Noise Control Measures, identified for the proposed project and described in Section 4.F, Noise, pp. 4.F.22-4.F.23, would also be applicable under this alternative. Mitigation Measure M-NO-1a would require the use of feasible noise- and vibration-reducing techniques for installing piles such as erecting barriers and pre-drilling pile holes where feasible, and Mitigation Measure M-NO-1b would require the project contractor to use equipment with lower noise emissions and sound controls where feasible, locate stationary equipment as far as possible from sensitive receptors, designate a construction noise complaint and enforcement manager, and provide advance notification to surrounding receptors.

Construction of the Reduced Height Alternative would cause cumulative construction noise impacts that would occur with other projects in the vicinity, including construction occurring as development is approved pursuant to implementation of the TCDP. As with the proposed project, Mitigation Measure M-C-NO-1a: Cumulative Construction Noise Control Measures, p. 4.F.34, would also be applicable to this alternative. Mitigation Measure M-C-NO-1a would ensure that construction of the alternative would not result in a cumulatively considerable contribution to temporary or periodic increases in ambient noise or vibration. As with the proposed project, implementation of these mitigation measures under this alternative would decrease significant project-level construction noise and vibration impacts and cumulatively considerable contributions to cumulative construction noise and vibration impacts to a less-than-significant level.

Operation of the Reduced Height Alternative would introduce additional noise sources to the area, such as new mechanical equipment for building utilities, including ventilation equipment (HVAC equipment) and other building mechanical systems. To address stationary operational noise sources, Mitigation Measure M-NO-3: Interior Mechanical Equipment, identified for the proposed project and described on p. 4.F.28, would also be applicable to this alternative. This mitigation measure would require that stationary sources of noise be installed with noise-insulating enclosures or other adequate noise attenuating features. With implementation of this mitigation measure, operational noise would not significantly increase the ambient noise levels of the area and would be consistent with the noise level limits of the San Francisco Noise Ordinance and the *San Francisco General Plan* Land Use Compatibility Guidelines for Community Noise, and this impact would be mitigated to less-than-significant levels for this alternative, similar to the proposed project. As with the proposed project, there would be less-than-significant (with mitigation incorporated) project-level impacts and no cumulatively considerable contribution to significant cumulative operational ambient noise levels in the project vicinity under the Reduced Height Alternative.

Air Quality

Similar to the proposed project, the Reduced Height Alternative would result in demolition, excavation, and building construction activities that would cause emissions of criteria air pollutants and TACs that would affect local air quality during the construction duration. Activities that create dust would be subject to the Construction Dust Control Ordinance. The construction activities, equipment, and phasing under this alternative would be similar to those of the proposed project. As a result, this alternative would result in construction emissions of criteria air pollutants that would be below the applicable significance thresholds. However, TACs emitted during construction would expose sensitive receptors to substantial pollutant concentrations, requiring mitigation, as under the proposed project. Implementation of Mitigation Measure M-AQ-2: Construction Emissions Minimization, identified for the proposed project and described on pp. 4.G.31-4.G.33, would also be applicable to this alternative. This mitigation measure, which calls for the development of a construction emissions minimization plan, would reduce construction emissions and the construction-related emissions impacts of this alternative on nearby sensitive receptors to a less-than-significant level.

Due to fewer residential units and slightly less retail use, operational emissions for the Reduced Height Alternative would be similar to, but slightly less than, those of the proposed project. Sources of operational emissions for this alternative would include a back-up emergency generator, other mechanical systems, and new motor vehicle trips with emissions from mobile sources. The emissions from mobile sources would be less than those of the proposed project, because of the lower travel demand under this alternative. As with the proposed project, the project sponsor would be required to obtain applicable permits to operate an emergency generator from the BAAQMD, and Mitigation Measure M-AQ-4a: Best Available Control Technology for Diesel Generators, identified for the proposed project and described on p. 4.G.36, would also be applicable to this alternative. This mitigation measure would require the diesel generator to achieve up-to-date standards or include a verified emissions control device, which would reduce to a less-than-significant level the impact of locating a new source within an area that already experiences poor air quality.

Under this alternative, as with the proposed project, the new residential land use would be developed in an area that experiences higher levels of air pollution, and this alternative would have the potential to expose sensitive receptors to substantial concentrations of air pollutants. Because of the setting, Mitigation Measure M-AQ-4b: Air Filtration Measures, identified for the proposed project and described on pp. 4.G.36-4.G.37, would also be applicable to this alternative. This mitigation measure would require the project sponsor to install ventilation and filtration systems, with provisions for ongoing maintenance and disclosure to occupants. With implementation of this mitigation measure, this alternative would result in a less-than-significant impact with respect to exposing sensitive receptors to substantial pollutant concentrations.

As with the proposed project, the Reduced Height Alternative would not conflict with or obstruct implementation of the applicable air quality plan, and this alternative would not expose a substantial number of people to objectionable odors.

Project-level criteria air pollutant emissions at levels below the thresholds are not anticipated to contribute to an air quality violation or result in a cumulatively considerable net increase in criteria air pollutants. Although this alternative would add a new residential land use and new sources of TACs within an area of the City that is already adversely affected by poor air quality, mitigation identified for the proposed project (Mitigation Measures M-AQ-2, which could reduce construction period emissions by as much as 94 percent; M-AQ-4a, which requires best available control technology to limit emissions from the project's emergency back-up generator; and M-AQ-4b, which requires that the building be designed to reduce outdoor infiltration of fine particulate matter indoors by 80 percent) would also be applicable to this alternative. Compliance with these mitigation measures would ensure that this alternative's contribution to cumulative air quality impacts would not result in a cumulatively considerable contribution to significant cumulative air quality impacts. Therefore, as with the proposed project, there would be less-than-significant (with mitigation incorporated) project-level impacts and no cumulatively considerable contribution to significant cumulative impacts related to air quality under the Reduced Height Alternative.

Shadow

The 281-foot-tall Reduced Height Alternative, which is 67 feet shorter than the proposed project, would shadow the same publicly accessible open spaces (the Embarcadero Promenade and Rincon Park), POPOs, and public sidewalks. The Reduced Height Alternative would cast about 9,280,011 sfh of annual net new shadow on Rincon Park (a reduction of about 4.5 percent when compared to the proposed project). The net new shadow on Rincon Park would occur in the afternoon throughout the year and would fall on the Embarcadero Promenade, which forms the eastern perimeter of the park and is used for active recreation, as well as many of the seating areas in the park. Additional shadows on areas of the park used for active recreation would not adversely affect pedestrians, runners, and other active recreational users, because they constantly move between areas of sun and shadow as they pass through the park. Given the number of people who sit in sunlit areas of Rincon Park in the afternoon, net new shadow on these sunlit areas would adversely affect the use of these areas. For these reasons, the Reduced Height Alternative would have significant project-level shadow impacts on outdoor recreation facilities and other public areas. The TCDP EIR identified significant cumulative shadow impacts on outdoor recreation facilities and other public areas,[10] and the Reduced Height Alternative would make a cumulatively considerable contribution to this significant cumulative shadow impact.

Utilities and Service Systems

Under the Reduce Height Alternative, there would be fewer residents on the project site. The increase in water demand and wastewater flows would be similar to, but slightly less than, the increase with the proposed project. Under this alternative, the proposed improvements to the Steuart Street right-of way south of Howard Street would be the same as those described for the proposed project and project variants. Similar to the proposed project and project variants,

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[10] San Francisco Planning Department, *Transit Center District Plan and Transit Tower Final EIR*, certified on May 24, 2012, p. 527.

stormwater drainage patterns would be altered and proposed improvements would require the same set of approvals for construction work in the public right-of-way as the proposed project and project variants. The Reduced Height Alternative would not result in the exceedance of any wastewater treatment requirements. Stormwater management on the project site would comply with the SMO, and stormwater would be handled in a way similar to that for the proposed project and project variants. As under the proposed project, this alternative would not require or result in the construction of new or the expansion of existing water wastewater treatment facilities, or stormwater drainage facilities, the construction of which could have significant environmental effects. Like the proposed project and project variants, construction of the Reduce Height Alternative in combination with reasonably foreseeable projects in the project vicinity would not result in a cumulatively considerable contribution to significant and adverse cumulative impacts on the treatment of stormwater runoff or affect capacity of wastewater treatment facilities or stormwater drainage facilities. Therefore, as with the proposed project and project variants, project-level impacts would be less-than-significant and no cumulatively considerable contribution to significant cumulative impacts on utilities and service systems would occur under the Reduce Height Alternative.

Biological Resources

Construction of the 281-foot-tall high-rise tower under the Reduced Height Alternative would result in similar impacts related to bird migration and local movement, birdstrike risks, or bats as under the proposed project. Mitigation Measures M-BI-1a: Design Standards to Render Building Less Hazardous to Birds and M-BI-1b: Night Lighting Minimization, and Improvement Measure I-BI-A: Tenant Education, would be applicable to this alternative to ensure that the proposed high-rise tower would not result in significant impacts related to bird strikes. As under the proposed project, construction of the 281-foot-tall high-rise tower would not interfere with the movement of, or have any effects on, native resident bats. Therefore, the Reduced Height Alternative would have less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts related to biological resources.

Hydrology and Water Quality

Construction and excavation required for the Reduced Height Alternative would be similar to that required for the proposed project in terms of location and depth. As under the proposed project, potential impacts from exposure to significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow would be less than significant under this alternative, and the cumulatively considerable contribution to significant cumulative impacts from inundation by seiche, tsunami, or mudflow would be less than significant.

Impacts from increased risk of flooding due to climate-induced sea level rise under this alternative would also be similar to those with the proposed project. As under the proposed project, even with the implementation of Mitigation Measure M-HY-2: Emergency Plan, described on pp. 4.K.25-4.K.26, there would be significant and unavoidable project-level impacts from flooding due to climate- induced sea level rise under this alternative. As under the proposed project, the Reduced Height Alternative's contribution to cumulative impacts with respect to sea level rise would not result in a cumulatively considerable contribution to significant cumulative sea level rise impacts.

Other Topics

The NOP/IS and public scoping process concluded that the proposed project would have no impacts, less-than-significant impacts, or less-than-significant impacts with mitigation in the following analysis areas:

- Land Use and Land Use Planning (Physically Divide an Established Community, only);
- Aesthetics (Create a New Source of Substantial Light or Glare, only);
- Population and Housing;
- Cultural and Paleontological Resources (Historic Resources and Paleontological Resources, only);
- Greenhouse Gas Emissions;
- Wind and Shadow (Wind, only);
- Recreation;
- Utilities and Service Systems (Exceedances of Wastewater Treatment Requirements of the Applicable Regional Water Quality Control Board, Availability of Sufficient Water Supply to Serve the Project, Capacity of Wastewater Treatment to Serve the Project, Capacity of Landfill to Serve the Project, or Compliance with Federal, State, and Local Statutes and Regulations Related to Solid Waste, only);
- Public Services;
- Biological Resources (Substantial Adverse Effects on any Species, or Special-Status Species in Local or Regional Plans, Policies, or Regulations; Substantial Adverse Effects on any Riparian Habitat or Other Sensitive Natural Community; Substantial Adverse Effects on Federally Protected Wetlands as Defined by Section 404 of the Clean Water Act; Conflict with Any Local Policies or Ordinances Protecting Biological Resources; and Conflict with the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan or Other Approved Local, Regional, or State Habitat Conservation Plan, only);
- Geology and Soils;
- Hydrology and Water Quality (Violate Water Quality Standards or Waste Discharge Requirements; Deplete Groundwater Supplies or Interfere Substantially with Groundwater Recharge; Alter the Existing Drainage Pattern of the Site Resulting in Substantial Erosion or Siltation; Alter the Existing Drainage Pattern of the Site Resulting in Substantially Increased Runoff in a Manner that would Result in Flooding; Create or

Contribute to Runoff Water which would Exceed Capacity of Existing Stormwater Systems; Degrade Water Quality; Place Housing within a 100-year Flood Hazard Area, Place Structures within a 100-year flood hazard area that would Impede or Redirect Flood Flows; and Expose People or Structures to a Significant Risk of Loss, Injury or Death Involving Flooding as a Result of a Failure of a Levee or Dam, only);

- Hazards/Hazardous Materials;
- Mineral/Energy Resources; and
- Agricultural and Forest Resources.

The Reduced Height Alternative would occupy the same project site as the proposed project, and would include a similar mix of uses on the site. Impacts under this alternative for each of the above-noted environmental topics would be substantially similar to those of the proposed project. The Reduced Height Alternative would not result in any new potentially significant impacts for the environmental topics identified in the NOP/IS for the proposed project. As under the proposed project, the mitigation measures and improvement measure presented in the NOP/IS (Mitigation Measure M-CP-3: Paleontological Resources Monitoring and Mitigation Program, Mitigation Measure M-HZ-1a: Site Assessment and Corrective Action for All Sites, Mitigation Measures M-HZ-1b: Hazardous Building Materials Abatement, and Improvement Measure I-WS-A) would also be applicable under the Reduced Height Alternative. Therefore, the conclusions in the NOP/IS with respect to the above environmental topics would be less than significant or less than significant with mitigation under the Reduced Height Alternative.

CONCLUSION

The Reduced Height Alternative would result in the same significant and unavoidable impacts, although to a slightly less degree, as identified for the proposed project. As under the proposed project, but to a somewhat lesser degree, the Reduced Height Alternative would still result in the following significant and unavoidable impacts: significant and unavoidable project-level land use and land use planning impacts since this alternative would not comply with the existing height limit for the project site, and would result in net new shadow on Rincon Park (land use and land use planning); significant and unavoidable impacts on scenic vistas of Downtown from the eastern waterfront and the Bay Bridge (aesthetics); significant and unavoidable cumulative impacts on intersection operations at Spear Street/Howard Street under 2035 cumulative conditions (transportation and circulation); and significant and unavoidable project-level and cumulative shadow impacts on Rincon Park (shadow). The Reduced Height Alternative would have the same, but to a slightly lesser degree, significant and unavoidable project-level and cumulative shadow impacts on outdoor recreation facilities and other public areas as under the proposed project. The Reduced Height Alternative would also have the same significant and unavoidable project-level impacts as the proposed project from the increased risk of flooding due to climate-induced sea level rise. As with the proposed project, but generally to a lesser degree, the Reduced Height Alternative would result in less-than-significant impacts (with mitigation or improvement measures) related to cultural and paleontological resources, noise, air quality, wind, utilities and service systems, biological resources, and hazards and hazardous materials. This alternative, as with the proposed project but to a slightly lesser degree, would result in less-than-significant impacts in the areas of population and housing, greenhouse gas emissions, recreation, public services, geology and soils, and mineral and energy resources. Neither the proposed project nor the Reduced Height Alternative would result in impacts related to agricultural and forest resources. Neither the proposed project nor the Reduced Height Alternative would make a cumulatively considerable contribution to significant cumulative aesthetic or land use impacts, because both the proposed project and the Reduce Height Alternative would be substantially shorter than the new height limits and buildings anticipated by the TCDP on nearby blocks.

The Reduced Height Alternative would achieve most of the basic objectives of the project sponsor. This alternative would improve the architectural and urban design character of the City's waterfront by replacing the existing above-grade parking garage with a high-quality residential project with ground floor retail uses and sufficient parking. It would also increase the City's supply of housing. This alternative would also meet the project sponsor's objective to construct streetscape improvements and open space that serve the neighborhood residents and workers, and enliven pedestrian activity on the waterfront during evening and nighttime hours. However, according to the project sponsor, the Reduced Height Alternative would not meet the project sponsor's objective to be able to construct a high-quality project that includes a sufficient number of residential units to make economically feasible the demolition and replacement of the existing above-grade parking garage, produce a reasonable return on investment for the project sponsor and its investors, attract investment capital and construction financing.

E. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA Guidelines Section 15126.6(e)(2) requires identification of an environmentally superior alternative if the proposed project has significant impacts that cannot be mitigated to a less-than-significant level. 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 significant impacts associated with implementation of the proposed project would not occur under the No Project Alternative. The No Project Alternative would not meet any of the project objectives of the project sponsor.

Pursuant to the CEQA Guidelines, an EIR is required to identify the environmentally superior alternative that has the fewest significant environmental impacts from among the other alternatives evaluated. The proposed project would result in significant and unavoidable project specific impacts related to land use and land use planning, aesthetics, shadow, and hydrology and water quality, and to cumulative impacts related to transportation and circulation, and shadow. The Code Compliant Alternative would be the environmentally superior alternative because it would result in less-than-significant impacts related to land use and land use planning and aesthetics, unlike the proposed project. The Code Compliant Alternative would still result in significant and unavoidable impacts to shadow, and hydrology and water quality, and to cumulative transportation and circulation impacts.

The Code Compliant Alternative would comply with the existing height limit for the project site, and therefore would have a shorter high-rise tower than the proposed project. This alternative would meet the policies of the *General Plan's* Urban Design Element, *Downtown Area Plan*, and TCDP that call for buildings at the southeast edge of Downtown to step down in height toward the waterfront. At the lower height limit, this alternative would result in less annual net new shadow due to the reduced height of the high-rise tower. The Code Compliant Alternative would comply with the existing height limit for the project site, would result in less annual net new shadow on Rincon Park than under the proposed project. Thus, the Code Compliant Alternative would be the environmentally superior alternative.

F. ALTERNATIVES CONSIDERED BUT REJECTED

Section 15126.6(c) of the 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."

Off-Site Alternative. No off-site alternative location has been considered for the proposed project. The proposed project would demolish an existing parking garage and construct a new mixed-use, waterfront high-rise tower on a project site that is already owned and operated by the project sponsor. While there are other waterfront locations along The Embarcadero, few could accommodate a similar-sized project, and none of those parcels is under the ownership of the project sponsor. The only other property owned by the project sponsor in the City and County of San Francisco is an already developed site located at One Market Plaza (1 Market Street), containing the 11-story Southern Pacific Building, the 43-story Spear Tower, and the 27-story Steuart Tower. The project sponsor has not indicated any plans to acquire development rights to or purchase another waterfront property in San Francisco in the near future.

Original Preliminary Project Assessment Design. The original Preliminary Project Assessment Design (PPA Design) application proposed a development similar to the Reduce Height Alternative. The proposed tower under the PPA Design was approximately 280 feet tall, and was defined by a single column-like form beginning at the tower's ground level up to the top level without any increased bulk at the base. The Planning Department ultimately rejected the PPA Design; a significant setback at the height of the predominant streetwall was requested for the tower, and the project sponsor revised the proposed project.

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