DRAFT
ENVIRONMENTAL IMPACT REPORT

San Francisco Museum of Modern Art Expansion / Fire Station Relocation and Housing Project

PLANNING DEPARTMENT
CASE NOS. 2009.0291E and 2010.0275E

STATE CLEARINGHOUSE NO. 2010102047

Draft EIR Publication Date:	JULY 11, 2011
Draft EIR Public Hearing Date:	AUGUST 11, 2011
Draft EIR Public Comment Period:	JULY 11, 2011 - AUGUST 25, 2011

SAN FRANCISCO PLANNING DEPARTMENT

Written comments should be sent to:
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TO: Distribution List for SFMOMA Expansion and Fire Station Relocation and Housing Project

FROM: Bill Wycko, Environmental Review Officer

SUBJECT: Request for the Draft Environmental Impact Report for the SFMOMA Expansion and Fire Station Relocation and Housing Project (Planning Department Case Nos. 2009.029E and 2010.0275E)

This is the Draft of the Environmental Impact Report (EIR) for the SFMOMA Expansion and Fire Station Relocation and Housing 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 "Comments and Responses" that 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 Comments and Responses document, along with notice of the date reserved for certification; others may receive a copy of the Comments and Responses and notice by request or by visiting our office. This Draft EIR, together with the Comments and Responses 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 Comments and Responses 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 Comments and Responses 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 Comments and Responses 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 to private individuals only if they request them. If you would like a copy of the Final EIR, therefore, please fill out and mail the postcard provided to the Major Environmental Analysis 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.

Thank you for your interest in this project.

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GLOSSARY

A	Inhalation breathing factor
ABAG	Association of Bay Area Governments
AERMOD	Model used in preparation of Health Risk Assessments
ALS	Advanced Life Support
AT	Average time over which exposure to an air pollutant is measured
Axonometric	A drawing technique devised to represent three-dimensional objects on flat paper. Objects are projected on the drawing surface so that they appear inclined with three sides showing and with horizontal and vertical distances drawn to scale, but diagonal and curved lines distorted.
BAAQMD	Bay Area Air Quality Management District
Back-of-House	Generally refers to space used for support or organizational space
BART	Bay Area Rapid Transit
bgs	Below the ground surface
BP	Before the present (time)
C-3-0	Downtown office Use District
C-3-S	Downtown Support Use District
C_{air}	Concentration of particulate matter in air
CalEEMod	California Emission Estimator Model
Cal-OSHA	State of California Occupational Safety and Health Administration
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CH_4	Methane
CNEL	Community Noise Equivalent Level

CO	carbon monoxide
CO_2	carbon dioxide
CO_2E	carbon dioxide equivalent
Corps	U.S. Army Corps of Engineers
CRAF	Cancer risk adjustment factor
dB	decibel
dBA	A-weighted decibel
DBA	diameter of tree at breast height
DBI	San Francisco Department of Building Inspection
DBR	Adult daily breathing rate
DDA	Development and Disposition Agreement
DHS	San Francisco Fire Department Division of Homeland Security
Differential Compaction	A phenomenon in which non-saturated, cohesionless soil is made more dense by earthquake vibrations, causing differential settlement.
Double-Bay	Two side-by-side spaces between vertical supports (such as garage doors)
Downtown	As used in this document, the area defined by the San Francisco Downtown Area Plan. The Plan area is irregularly shaped, but is generally bounded by Washington Street on the northeast; The Embarcadero on the east; Folsom Street on the south; and Market Street on the northwest.
DPH	San Francisco Department of Public Health
DPM	Diesel particulate matter
DPW	San Francisco Department of Public Works
East SoMa	As used in this document, the area defined by the East SoMa (South of Market) Area Plan. The Plan area is irregularly shaped and is generally bounded by Mission Street and Folsom Street on the north; The Embarcadero on the east; Townsend Street, Harrison Street, and Mission Creek Channel on the south; and Seventh Street and Fourth Street on the west.

ED	Exposure duration
EF	Exposure frequency
EIR	Environmental Impact Report
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
EPD	San Francisco Environmental Planning Division
ESL	Environmental Screening Levels
Essential Facility	A public facility that is critical to maintaining public health and/or safety, and that is typically difficult to site
FAR	Floor Area Ratio
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FRM	Federal Reference Method
FTE	Full-Time-Equivalent Employees; refers to the number of employees working the equivalent of 40-hour work weeks
GHG	Greenhouse Gases, the gases primarily responsible for global climate change
GPS	Global Positioning System
HABS	Historic American Building Survey
HRA	Health Risk Assessment
HVAC	Heating, ventilation, and air conditioning
I-80	Interstate 80
Lateral Spreading	The phenomenon in which surface soil is displaced along a zone that has formed within an underlying liquefied layer.
L_{dn}	Day-night equivalent noise level
LEED	Leadership in Energy and Environmental Design

L_{eq}	Continuous equivalent noise level
Liquefaction	The transformation of soil from a solid to a liquefied state during which saturated soil temporarily loses strength resulting from the buildup of excess pore water pressure, which may occur during earthquakes.
L_{max}	Maximum instantaneous noise level
L_{min}	Minimum instantaneous noise level
LOS	Level of Service
MEI	Maximum Exposed Individual
$MMTCO_2E$	Million metric tons of CO_2
mpg	Miles per gallon
MPL	Multiple Property Listing
MPO	Metropolitan Planning Organization
MTA	San Francisco Metropolitan Transportation Agency
MUNI	San Francisco Municipal Railway
MUR	Mixed Use Residential Use District
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NC-T	Neighborhood Commercial Transit Use District
ND	No data
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NO_2	Nitrogen dioxide
NOP	Notice of Preparation of an Environmental Impact Report
NO_x	Nitrogen oxide
NPDES	National Pollutant Discharge Elimination System

NWIC	Northwest Information Center, Sonoma State University
O_3	Ozone
OEHHA	California Office of Environmental Health and Hazard Assessment
OPR	State of California Governor's office of Planning and Research
P	Public Use District
Pb	Lead
PCB	Polychlorinated biphenyl, a class of organic compounds considered toxic
PDR	Production, Distribution and Repair; generally light, medium or heavy industrial or manufacturing use
PM	Particulate matter
Porte Cochere	Covered or sheltered entryway for vehicles or pedestrians
ppb	Parts per billion
pphm	Parts per hundred million
pphm	Parts per hundred million
ppm	Parts per million
ppv	Peak particle velocity
PRC	State of California Public Resources Code
PV	Photovoltaic
RED	Residential Enclave Use District
REL	Referenced exposure level
rms	Root mean square
ROG	Reactive organic gases
RSD	Residential Service Use District
RTP	Regional Transportation Plan

SEL	Sound exposure level
SF Datum	SF Datum (SFD) establishes the City's zero point for surveying purposes at approximately 8.6 feet above the zero elevation for the National Geodetic Vertical Datum of 1929, which was based on the sea level datum in 1929. Since 1929, the mean sea level has increased by approximately 0.44 feet.
SFBAAB	San Francisco Bay Area Air Basin
SFFD	San Francisco Fire Department
SFHA	Special Flood Hazard Area
SFMOMA	San Francisco Museum of Modern Art
SFPUC	San Francisco Public Utilities Commission
SFUSD	San Francisco Unified School District
SMP	Site Mitigation Plan
SO_2	Sulfur dioxide
SoMa	South of Market neighborhood
SRO	Single room occupancy residential units
TAC	Toxic air contaminant
U.S. EPA	United States Environmental Protection Agency
U.S. OSHA	United States Occupational Safety and Health Administration
UCSF	University of California at San Francisco
UMB	Unreinforced masonry building
UMU	Urban Mixed Use District
URBEMIS	An urban emissions model
USC	United States Code
UST	Underground Storage Tank
VMT	Vehicle miles traveled

VOC	Volatile organic compound
WHO	World Health Organization
μg/m^3	Micrograms per cubic meter

SUMMARY

INTRODUCTION

This document is a Draft Environmental Impact Report (EIR) for the proposed San Francisco Museum of Modern Art (SFMOMA) Expansion and Fire Station Relocation and Housing Project (collectively identified as "projects" in this EIR). This chapter of the EIR provides a summary of the projects; a summary of anticipated environmental impacts of the projects and identified mitigation measures; areas of controversy to be resolved; a summary of alternatives; and an identification of the environmentally superior alternative. The project sponsor, SFMOMA, proposes to expand the existing SFMOMA and relocate Fire Station No. 1 from 676 Howard Street to 935 Folsom Street. In addition, up to 13 multi-family residential units would be constructed on the 935 Folsom Street site.

PROJECT SUMMARY

The proposed projects would be developed on two project sites and would include: 1) an up-to-approximately 230,000-square-foot expansion of the existing SFMOMA, a private non-profit modern art museum located at 151 Third Street (between Mission and Howard Streets); 2) the demolition of two structures to its south (670 Howard Street and 676 Howard Street) to accommodate the expansion; and 3) the relocation of San Francisco Fire Department Station No. 1 (Fire Station No. 1) from 676 Howard Street to 935 Folsom Street. The existing building at 935 Folsom Street (formerly used for apparel manufacturing and as a commercial laundry) would be demolished and, in addition to construction of a new fire station fronting Folsom Street, the site would be subdivided and a residential building containing up to 13 multi-family units would be constructed on the portion of the site fronting Shipley Street.

The proposed projects would require the following approvals (by the designated authorities):

SFMOMA Expansion

- Planning Code Section 309 Downtown Project Approval (Planning Commission)
- Vacation of Hunt Street and conveyance to SFMOMA (Board of Supervisors)
- Rezoning of 676 Howard Street from P (Public) to C-3-S (Downtown Support) (Board of Supervisors, with recommendation from Planning Commission)
- Amendment of 151 Third Street Disposition and Development Agreement (DDA) (Redevelopment Agency Commission)
- Lot Merger (Department of Public Works)
- Demolition and Building Permits (Department of Building Inspection)

Fire Station Relocation and Housing Project

- Amendment to General Plan, Map 2 in Community Facilities Element (Fire Facilities Plan)
- Planning Code Section 307(h)/327 Eastern Neighborhoods Project Approval (Planning Commission or Zoning Administrator)
- Rezoning of the fire station portion of the lot from MUR (Mixed Use Residential) to P (Public) (Board of Supervisors with recommendation from Planning Commission)
- Design approval of new public building (Arts Commission)
- Lot Subdivision (Department of Public Works)
- Demolition and Building Permits (Department of Building Inspection)

A detailed description of the proposed projects is provided in Chapter II, Project Description.

SUMMARY OF IMPACTS AND MITIGATION MEASURES

This EIR analyzes the potential environmental effects of the proposed projects, as identified in the Notice of Preparation (NOP) of an EIR, issued October 27, 2010 (Appendix A of this EIR). The Initial Study attached to the NOP (also included in Appendix A) found that the proposed projects would have potentially significant environmental effects in the areas of: Aesthetics; Cultural Resources;

Transportation and Circulation; Noise; Air Quality; Greenhouse Gas Emissions; Wind and Shadow; and Public Services. Impacts in the following areas would be less than significant (some with the mitigation measures identified in the Initial Study) and are not evaluated in this EIR: Population and Housing; Paleontological Resources; Recreation; Utilities and Service Systems; Biological Resources; Geology and Soils; Hydrology and Water Quality; Hazards/Hazardous Materials; Minerals/Energy Resources; and Agriculture and Forestry Resources.

This summary provides an overview of the analysis contained in Chapter IV, Setting, Impacts and Mitigation Measures. Table S-1 summarizes the less-than-significant and significant effects expected to result from the proposed projects, along with identified mitigation measures.

The proposed projects would result in two significant unavoidable impacts, even with implementation of the mitigation measures identified in this EIR: 1) the demolition of the industrial building at 935 Folsom Street, which is considered individually eligible for listing in the California Register of Historical Resources based on its association with the redevelopment of the SoMa neighborhood following the 1906 earthquake and fire (California Register Criterion 1), as well as for its representation of industrial architecture designed by a notable local architect (California Register Criterion 3); and 2) exposure of sensitive receptors to substantial pollutant concentrations and the making of a considerable contribution to cumulatively significant levels of small particulate matter ($PM_{2.5}$) and toxic air contaminants.

AREAS OF CONTROVERSY TO BE RESOLVED

On the basis of public comments submitted after publication of the EIR Notice of Preparation (NOP), potential areas of controversy and unresolved issues for the proposed projects include:

- Detail of proposed project plans
- Construction-period impacts related to aesthetics, transportation, noise, and air quality
- Impacts to wind and shadow patterns
- Emission of greenhouse gases
- Demolition of historically-significant structures

- Effects on visual character and scenic vistas
- Ability of proposed residential units to be accommodated on the site
- Incorporation of art into the projects
- Operation-period impacts related to traffic, noise, and air quality
- Noise associated with emergency vehicle sirens and horns

The issues listed above are discussed in this EIR.

SUMMARY OF ALTERNATIVES

The following alternatives to the projects are considered in this EIR:

- The **No Project Alternative**, under which the project sites would not be redeveloped in the short-term, and would remain generally in their existing condition.

SFMOMA Expansion Site (670-676 Howard Street)

- The **Preservation Alternative**, under which the building located at 676 Howard Street would remain intact and Fire Station No. 1 would remain in operation. Under this alternative, the SFMOMA Howard Street addition would occupy only the footprint of 670 Howard Street. This alternative would be coupled with preservation of the existing building located at 935 Folsom Street (i.e., the No Project Alternative would be implemented only on the Fire Station Relocation and Housing Project site).
- The **Partial Fire Station Demolition Alternative**, under which the façade of the building located at 676 Howard Street would be preserved. The museum addition on this parcel would be set back approximately 50 feet from the edge of Howard Street to preserve the massing of the Howard Street frontage of the building. Fire Station No. 1 would be relocated to 935 Folsom Street under this alternative.

Fire Station Relocation and Housing Project Site (935 Folsom Street)

- The **Adaptive Reuse Alternative**, under which the existing building at 935 Folsom Street would be adaptively reused as Fire Station No. 1. Three new vehicle bay doors would be cut into the

Folsom Street façade and other openings along Falmouth Street or Shipley Street would need to be created. A seismic retrofit of the building would be required to meet essential facilities standards. In addition, no housing would be constructed on the site.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The proposed projects would result in significant and unavoidable effects to historic architectural resources and air quality due to the proposed demolition of the structure located at 935 Folsom Street and the release of construction-period pollutants at the Fire Station Relocation and Housing Project site. The No Project alternative would avoid these significant effects. The environmentally superior alternative is that alternative (other than the No Project Alternative) that would result in the least substantial environmental effects of any alternative. Thus, this EIR identifies the Preservation Alternative as the environmentally superior alternative. The Preservation Alternative would avoid identified significant unavoidable impacts to historical resources by retaining the 935 Folsom Street building and would avoid the release of construction-period air pollutants at the Fire Station Relocation and Housing Project site. However, this alternative would not achieve many of the objectives identified for the proposed projects, including the construction of adequate facilities to accommodate the Doris and Donald Fisher Collection, and the criteria established by the San Francisco Fire Department for a new fire station.

SUMMARY TABLE

Table S-1 identifies the impacts and mitigation measures for the proposed projects. The information in the tables is organized to correspond with environmental issues discussed in Chapter IV and the Initial Study included in Appendix A. The table is arranged in four columns: 1) impacts; 2) level of significance prior to mitigation measures (if applicable); 3) mitigation measures (if applicable); and 4) level of significance after mitigation (if applicable). For a complete description of potential impacts and recommended mitigation measures, please refer to the topical sections in Chapter IV. Please note that Section IV.D, Transportation and Circulation, includes Improvement Measures (these are not included in Table S-1).

Table S-1: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
CULTURAL RESOURCES			
CP-2: The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project would result in damage to, or destruction of, as-yet unknown archaeological or human remains, should such remains exist beneath the project site.	Significant	M-CP-2 (applies to SFMOMA Expansion and Fire Station Relocation and Housing Project): 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 Planning Department (Department) pool of qualified archaeological consultants as provided by the 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). [For the SFMOMA Expansion, the archaeological consultant's work shall be conducted in accordance with this mitigation measure, and with the requirements of the project archaeological research design and treatment plan (Far Western Anthropological Research Group. *Archaeological Research Design and Treatment Plan for the Transit Center District Plan Area.* February 2010) at the direction of the Environmental Review Officer (ERO). In instances of inconsistency between the requirement of the project archaeological research design and treatment plan and of this archaeological mitigation measure, the requirements of this archaeological mitigation measure shall prevail.] 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 4 weeks. At the direction of the ERO, the suspension of construction can be extended beyond 4 weeks only if such a suspension is the only feasible means	Less Than Significant

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
CP-2 *Continued*		to reduce to a less-than-significant level potential effects on a significant archaeological resource as defined in *CEQA Guidelines* Section 15064.5 (a)(c). *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 shall be implemented, the archaeological monitoring program shall minimally include the following provisions:	

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
CP-2 *Continued*		• The archaeological consultant, project sponsor, and ERO shall meet and consult on the scope of the AMP reasonably prior to the commencement of any project-related soils disturbing activities. 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.	

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
CP-2 *Continued*		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*. The archaeological data recovery program shall be conducted in accordance 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.	

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
CP-2 *Continued*		• *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) (Public Resources Code Section 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* 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. *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.	

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
CP-2 *Continued*		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 Major Environmental Analysis division of the Planning Department shall receive one bound, one unbound, and one unlocked, searchable PDF copy on CD or DVD of the FARR along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest in or high interpretive value of the resource, the ERO may require a different final report content, format, and distribution than that presented above.	
CP-4: The Fire Station Relocation and Housing Project would result in the demolition of the industrial building at 935 Folsom Street, considered a historical resource.	Significant and Unavoidable	CP-4: To partially offset the demolition of the building at 935 Folsom Street, the project sponsor shall retain an architectural historian to complete architectural documentation that meets Historic American Building Survey (HABS) standards prior to demolition. The survey shall be done in accordance with HABS level II documentation standards and shall include the following measures: • Prior to demolition, the project sponsor shall provide adequate documentation of the existing building. The documentation shall be submitted to the San Francisco Planning Department and approved prior to the authorization of demolition. The sponsor shall prepare and transmit the photographs and descriptions of the property to the Northwest Information Center of the California Historical Resources Information System and the History Room of the San Francisco Public Library. The documentation shall include: o Digital videography of the building to document its exterior character-defining features, as determined by a qualified architectural historian. o Photo-documentation of the buildings to HABS Standards. Completing a historical resources survey to HABS level II documentation standards would reduce Impact CP-4, but not to a less-than-significant level. Therefore, the impact would be significant and unavoidable.	Significant and Unavoidable

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
NOISE			
NO-2**:** Noise from stationary sources associated with the Fire Station Relocation and Housing Project would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	Significant	NO-2: The project sponsor shall incorporate standard industrial noise control measures for stationary equipment. Such measures may include enclosing equipment in sound- attenuating structures, using buildings to shield these noise sources from sensitive receptors, or mounting equipment on resilient pads to reduce both groundborne and airborne vibration noises. The project sponsor shall adopt noise performance standards to ensure that operational noise from stationary sources would not exceed noise guidelines set forth in the Noise Ordinance for fixed source noise level standards. The project sponsor shall use standard design features/approaches, including installation of relatively quiet models of mechanical equipment, installation of exhaust silencers, orientation or shielding to protect sensitive uses, and installation within enclosures when necessary to reduce stationary, or fixed source, noise levels to below the established threshold when measured at the property line of the nearest affected sensitive receptor. In addition, once design plans have been finalized, the project sponsor shall prepare a detailed final acoustical analysis report with building design noise reduction requirements that would maintain acceptable interior noise levels and that would reduce stationary noise impacts to a less-than-significant level. This report shall be submitted to the Department of Building Inspection (DBI) prior to issuance of a building permit.	Less Than Significant
NO-2a: During construction, the proposed SFMOMA Expansion would result in a temporary or periodic increase in ambient noise levels and vibration in the project vicinity above levels existing without the project.	Significant	M-NO-2a (applies to SFMOMA Expansion only): The following two-part measure shall be implemented: • To reduce daytime noise impacts associated with construction activities to the maximum extent feasible, the following measures shall be implemented in addition to all measures set forth in the Noise Ordinance: o At least 10 days prior to the start of construction, the project sponsor shall notify occupants of properties within 100 feet of the project site's lot line (comprising the following addresses: 151 Third Street and 670 and 676 Howard Street). Notification shall include an estimation of the duration of construction activities, including anticipated start and completion dates and the daily construction times. o Equipment and trucks used for project construction shall 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).	Less Than Significant

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
NO-2a *Continued*		o Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used where feasible, which could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever feasible. o Stationary noise sources shall be located as far from sensitive receptors as possible, and they shall be muffled and enclosed within temporary sheds. Insulation barriers or other measures shall be incorporated to the extent feasible. o Ground clearing, excavation, foundation pouring, building erection and exterior finishing activities shall be limited to between the hours of 7:00 a.m. to 8:00 p.m. The project applicant shall prepare a vibration impact assessment to determine potential construction-related groundborne vibration impacts for all structures located within 25 feet of construction activities expected to generate more than 90 VdB. Measures shall be identified and implemented that would reduce groundborne vibration impacts from extreme noise generators by prescribing methods of construction to be utilized so as not to exceed the FTA's groundborne vibration damage threshold of 90 VdB at the nearest façade of all adjacent structures. Such methods may include restrictions on the number or types of construction equipment that may operate at a time within 25 feet of structures, restrictions on equipment hours of operation, or requirements to use alternative construction techniques. The vibration impact assessment shall be submitted to the Planning Department for review and approval prior to issuance of grading permits.	

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
NO-2b: During construction, the proposed Fire Station Relocation and Housing Project would result in a temporary or periodic increase in ambient noise levels and vibration in the project vicinity above levels existing without the project.	Significant	M-NO-2b (applies to Fire Station Relocation and Housing Project only): The following two-part measure shall be implemented: • Implement Mitigation Measure M-NO-2a. • The project sponsor shall require that the project contractor predrill holes (if feasible based on soils) for piles to the maximum feasible depth to minimize noise and vibration from pile driving. The project sponsor shall also require that the construction contractor limit pile driving activity to result in the least disturbance to neighboring uses.	Less Than Significant
NO-3: Residential uses constructed as part of the Fire Station Relocation and Housing Project would be substantially affected by existing traffic noise levels.	Significant	NO-3: The project sponsor shall implement the following mitigation measures from the Mitigation Monitoring and Reporting Program prepared for the Eastern Neighborhoods Rezoning and Area Plans: Mitigation Measures F-3 (Interior Noise Levels); F-4 (Siting of Noise-Sensitive Uses); and F-6 (Open Space in Noisy Environments). In particular, the project sponsor shall prepare a detailed final acoustical analysis report with building design noise reduction requirements, once design plans have been finalized, to maintain acceptable interior noise levels, and subsequently include appropriate noise insulation features in the proposed design of the multifamily residential project. Such features may include the incorporation of alternative ventilation systems, such as air conditioning or passive ventilation, to permit windows to remain closed for prolonged periods of time. Any passive ventilation systems must include appropriate noise insulation features. This report shall be submitted to the DBI prior to issuance of a building permit.	Less Than Significant
The Fire Station Relocation and Housing Project would also be subject to the following four mitigation measures identified in the Mitigation Monitoring and Reporting Program prepared for the Eastern Neighborhoods Rezoning and Area Plans.	--	F-3: Interior Noise Levels: For new development including noise-sensitive uses located along streets with noise levels above 60 dBA (Ldn), as shown in EIR Figure 18, where such development is not already subject to the California Noise Insulation Standards in Title 24 of the California Code of Regulations, the project sponsor shall conduct a detailed analysis of noise reduction requirements. Such analysis shall be conducted by person(s) qualified in acoustical analysis and/or engineering. Noise insulation features identified and recommended by the analysis shall be included in the design, as specified in the San Francisco General Plan Land Use Compatibility Guidelines for Community Noise to reduce potential interior noise levels to the maximum extent feasible.	--

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
		F-4: Siting of Noise-Sensitive Uses: To reduce potential conflicts between existing noise-generating uses and new sensitive receptors, for new development including noise-sensitive uses, the Planning Department shall require the preparation of an analysis that includes, at a minimum, a site survey to identify potential noise-generating uses within 900 feet of, and that have a direct line-of-sight to, the project site, and including at least one 24-hour noise measurement (with maximum noise level readings taken at least every 15 minutes), prior to the first project approval action. The analysis shall be prepared by persons qualified in acoustical analysis and/or engineering and shall demonstrate with reasonable certainty that Title 24 standards, where applicable, can be met, and that there are no particular circumstances about the proposed project site that appear to warrant heightened concern about noise levels in the vicinity. Should such concerns be present, the Department may require the completion of a detailed noise assessment by person(s) qualified in acoustical analysis and/or engineering 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. F-5: Siting of Noise-Generating Uses: To reduce potential conflicts between existing sensitive receptors and new noise-generating uses, for new development including commercial, industrial or other uses that would be expected to generate noise levels in excess of ambient noise, either short-term, at nighttime, or as a 24-hour average, in the proposed project site vicinity, the Planning Department shall require the preparation of an analysis that includes, at a minimum, a site survey to identify potential noise-sensitive uses within 900 feet of, and that have a direct line-of-sight to, the project site, and including at least one 24-hour noise measurement (with maximum noise level readings taken at least every 15 minutes), prior to the first project approval action. The analysis shall be prepared by persons qualified in acoustical analysis and/or engineering and shall demonstrate with reasonable certainty that the proposed use would comply with the use compatibility requirements in the General Plan and in Police Code Section 2909, would not adversely affect nearby noise-sensitive uses, and that there are no particular circumstances about the proposed project site that appear to warrant heightened concern about noise levels that would be generated by the proposed use. Should such concerns be present, the Department may require the completion of a detailed noise assessment by person(s) qualified in acoustical analysis and/or engineering prior to the first project approval action.	

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
		F-6: Open Space in Noisy Environments: To minimize effects on development in noisy areas, for new development including noise-sensitive uses, the Planning Department shall, through its building permit review process, in conjunction with noise analysis required pursuant to Mitigation Measure F-4, require that open space required under the Planning Code for such uses be protected, to the maximum feasible extent, from existing ambient noise levels that could prove annoying or disruptive to users of the open space. Implementation of this measure could involve, among other things, site design that uses the building itself to shield on-site open space from the greatest noise sources, construction of noise barriers between noise sources and open space, and appropriate use of both common and private open space in multi-family dwellings, and implementation would also be undertaken consistent with other principles of urban design.	
AIR QUALITY			
AQ-3b**:** Construction of the proposed Fire Station Relocation and Housing Project could generate fugitive dust emissions.	Significant	AQ-3: Consistent with guidance from the BAAQMD, the following actions shall be required of construction contracts and specifications for the Fire Station Relocation and Housing Project: • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • All vehicle speeds on unpaved roads shall be limited to 15 mph. • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. • Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • Clear signage indicating that idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure, Title 13, Section 2485 of California Code of Regulations (CCR)) shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.	Less Than Significant

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
AQ-3 *Continued*		• A publicly visible sign shall be posted with the telephone number and person to contact at the City of San Francisco regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.	
AQ-6b**:** Construction of the proposed Fire Station Relocation and Housing Project could expose sensitive receptors to substantial pollutant concentrations and result in a considerable contribution to cumulatively significant levels of $PM_{2.5}$ and toxic air contaminants.	Significant and Unavoidable	AQ-6: To reduce the health risk associated with construction of the Fire Station Relocation and Housing Project, all off-road construction equipment shall be equipped with Tier 3 (Tier 2 if greater than 750 hp) diesel engines or better. The following types of equipment were identified as candidates for retrofitting with CARB-certified Level 3 verified diesel emission controls (Level 3 VDECs, which are capable of reducing DPM emissions by 85 percent or better), due to their expected operating modes (i.e., fairly constant use at high revolution per minute): o Excavators o Backhoes o Rubber-Tired Bulldozers o Concrete Boom Pumps o Concrete Trailer Pumps o Concrete Placing Booms o Soil Mix Drill Rigs o Soldier Pile Rigs o Shoring Drill Rigs All diesel generators used for project construction shall meet Tier 4 emissions standards. To the extent that the above listed types of equipment are used for project construction, those equipment types shall be required to meet DPM emission standards equivalent to Tier 3 (Tier 2 if greater than 750 hp) engines with Level 3 VDECs, if feasible. For the purposes of this mitigation measure, "feasibility" refers to the availability of newer equipment in the subcontractor's fleet that meets these standards, or the availability of older equipment in the subcontractor's fleet that can be feasibly modified to incorporate Level 3 VDECs. It should be noted that for specialty equipment types (e.g. drill rigs, shoring rigs and concrete pumps) it may not be feasible for construction contractors to modify their current, older equipment to accommodate the particulate filters, or for them to provide newer models with these filters	Significant and Unavoidable

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
AQ-6 *Continued*		preinstalled. Therefore, this mitigation measure may be infeasible. Should it be determined by the construction contractor or their subcontractors that compliance with the emissions control requirements of this mitigation measure is infeasible for any one of the above listed construction equipment, the construction contractor shall demonstrate an alternative method of compliance that achieves an equivalent reduction in the project's fleetwide DPM and other TAC emissions. If alternative means of compliance with the emissions exhaust requirements are further determined to be infeasible, the construction contractor shall document, to the satisfaction of the Environmental Review Officer, that the contractor has complied with this mitigation measure to the extent feasible and why full compliance with the mitigation measure is infeasible.	
HAZARDS AND HAZARDOUS MATERIALS			
HZ-1**:** The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or reasonably foreseeable accident conditions involving the release of materials into the environment.	Significant	M-HZ-1a (applies to SFMOMA Expansion only): The following actions shall be implemented by the project sponsor: *Step 1 (Preparation of a Phase II Environmental Site Assessment)*: The project sponsor shall conduct a Phase II Environmental Site Assessment of the project site. If residual contamination is identified on the project site that requires preparation and implementation of a Site Mitigation Plan, Step 2 (and subsequent steps) shall be implemented. *Step 2 (Preparation of Site Mitigation Plan)*: A Site Mitigation Plan shall be prepared, if warranted based on the results of the Phase II Environmental Site Assessment. The SMP shall include a discussion of the level of contamination of soils and groundwater on the project site and mitigation measures for managing contaminated soils on the site, including, but not limited to: 1) the alternatives for managing contaminated soils on the site (e.g., encapsulation, partial or complete removal, treatment, recycling for reuse, or a combination of methods); 2) the preferred alternative for managing contaminated soils on the site and a brief justification as to why; and 3) the specific practices to be used to handle, haul, and dispose of contaminated soils on the site. The SMP shall be submitted to the DPH for review and approval. A copy of the SMP shall be submitted to the Planning Department to become part of the case file.	Less Than Significant

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
HZ-1 *Continued*		*Step 3 (Handling, Hauling, and Disposal of Contaminated Soils)*: The following measures *shall* be implemented: (a) Specific work practices: If, based on the results of the soil tests conducted, DPH determines that the soils on the project site are contaminated at or above potentially hazardous levels, the construction contractor shall be alert for the presence of such soils during excavation and other construction activities on the site (detected through soil odor, color, and texture and results of onsite soil testing), and shall be prepared to handle, profile (i.e., characterize), and dispose of such soils appropriately (i.e., as dictated by local, State, and federal regulations) when such soils are encountered on the site. If excavated materials contain over 1 percent friable asbestos, they shall be treated as hazardous waste, and shall be transported and disposed of in accordance with applicable State and federal regulations. These procedures are intended to mitigate any potential health risks related to chrysotile asbestos, which may or may not be located on the site. (b) Dust suppression: Soils exposed during excavation for site preparation and project construction activities shall be kept moist throughout the time they are exposed, both during and after construction work hours. (c) Surface water runoff control: Where soils are stockpiled, visqueen shall be used to create an impermeable liner, both beneath and on top of the soils, with a berm to contain any potential surface water runoff from the soil stockpiles during inclement weather. (d) Soils replacement: If necessary, clean fill or other suitable material(s) shall be used to bring portions of the project site, where contaminated soils have been excavated and removed, up to construction grade. (e) Hauling and disposal: Contaminated soils shall be hauled off the project site by waste-hauling trucks appropriately certified with the State of California and adequately covered to prevent dispersion of the soils during transit, and shall be disposed of at a permitted hazardous waste disposal facility registered with the State of California.	

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
HZ-1 *Continued*		*Step 4 (Preparation of Closure/Certification Report)*: After construction activities are completed, the Project Applicant shall prepare *and* submit a closure/certification report to DPH for review and approval. The closure/certification report shall include the mitigation measures in the SMP for handling and removing contaminated soils from the project site, whether the construction contractor modified any of these mitigation measures, and how and why the construction contractor modified those mitigation measures. M-HZ-1b (applies to SFMOMA Expansion only): If, based on the results of the soil tests conducted, the DPH determines that the soils on the project site are contaminated with contaminants at or above potentially hazardous levels, any contaminated soils designated as hazardous waste and required by DPH to be excavated shall be removed by a qualified Removal Contractor and disposed of at a regulated Class I hazardous waste landfill in accordance with U.S Environmental Protection Agency regulations, as stipulated in the SMP. The Removal Contractor shall obtain, complete, and sign hazardous waste manifests to accompany the soils to the disposal site. Other excavated soils shall be disposed of in an appropriate landfill, as governed by applicable laws and regulations, or other appropriate actions shall be taken in coordination with the DPH. If the DPH determines that the soils on the project site are contaminated with contaminants at or above potentially hazardous levels, a Site Health and Safety (H&S) Plan shall be required by the California Division of Occupational Safety and Health (Cal-OSHA) prior to initiating any earthmoving activities at the site. The H&S Plan shall identify protocols for managing soils during construction to minimize worker and public exposure to contaminated soils. The protocols shall include at a minimum: • Sweeping of adjacent public streets daily (with water sweepers) if any visible soil material is carried onto the streets. • Characterization of excavated native soils proposed for use on site prior to placement to confirm that the soil meets appropriate standards. • The dust controls specified in the Construction Dust Control Ordinance (176-08).	

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
HZ-1 *Continued*		• Protocols for managing stockpiled and excavated soils. The H&S Plan shall identify site access controls to be implemented from the time of surface disruption through the completion of earthwork construction. The protocols shall include as a minimum: o Appropriate site security to prevent unauthorized pedestrian/vehicular entry, such as fencing or other barrier or sufficient height and structural integrity to prevent entry and based upon the degree of control required. o Posting of "no trespassing" signs. o Provision for on-site meetings with construction workers to inform them about security measures and reporting/contingency procedures. If groundwater contamination is identified, the Site Health and Safety Plan shall identify protocols for managing groundwater during construction to minimize worker and public exposure to contaminated groundwater. The protocols shall include procedures to prevent unacceptable migration of contamination from defined plumes during dewatering. The H&S Plan shall include a requirement that construction personnel be trained to recognize potential hazards associated with underground features that could contain hazardous substances, previously unidentified contamination, or buried hazardous debris. Excavation personnel shall also be required to wash hands and face before eating, smoking, and drinking. The H&S Plan shall include procedures for implementing a contingency plan, including appropriate notification and control procedures, in the event unanticipated subsurface hazards are discovered during construction. Control procedures shall include, but would not be limited to, investigation and removal of underground storage tanks or other hazards.	

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
HZ-1 *Continued*		M-HZ-1c (applies to SFMOMA Expansion only): If the DPH determines that the soils on the project site are contaminated with contaminants at or above potentially hazardous levels, all trucks and excavation and soil handling equipment shall be decontaminated following use and prior to removal from the site. Gross contamination shall be first removed through brushing, wiping, or dry brooming. The vehicle or equipment shall then be washed clean (including tires). Prior to removal from the work site, all vehicles and equipment shall be inspected to ensure that contamination has been removed. M-HZ-1d (applies to SFMOMA Expansion and Fire Station Relocation and Housing Project): The City shall condition future development approvals to require that the project sponsor ensures that any equipment containing PCBs or mercury, such as fluorescent light ballasts, are removed and properly disposed of according to applicable federal, State, and local laws prior to the start of building demolition, and that any fluorescent light tubes, which could contain mercury, are similarly removed and properly disposed of. Any other hazardous materials identified, either before or during work, shall be abated according to applicable federal, State, and local laws.	

Source: LSA Associates, Inc., 2011.

INTRODUCTION

PURPOSE OF THE EIR

This Environmental Impact Report (EIR) analyzes potential physical environmental effects associated with implementation of the San Francisco Museum of Modern Art (SFMOMA) Expansion and Fire Station Relocation and Housing Project (collectively identified as "projects"), which would expand the existing SFMOMA and relocate Fire Station No. 1 from 676 Howard Street to 935 Folsom Street. The 935 Folsom Street site would be subdivided, the current building located there demolished, and 13 multi-family residential units would be constructed on the southern portion of the site fronting Shipley Street. Please refer to Chapter II for a detailed project description. This EIR is designed to inform City and County of San Francisco (City) decision-makers, responsible agencies and the general public of the proposed projects and the potential physical consequences of project approval. This EIR also examines alternatives to the proposed projects and identifies mitigation measures to reduce or avoid potentially significant physical impacts.

ENVIRONMENTAL REVIEW

The San Francisco Planning Department, serving as Lead Agency responsible for administering the environmental review for the proposed projects, prepared an Initial Study and found that preparation of an EIR was required.

The California Environmental Quality Act (CEQA) requires that, before a decision can be made to approve a project that could result in adverse physical effects, an EIR must be prepared that fully describes the environmental effects of the project. The EIR is a public information document for use by governmental agencies and the public to identify and evaluate potential environmental impacts of a project, to recommend mitigation measures to lessen or eliminate significant adverse impacts, and to examine feasible alternatives to the project. The information contained in the EIR must be reviewed and considered by the Lead Agency, Planning Commission, Board of Supervisors, and other approving bodies prior to a decision to approve, disapprove, or modify the SFMOMA Expansion and Fire Station Relocation and Housing Project.

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

The project sponsor, SFMOMA, filed an initial application in 2009 for the environmental evaluation of the proposed SFMOMA Expansion. The application was amended in 2010 to increase the scope of the SFMOMA Expansion following the announcement by the Fisher family to exhibit the Doris and Donald Fisher Collection at SFMOMA and to add the Fire Station Relocation and Housing Project. An Initial Study was then prepared, that identified the environmental issues that would be addressed in the EIR and the environmental issues that could be excluded from any further detailed analysis.

On October 27, 2010, the City sent a Notice of Preparation (NOP) of an EIR to governmental agencies and organizations and persons interested in the projects. The Initial Study and NOP are included as Appendix A of this EIR. The NOP requested agencies and other interested parties to comment on environmental issues that should be addressed in the EIR. The comment letters received in response to the Initial Study and NOP are available for review as part of Case File Nos. 2009.0291E and 2010.0275E.

In general, comments on the NOP requested that the EIR analyze the following issues, which are addressed in the identified EIR and/or Initial Study sections:

- Detail of proposed project plans (Chapter II, Project Description, of the EIR)
- Construction-period impacts related to aesthetics, transportation, noise, and air quality (Sections IV.B, Aesthetics; IV.D, Transportation and Circulation; IV.E, Noise; and IV.F, Air Quality, of the EIR and pages 80 to 97 of the Initial Study)
- Impacts related to wind and shadow patterns (Section IV.H, Wind and Shadow, of the EIR and pages 100 to 104 of the Initial Study)
- Emission of greenhouse gases (Section IV.G, Greenhouse Gas Emissions, of the EIR)
- Demolition of historically-significant structures (Section IV.C, Cultural Resources, of the EIR)
- Effects on visual character and scenic vistas (Section IV.B, Aesthetics, of the EIR and pages 53 to 60 of the Initial Study)
- Ability of proposed number of residential units to be accommodated on the Fire Station Relocation and Housing Project site (Chapter II, Project Description, of the EIR)
- Incorporation of art into the projects (Chapter II, Project Description, and Chapter VI, Other CEQA Considerations, of the EIR)
- Operation-period impacts related to traffic, noise, and air quality (Sections IV.D, Transportation and Circulation; IV.E, Noise; and IV.F, Air Quality, of the EIR and pages 80 to 97 of the Initial Study)
- Noise associated with emergency vehicle sirens and horns (Sections IV.D, Transportation and Circulation, and IV.E, Noise, of the EIR)

The Planning Department has considered the comments made by the public in preparation of the Draft EIR for the proposed projects. This Draft EIR will be circulated for public review and comment. During this period, written comments concerning the accuracy and adequacy of the Draft EIR will be accepted and a public hearing will be held before the Planning Commission to receive oral comments. After the close of the public comment period, written responses will be prepared to address substantive comments received on the environmental analysis, and any revisions to the Draft EIR will be identified. The Comments and Responses document and the Draft EIR together will constitute the

Final EIR. The Final EIR will be presented to the Planning Commission, at an advertised public hearing, for certification.

INTENDED USES OF THIS EIR

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

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

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

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

- *Information Document.* An EIR is an informational document which will inform public agency decision-makers and the public generally of the significant environmental effect(s) of a project, identify possible ways to minimize significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information which may be presented to the agency (*CEQA Guidelines* Section 15121(a)).
- *Degree of Specificity.* The degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR. An EIR on a development project will necessarily be more detailed in its discussion of specific effects of the project than will be an EIR on the adoption of a local general plan or comprehensive zoning ordinance because the effects of the construction can be predicted with greater accuracy (*CEQA Guidelines* Section 15146(a)).
- *Standards for Adequacy of an EIR.* An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information, which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure (*CEQA Guidelines* Section 15151).

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

ORGANIZATION OF THE DRAFT EIR

This Draft EIR has been organized as follows:

- *Summary:* This chapter summarizes the EIR by providing a concise overview of the projects, including associated approvals; the environmental impacts that would result from the projects; mitigation measures identified to reduce or eliminate these impacts; and project alternatives.
- *Chapter I – Introduction:* This chapter includes a discussion of the environmental review process; a summary of the comments received on the scope of the EIR; and the organization of the EIR.
- *Chapter II – Project Description:* This chapter discusses the background and objectives of the proposed projects; provides background data on the project locations; describes the operational and physical characteristics of the projects; and identifies project approvals.
- *Chapter III – Plans and Policies:* This chapter provides a summary of the plans, policies, and regulations of the City and County of San Francisco that are applicable to the proposed projects.
- *Chapter IV – Setting, Impacts and Mitigation Measures:* This chapter describes the projects' existing setting, environmental impacts, cumulative impacts, and mitigation measures. Each environmental topic is discussed in a separate section within this chapter, as follows:
  - Land Use
  - Aesthetics
  - Cultural Resources
  - Transportation and Circulation
  - Noise
  - Air Quality
  - Greenhouse Gas Emissions
  - Wind and Shadow
  - Public Services

- *Chapter V – Other CEQA Considerations:* This chapter describes growth inducement that would result from the proposed projects; summarizes the significant environmental effects that cannot be mitigated to a less-than-significant level; describes significant irreversible changes that would result if the projects are implemented; and lists any areas of controversy left to be resolved.
- *Chapter VI – Alternatives:* This chapter presents alternatives to the proposed projects, including the No Project Alternative (which relates to the SFMOMA Expansion and Fire Station Relocation and Housing Project); Preservation Alternative (which relates to the SFMOMA Expansion); Partial Fire Station Demolition Alternative (which relates to the SFMOMA Expansion); and Adaptive Reuse Alternative (which relates to the Fire Station Relocation and Housing Project), in addition to other alternatives considered but rejected as infeasible.
- *Chapter VII – Report Preparation and References:* This chapter identifies preparers of the EIR, the references used, and persons and organizations contacted during preparation of the EIR.
- *Appendices:* Appendices include the Notice of Preparation and Initial Study (Appendix A), the Historic Resource Evaluation Responses (Appendix B) related to potential historic structures on the project sites, and the Air Quality Technical Memorandum (Appendix C).

PUBLIC PARTICIPATION

The *CEQA Guidelines* and Chapter 31 of the San Francisco Municipal Code encourage public participation in the planning and environmental review processes. The City will provide opportunities for the public to present comments and concerns regarding the CEQA and planning processes. These opportunities will occur during the Draft EIR public review and comment period and public hearings before the San Francisco Planning Commission. Written public comments may be submitted to the Planning Department during the specified public review and comment period (indicated on the cover of this EIR), and oral comments may be presented at the Draft EIR public hearing before the Planning Commission.

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PROJECT DESCRIPTION

PROJECT LOCATIONS AND SITE CHARACTERISTICS

The proposed San Francisco Museum of Modern Art (SFMOMA) Expansion and Fire Station Relocation and Housing Project (projects) would be developed on two sites and would include: 1) an up to approximately 230,000-square-foot expansion of the existing SFMOMA, a private non-profit modern art museum located at 151 Third Street (between Mission and Howard Streets); 2) the demolition of two structures to the south of the existing museum (670 Howard Street and 676 Howard Street) and the vacation of Hunt Street to accommodate the expansion; and 3) the relocation of San Francisco Fire Department (SFFD) Station No. 1 (Fire Station No. 1) from 676 Howard Street to 935 Folsom Street. The existing building at 935 Folsom Street (formerly used for apparel manufacturing and as a commercial laundry) would be demolished. In addition to construction of a new fire station fronting Folsom Street, the 935 Folsom Street site would be subdivided and 13 multi-family residential units would be constructed on the southern portion of the site fronting Shipley Street (see Figure II-1, Project Site Location and Regional Vicinity and Figure II-2, Existing Conditions).

SFMOMA Expansion Site

The SFMOMA Expansion site is bordered by Third Street to the west; Minna Street to the north; the 147-151 Minna Street Parking Garage, Natoma Street, and office uses to the east; and the W Hotel and Howard Street to the south. Figures II-3, II-4, and II-5 show photographs of the SFMOMA Expansion site and its surroundings. The total footprint of the irregularly-shaped expansion site (including the original 151 Third Street footprint) is 74,355 square feet. The site is generally flat and is approximately 18 feet above San Francisco Datum (SF Datum).[1] The SFMOMA Expansion site includes the following four properties:

[1] Elevations reference San Francisco City datum (SF Datum).

- *151 Third Street, Assessor's Block 3722, Lot 78.* This 59,195-square-foot lot is currently developed with the SFMOMA building, a 5-story, 145-foot tall, 225,000 gross-square-foot art museum designed by Mario Botta and completed in 1995. The building contains galleries, a retail area, a café, a theater, an education center, public areas such as the lobby and event space, support spaces, art storage, loading and receiving areas, and basement parking. An approximately 17,250-square-foot sculpture garden and a coffee bar are located on the roof of an adjacent parking garage at 147-151 Minna Street and are accessed from the fifth floor of the 151 Third Street building. There are two undeveloped areas at the northeast and southeast corners of the museum site: the 5,800-square-foot Minna Street surface parking pad and the 8,500-square-foot Natoma Street surface parking pad, which are located over the museum basement area that fills the entire rectilinear museum lot. These areas were entitled as museum space at the time that the existing museum was designed and constructed, but remain undeveloped above grade level. A vehicular and pedestrian access easement encumbers a portion of the Natoma Street parking pad up to a minimum clear height of 14.5 feet above the parking pad grade.
- *670 Howard Street (also known as the Heald Building site and 15 Hunt Street), Block 3722 Lot 27.* This irregularly-shaped 7,260-square-foot lot is currently developed with a 4-story building and basement. The building, constructed of heavy timber with a masonry façade, was built in 1906 (after the earthquake), is owned by an affiliate of SFMOMA, and is currently used for museum support functions.
- *676 Howard Street, Block 3722 Lot 28*. This 4,400-square-foot lot is currently developed with Fire Station No. 1, an active SFFD fire station. The 2-story, 14,410-square-foot double-bay facility with a basement was constructed in 1958. As part of the project, the City would convey 676 Howard Street to SFMOMA in exchange for a portion of the 935 Folsom Street property and a newly-constructed fire station on that site.

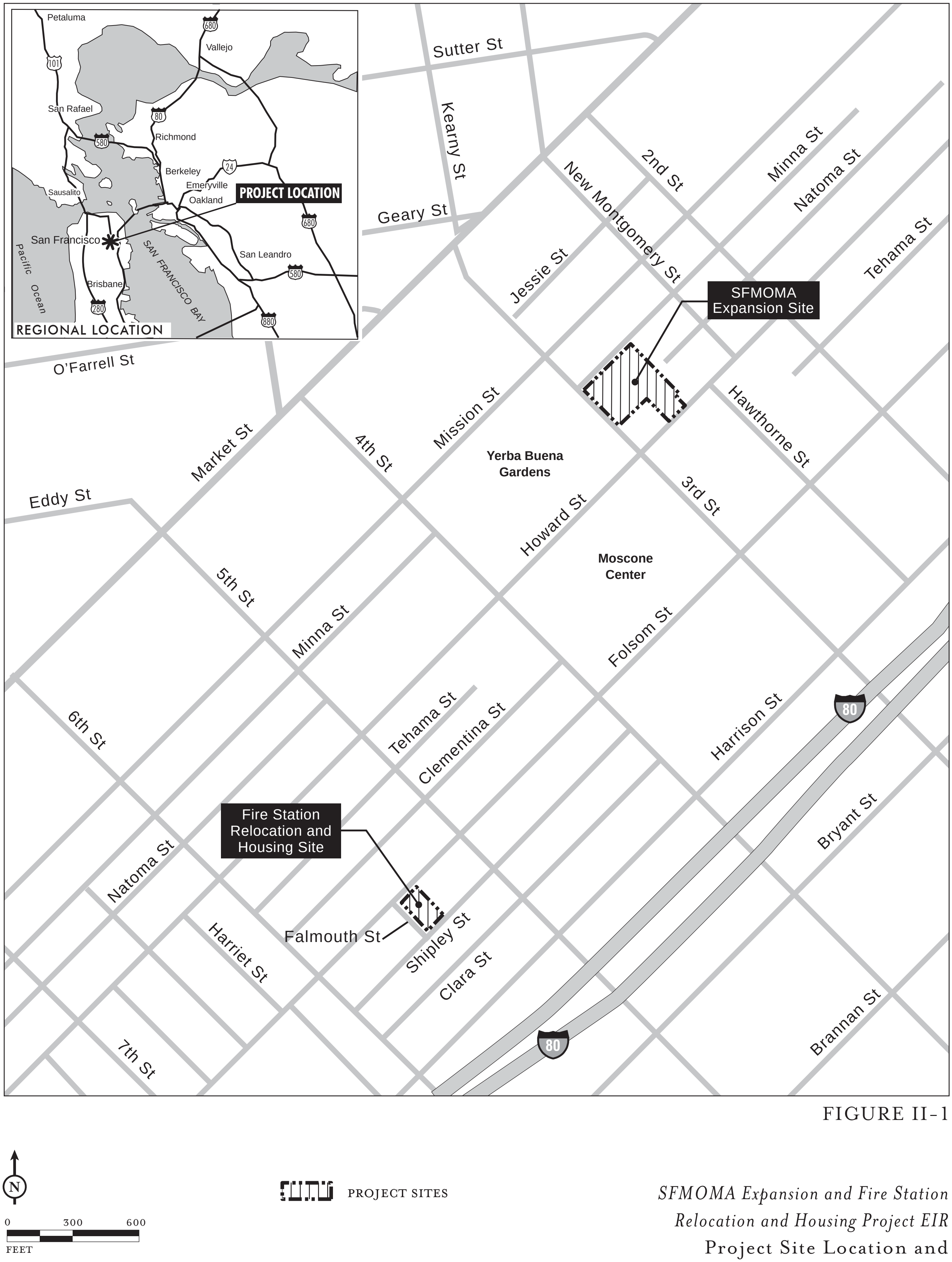


FIGURE II-1

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Project Site Location and Regional Vicinity

SOURCE: LSA ASSOCIATES, INC., 2010.

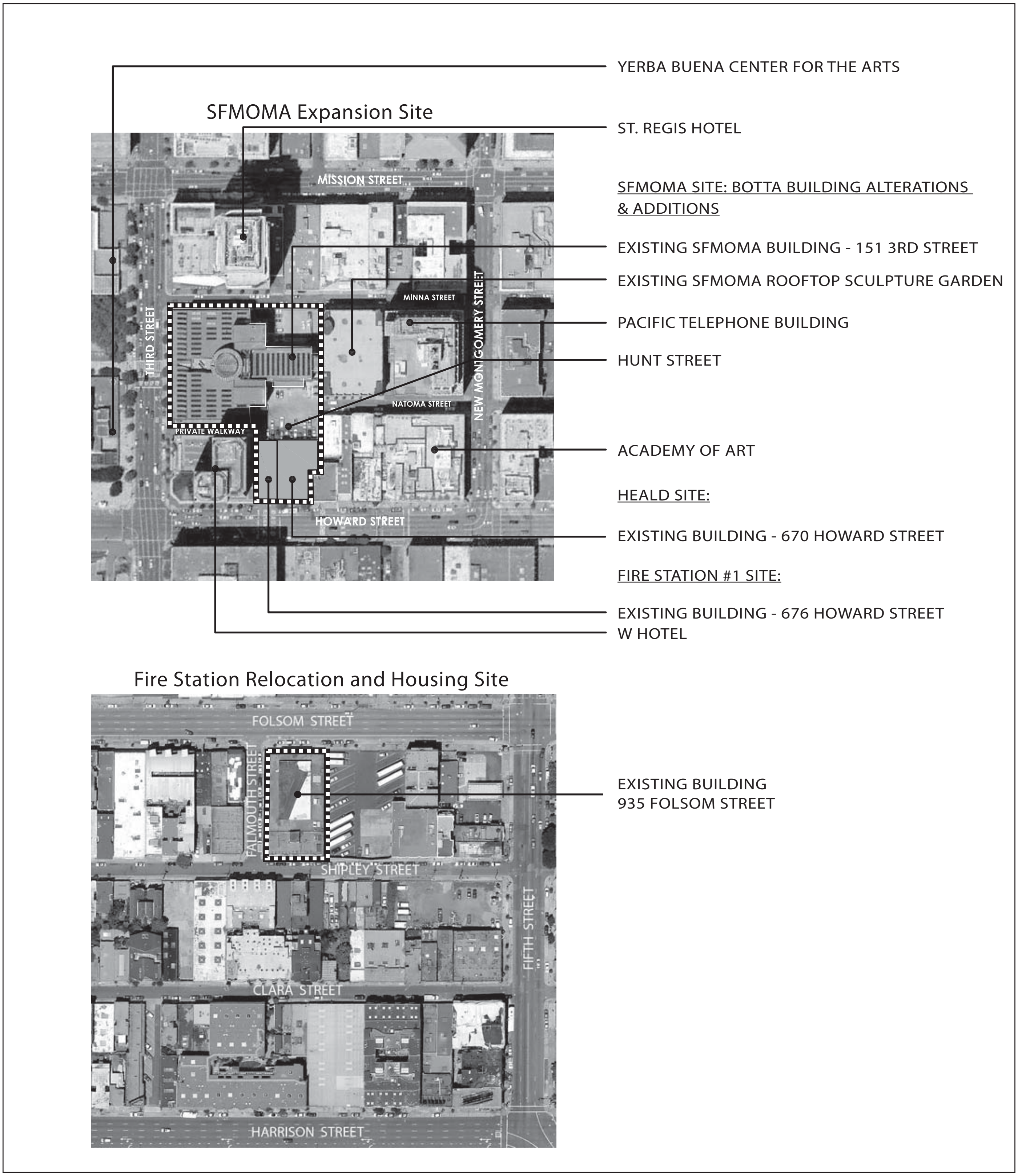


FIGURE II-2

N

NOT TO SCALE

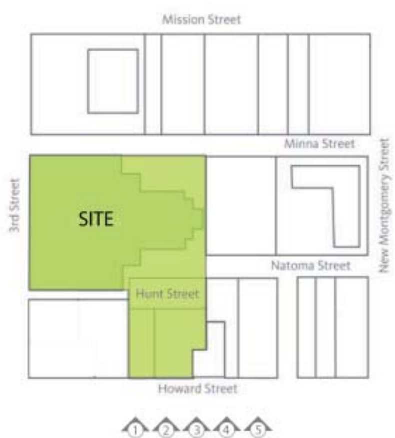
PROJECT SITES

SOURCES: TERRASERVER, 2009; SFMOMA, 2011.

1. EXISTING HOWARD STREET FACADE AT SFFD #1
(676 Howard Street)

2. EXISTING HOWARD STREET FACADE AT HEALD BUILDING
(670 Howard Street)


3. EXISTING HOWARD STREET FACADE*
* Not within project site; included to illustrate context of block




4. EXISTING HOWARD STREET FACADE*
* Not within project site; included to illustrate context of block

5. EXISTING HOWARD ST. FACADE*
* Not within project site; included to illustrate context of block

FIGURE II-3

SFMOMA Expansion and Fire Station Relocation and Housing Project Initial Study
Photographs of SFMOMA Expansion Site and Surroundings

SOURCES: SFMOMA; LSA ASSOCIATES, 2010.

6. THIRD STREET FACADE OF SFMOMA

7. "W" HOTEL WALKWAY FROM HUNT STREET

8. EXISTING HUNT STREET FACADE OF SFMOMA

9. EXISTING HUNT STREET FACADE OF SFMOMA

10. EXISTING HUNT STREET FACADE OF HEALD BUILDING

FIGURE II-4

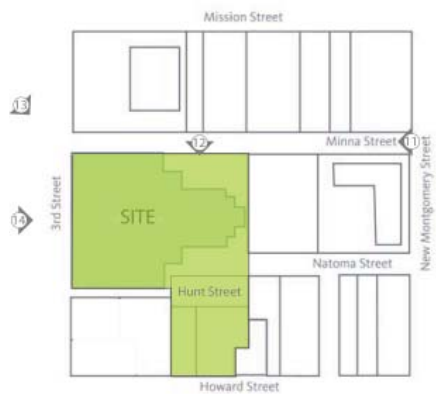
SFMOMA Expansion and Fire Station Relocation and Housing Project Initial Study
Photographs of SFMOMA Expansion Site and Surroundings

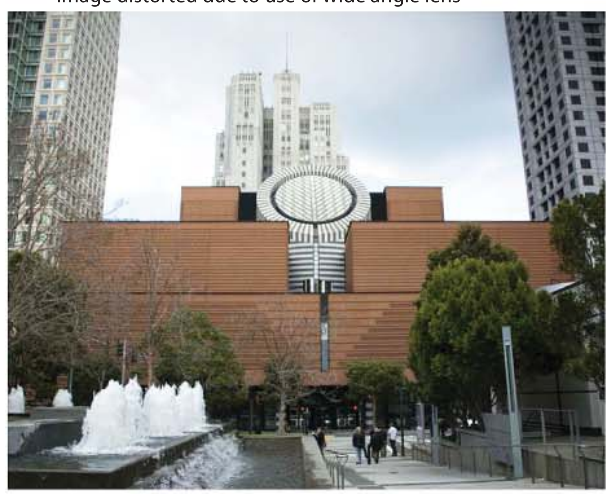
SOURCES: SFMOMA; LSA ASSOCIATES, 2010.

11. VIEW FROM MINNA STREET

12. EXISTING MINNA STREET FACADE OF SFMOMA*
* Image distorted due to use of wide angle lens

13. EXISTING THIRD STREET CORNER FACADE OF SFMOMA





14. EXISTING THIRD STREET FACADE OF SFMOMA

FIGURE II-5

SOURCES: SFMOMA; LSA ASSOCIATES, 2010.

SFMOMA Expansion and Fire Station Relocation and Housing Project Initial Study

Photographs of SFMOMA Expansion Site and Surroundings

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- *Hunt Street*. Hunt Street is an approximately 3,500-square-foot landlocked City-owned right-of-way that is located between 151 Third Street and 676 and 670 Howard Street. The dimensions of Hunt Street within the site are approximately 115 feet by 30 feet. A portion of Hunt Street extending west to Third Street was previously vacated by the City on August 6, 1979, and conveyed to the developer of the W Hotel, such that the right-of-way does not connect to any other public street (Board of Supervisors Resolution No. 755-79). The City would vacate the remaining 3,500-square-foot portion of Hunt Street and convey the land to SFMOMA, also in exchange for a portion of the 935 Folsom Street property and a newly constructed fire station on that site.

Fire Station Relocation and Housing Project Site

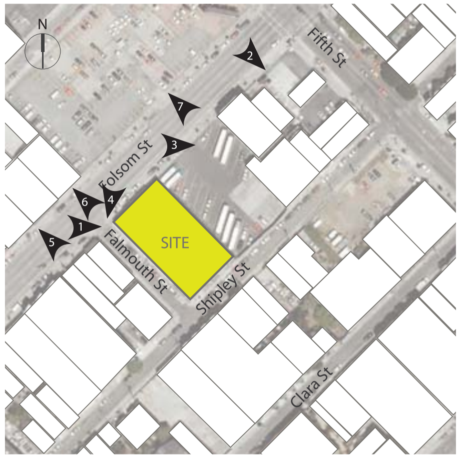
The Fire Station Relocation and Housing Project site is located at 935 Folsom Street at the corner of Falmouth Street between Fifth and Sixth Streets on Assessor's Block 3753, Lot 140. The 14,400-square-foot site is a through lot with frontages on both Folsom and Shipley Streets and is currently developed with a 1-story (with mezzanine), 25-foot tall, 18,210-gross-square-foot commercial building. The building was constructed in 1923 and is currently vacant, but was previously used as a commercial laundry facility and later as an apparel sewing factory. The site is generally flat and is approximately 4 feet above SF Datum. Figures II-6 and II-7 show photographs of the Fire Station Relocation and Housing Project site and its surroundings.

PROJECT SPONSOR'S OBJECTIVES

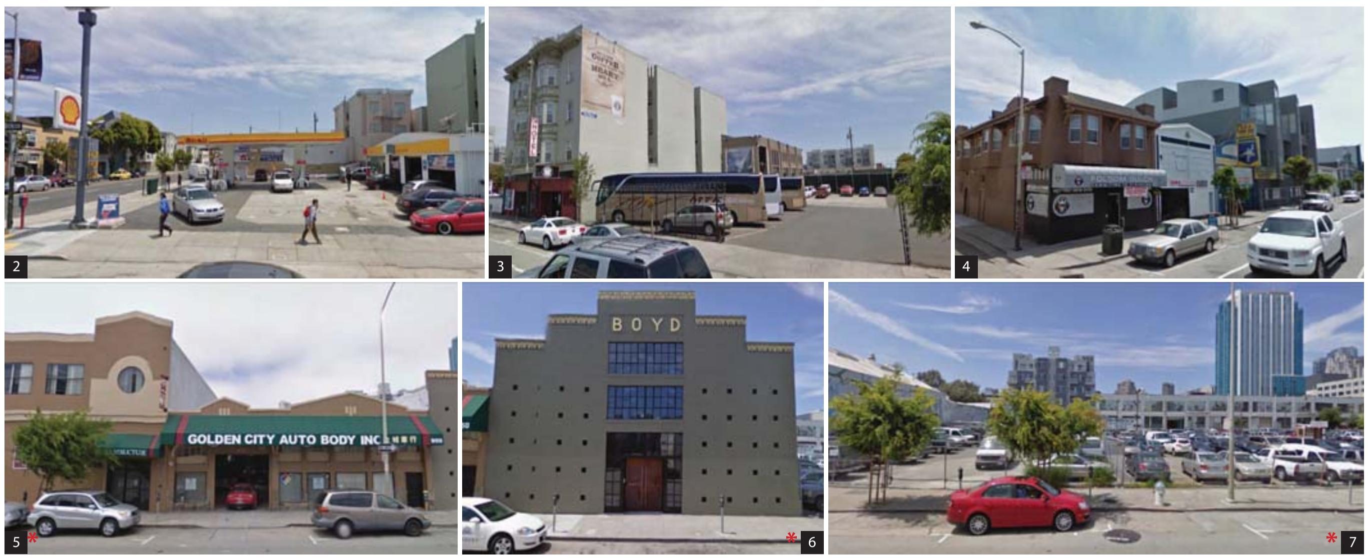
According to the project sponsor SFMOMA, the proposed expansion is intended to provide a substantial increase in gallery space in order to exhibit the museum's growing collections (which currently totals approximately 26,000 pieces), the ongoing program of special exhibitions, and the Doris and Donald Fisher Collection (pursuant to an agreement between SFMOMA and the Fisher family). In addition, the SFMOMA Expansion would allow SFMOMA to consolidate and enhance its administrative, support, and visitor spaces contiguous to the existing museum building at 151 Third Street. Currently, the museum contains approximately 55,400 square feet of gallery space, 67,000 square feet of public visitor space, and 130,000 square feet of support space, plus additional administrative and support space off-site in leased space at 667 Mission Street and at Fort Mason.

The objectives of SFMOMA relative to the SFMOMA Expansion are to:

1. Provide up to 130,000 square feet of additional indoor gallery space to enable the museum to better exhibit its permanent collection, provide galleries to display the Doris and Donald Fisher Collection, increase space for special exhibitions, and attract donations to the museum of additional works of modern art and modern art collections.
2. Provide the additional gallery space immediately contiguous to the museum's existing galleries to enhance the visitor experience, enable efficient museum operations, and provide easy access for museum staff to the galleries.
3. Provide new galleries in column-free spaces in a range of sizes to maximize the flexibility of the galleries and provide appropriately-sized galleries to display the larger sculptures and paintings in the SFMOMA permanent collection and the Fisher Collection, including a publicly-accessible ground floor lobby or gallery space to exhibit "Sequence," a Richard Serra sculpture, which measures approximately 65 by 41 feet and rises to height of approximately 13 feet.
4. Provide galleries no higher than the seventh floor of the expanded museum, to optimize the visitor experience.
5. Consolidate on-site and enlarge the museum's administrative and support functions, to provide up to 220,000 square feet of administrative and support space on-site, including space for art conservation, curatorial staff, art storage, library, and marketing and administrative operations.



EXISTING FACADE OF THE FIRE STATION RELOCATION AND HOUSING PROJECT SITE, 935 FOLSOM STREET



EXISTING FOLSOM STREET BLOCK FACE

* NOT WITHIN PROJECT SITE; INCLUDED TO ILLUSTRATE CONTEXT OF BLOCK

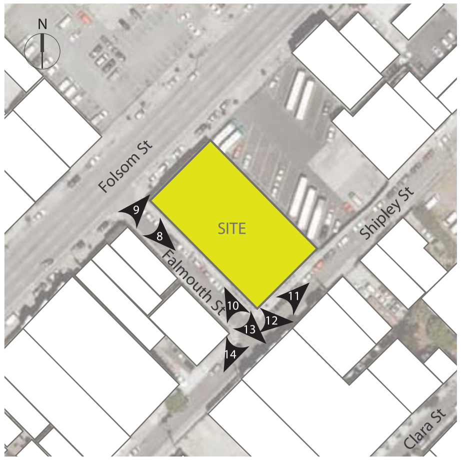
900 FOLSOM STREET, NOT WITHIN PROJECT SITE

FIGURE II-6

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Photographs of Fire Station Relocation and Housing Project Site and Surroundings

SOURCES: GENSLER, 2010.



SIDE FACADE OF THE SITE FROM FALMOUTH STREET

EXISTING SHIPLEY STREET BLOCK FACE

*NOT WITHIN PROJECT SITE; INCLUDED TO ILLUSTRATE CONTEXT OF BLOCK

FIGURE II-7

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Photographs of Fire Station Relocation and Housing Project Site and Surroundings

SOURCES: GENSLER, 2010.

6. Improve and enlarge the other visitor-serving facilities of SFMOMA.

7. Continue to provide convenient access from within the museum building to the existing sculpture garden on the roof of the 147-151 Minna Street parking garage.

8. Preserve the integrity of the Mario Botta-designed 151 Third Street Building when viewed from Yerba Buena Gardens and Third Street by providing the additions at the rear of the museum and on contiguous sites.

9. Provide pedestrian access to the museum from all four surrounding streets (Third, Minna, Natoma, and Howard Streets).

Fulfillment of the project objectives relative to the SFMOMA Expansion necessitated exploring the relocation of San Francisco Fire Station No. 1 from 676 Howard Street to another nearby location so that the 676 Howard Street site could be incorporated into the SFMOMA Expansion site. In consultation with the SFFD, SFMOMA acquired the site at 935 Folsom Street to accommodate the potential relocation of Fire Station No. 1.

The project objectives of SFMOMA relative to the Fire Station Relocation and Housing Project are to:

1. Provide the SFFD with a replacement station for Fire Station No. 1, meeting the Department's criteria set forth below, at no cost to the Fire Department and in a cost-effective manner for SFMOMA.

2. Defray a portion of the costs incurred in acquiring the 935 Folsom Street site by maximizing the development potential (within existing zoning constraints) of the Shipley Street frontage of the 935 Folsom Street site that is not needed for the relocated fire station.

The SFFD's criteria for relocation of Fire Station No. 1 are:

1. Locate a new fire station to conveniently serve Fire Station No. 1's service area.

2. Locate the new fire station mid-block on an east-west thoroughfare between Mission and Harrison Streets to enhance ease of egress and ingress of emergency vehicles and to allow

traffic signal preemption in order to minimize the need to sound sirens and air horns on vehicles exiting the station.

3. Replace the seismically vulnerable existing Fire Station No. 1 with a structurally sound fire station meeting life safety standards applicable to an "essential facility."

4. Enlarge Fire Station No. 1 from two vehicles bays to three vehicle bays and locate all essential firefighting and emergency services equipment on the ground floor adjacent to the vehicle bays.

5. Provide adequate sleeping, living, cooking, fitness, locker, and bathroom facilities for both male and female firefighters.

6. Provide off-street parking for approximately 12 to 15 firefighters at one time.

PROPOSED PROJECTS

SFMOMA Expansion Project

SFMOMA has expanded its collection and programming since the 151 Third Street building opened in 1995. In response, the museum seeks additional space for galleries and public spaces, enhanced and expanded curatorial, conservation, and library programs, and consolidation of its support functions. Approximately 60 percent of the museum's support functions are currently housed off-site across Minna Street in 20,000 square feet of leased office space at 667 Mission Street (also known as the Minna Annex) and at Fort Mason (where space is used by the museum for rental art and storage functions). In February 2010, SFMOMA and the Doris and Donald Fisher Foundation entered into an agreement to present the Fisher Collection, containing approximately 1,100 pieces of contemporary art, at SFMOMA. This agreement, along with other advances in the SFMOMA collection, has increased the demand for expansion of SFMOMA's galleries, as well as its public and support spaces.

The 151 Third Street property and the northern half of Hunt Street are located within a 500-I height and bulk district, which permits a building height of up to 500 feet and, above 150 feet in height, a maximum length dimension of 170 feet and a maximum diagonal dimension of 200 feet, unless an exception is granted by the Planning Commission. SFMOMA is also subject to a Development and

Disposition Agreement (DDA) with the San Francisco Redevelopment Agency limiting the height of a structure on the 151 Third Street property to approximately 147 feet, unless the DDA is amended. (See Chapter III, Plans and Policies for additional detail about the DDA.)

670 Howard, 676 Howard Street, and the southern half of Hunt Street are located in a 320-I height and bulk district, which permits a building height of up to 320 feet with the same bulk limits that apply to 151 Third Street. Figure II-8 is an axonometric diagram of the maximum above-ground zoning envelope for the expansion, assuming a building constructed to the full allowable building height with no exception to the I bulk controls and no amendments to the DDA.

The design for the project is intended to meet the additional space needs of the museum while responding to the irregular shape of the site and the existing Botta-designed structure. The design analyzed in this EIR is currently in preliminary form, sufficient for purposes of environmental review, and will be refined but remain generally consistent with the design discussed here.

The expanded portion of the museum would extend along a north/south axis from Minna Street to Howard Street (a length of 347 feet), and would rise to a maximum height of approximately 200 feet (plus rooftop mechanical, elevator, and stair penthouses up to 20 feet high), requiring an amendment to the DDA. The expanded portion of the museum would thus function as a backdrop to the existing 145-foot-tall museum.

The SFMOMA Expansion would also extend the existing 151 Third Street basement area under Hunt Street, the Heald Building site, and the Fire Station No. 1 site. Excavation to approximately 19 to 20 feet below surface grade would be required for the construction of the expansion project's mat foundation and basement areas (basements currently exist at 670 Howard Street and 676 Howard Street, but would require additional excavation to meet the level of the museum basement).

The total square footage of new construction that could occur within the maximum zoning envelope (not taking into account maximum permitted bulk dimensions) is approximately 340,000 square feet. However, SFMOMA proposes approximately 230,000 square feet of new construction (see Table II-1), such that the project would occupy less than 70 percent of the potential building envelope shown graphically in Figure II-8. Therefore, the proposed structure would not occupy either the full height limit permitted at the site (320 feet) under the Planning Code but would exceed the height currently permitted on the 151 Third Street site by the DDA. The design architect for the SFMOMA Expansion project is Snøhetta of New York City and Oslo, Norway. Please refer to Figures II-9, II-10, II-11, and II-12 for preliminary floor plans of the SFMOMA Expansion. Figures II-13, II-14, and II-15 show the conceptual elevations of the project along Third, Minna, and Howard Streets.

Uses. The SFMOMA Expansion would create up to approximately 230,000 square feet of new space. Table II-1 provides a summary of the uses associated with the proposed SFMOMA Expansion and the approximate square footage of these uses.

This SFMOMA Expansion would increase SFMOMA's gallery space by up to approximately 130,000 square feet (comprising 13,500 square feet of renovated space in the existing museum and 116,500 square feet of new development; see Table II-1), including galleries to house the Fisher Collection, and would increase support space to allow the museum to consolidate its back-of-house functions that currently are housed partly in the museum and partly at a nearby off-site location at 673 Mission Street (the Minna Annex).

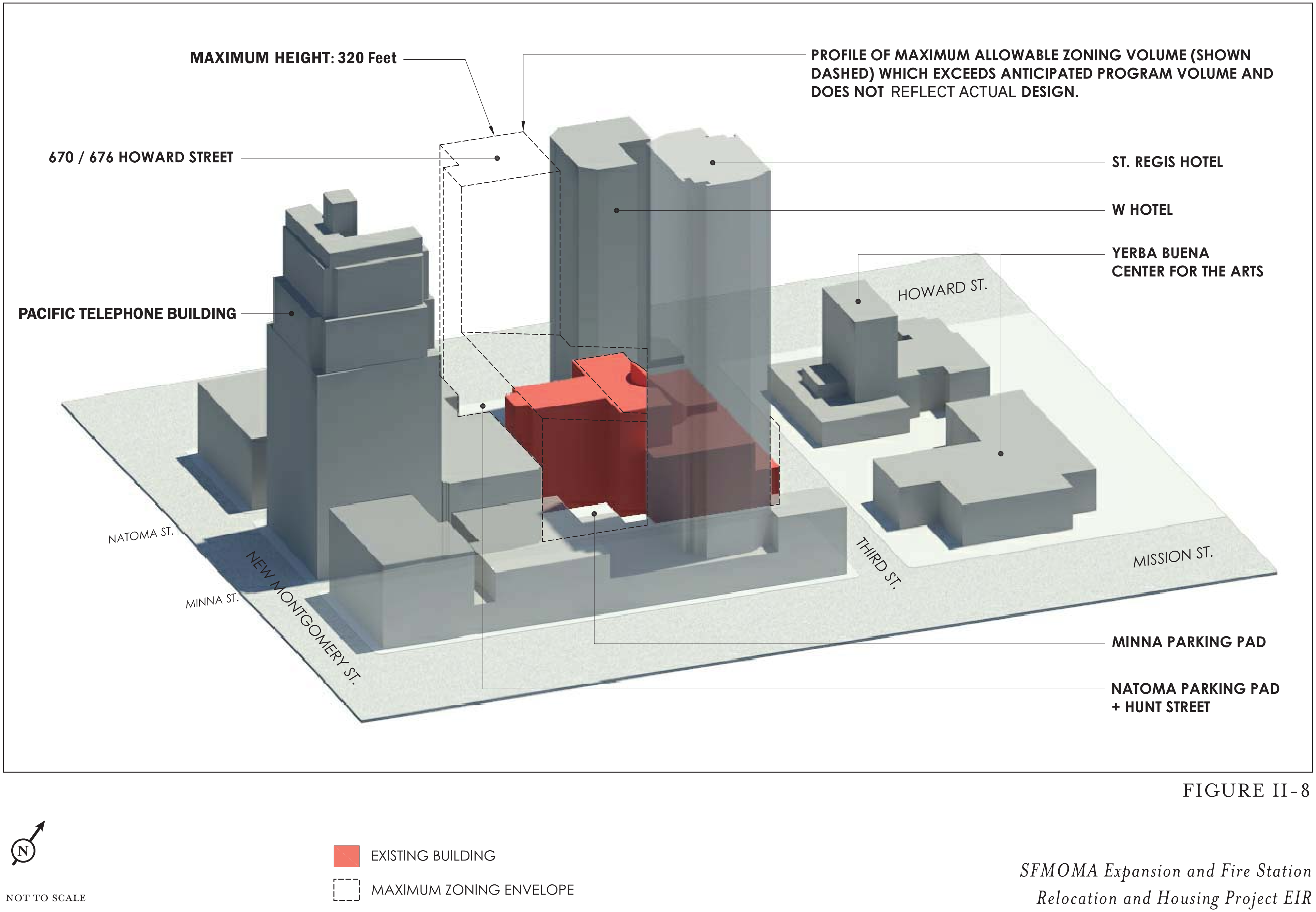


FIGURE II-8

SOURCES: SFMOMA, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Zoning Diagram – Maximum Zoning Envelope

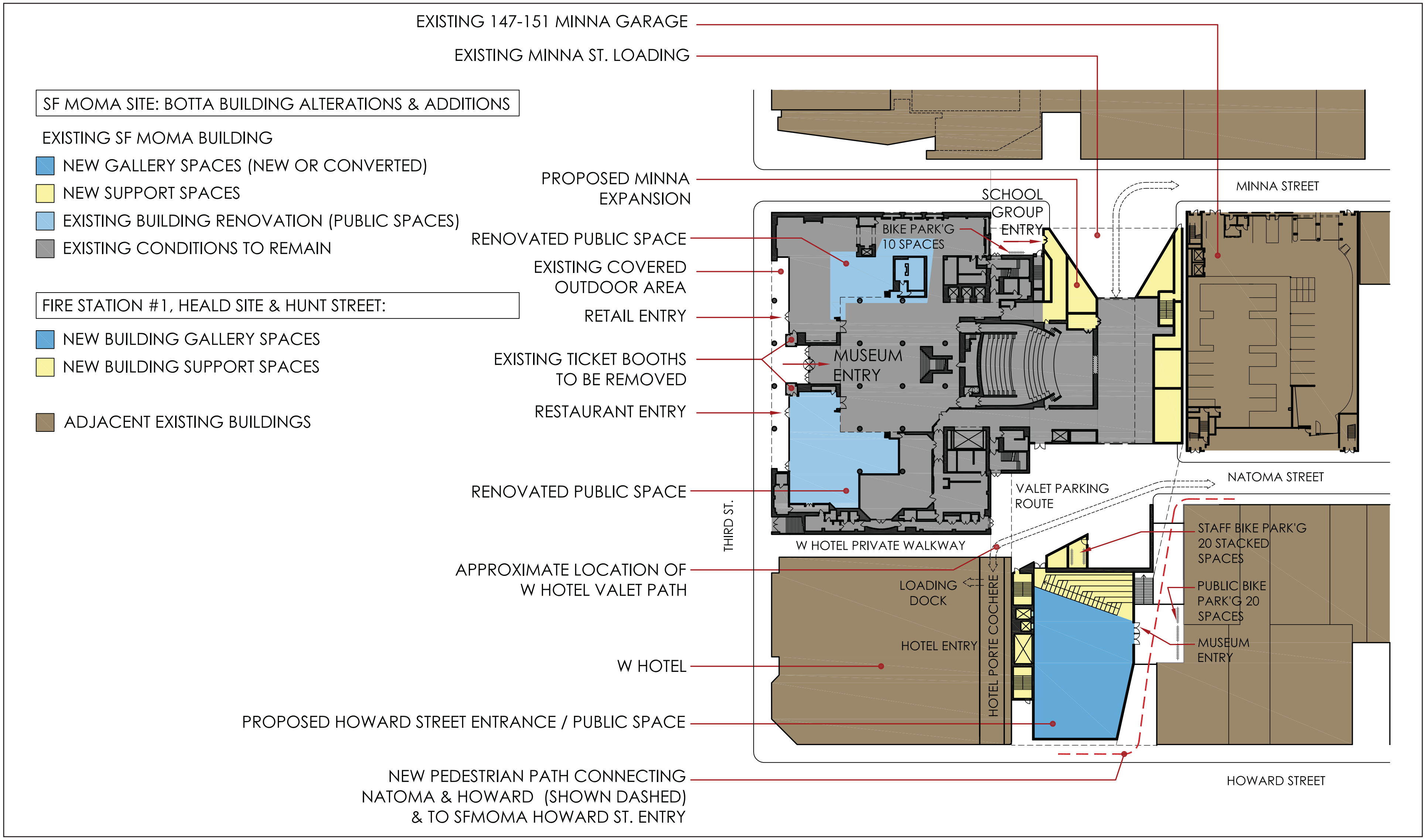


FIGURE II-9

SOURCE: SFMOMA, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Proposed Ground Floor Plan

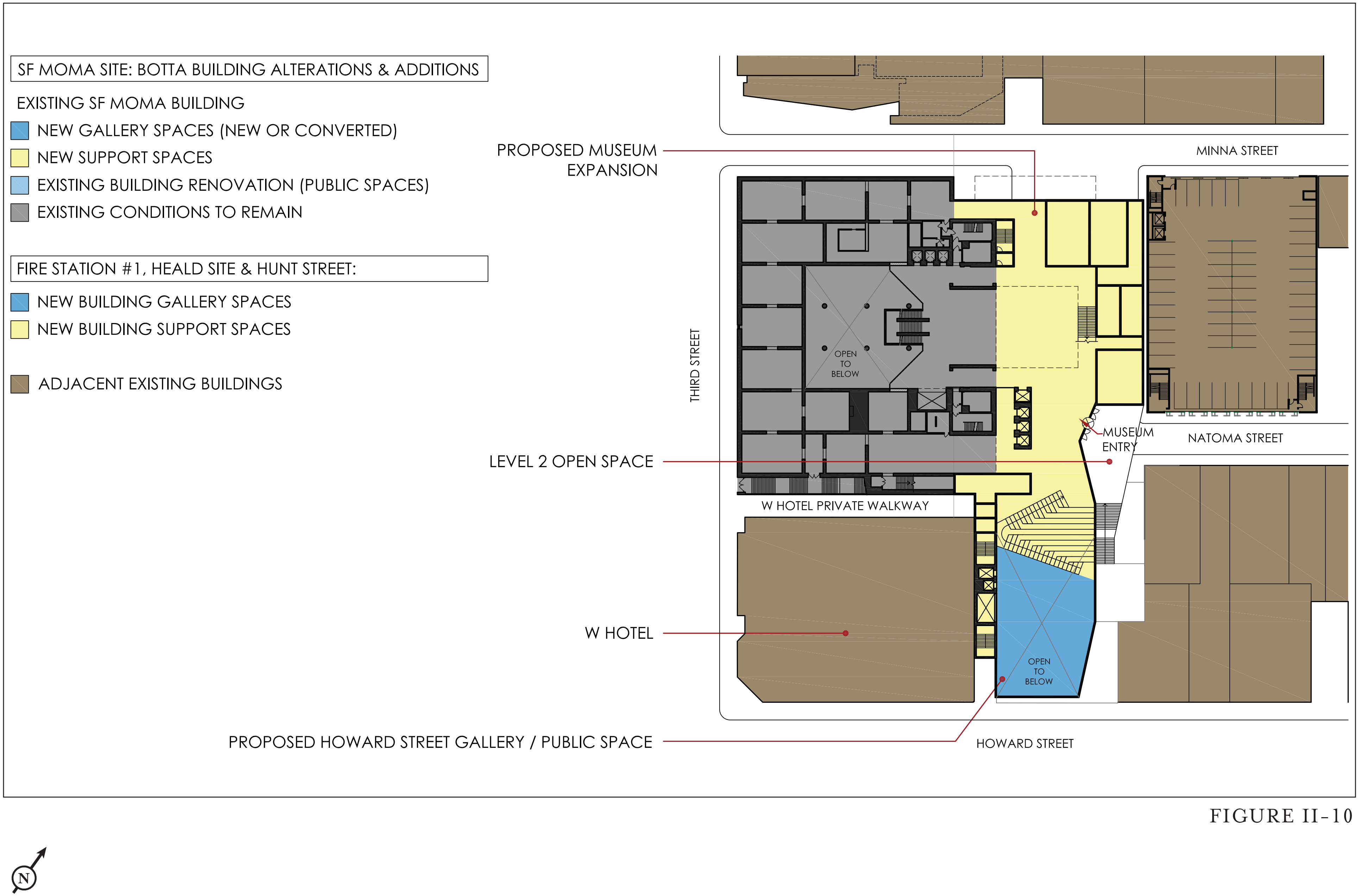


FIGURE II-10

SOURCE: SNØHETTA, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Proposed Second Floor Plan

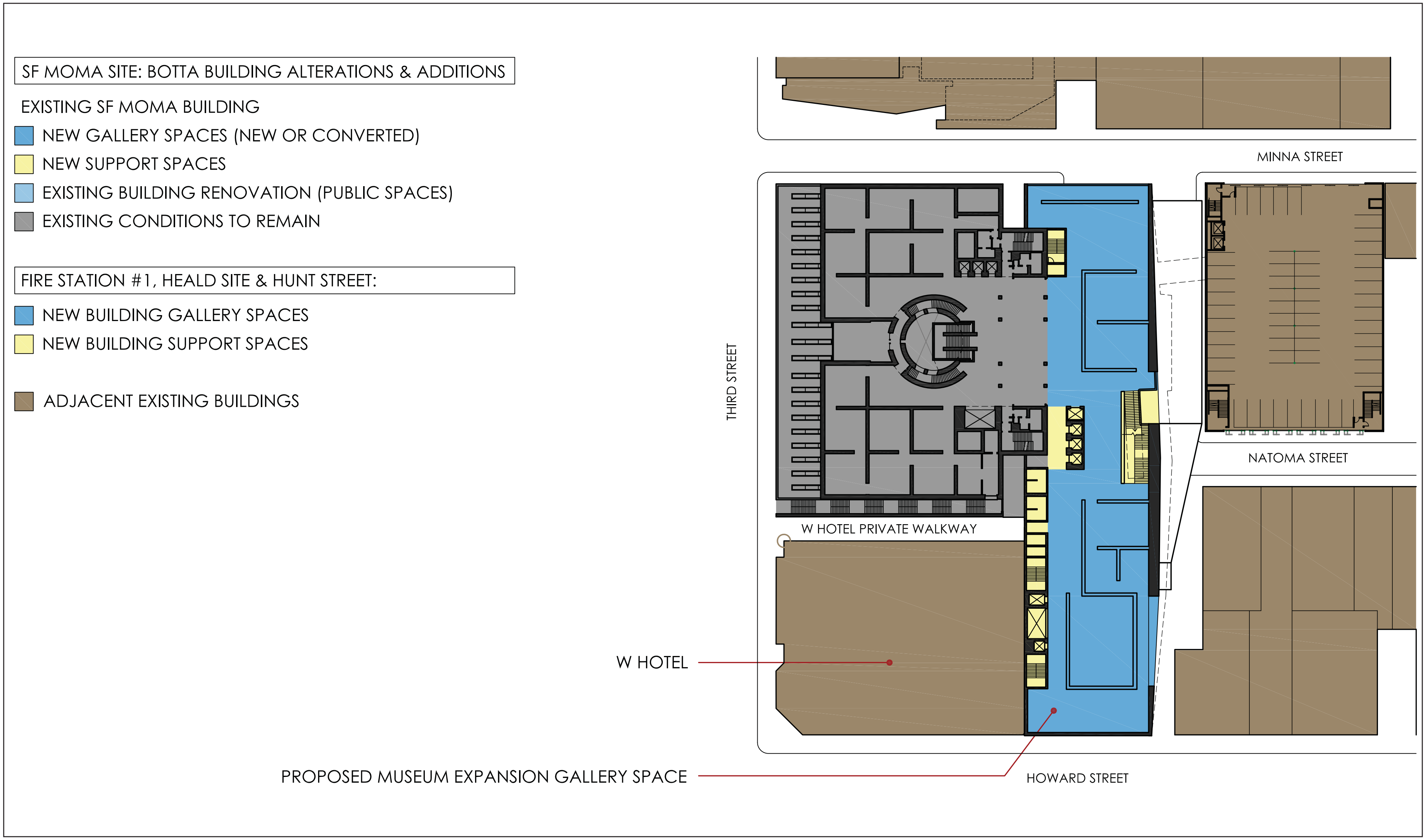


FIGURE II-11

NOT TO SCALE

SOURCE: SNØHETTA, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Typical Conceptual Gallery Floor Plan

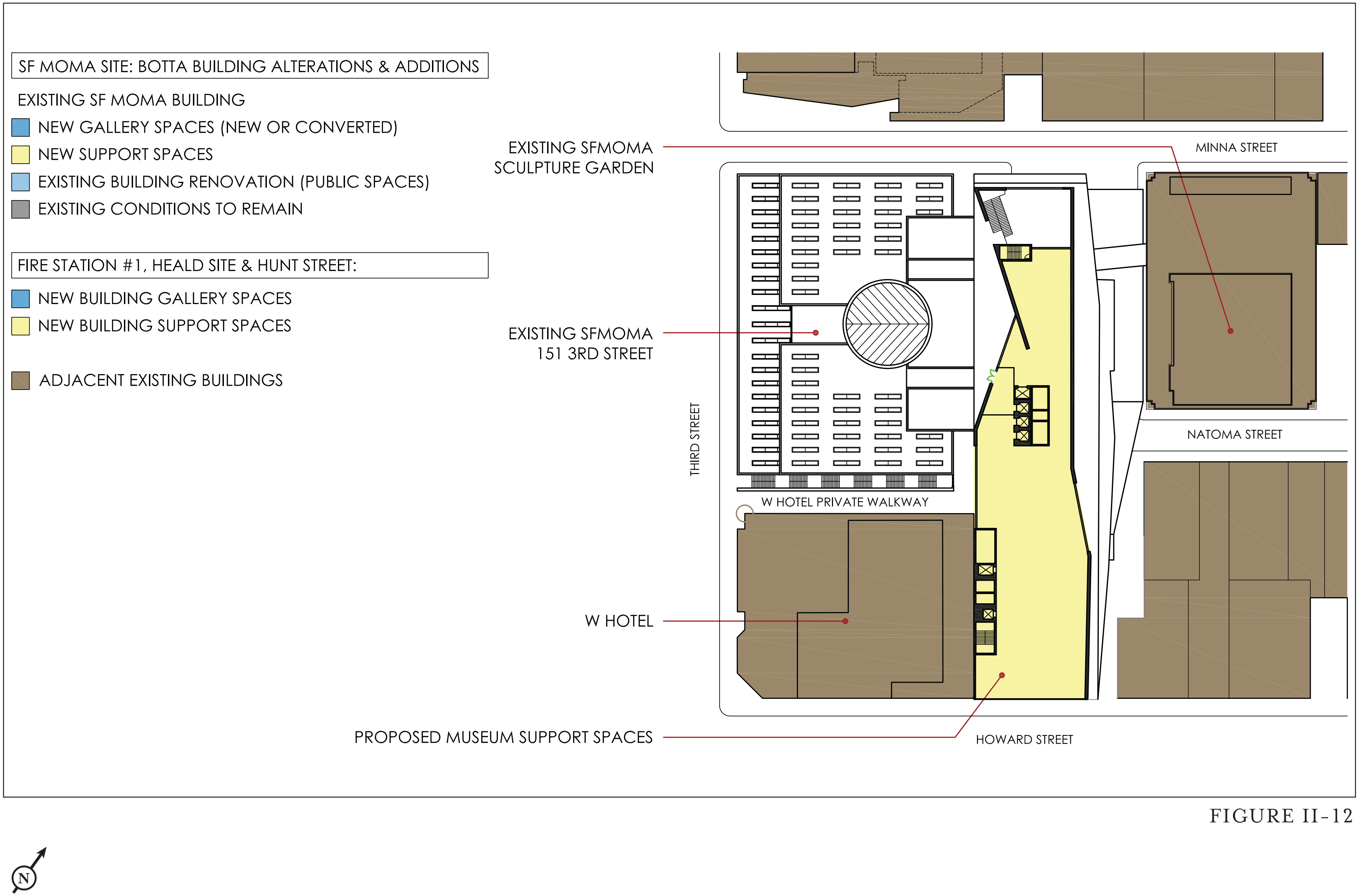


FIGURE II-12

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Typical Conceptual Support Level Floor Plan

SOURCE: SNØHETTA, 2011.

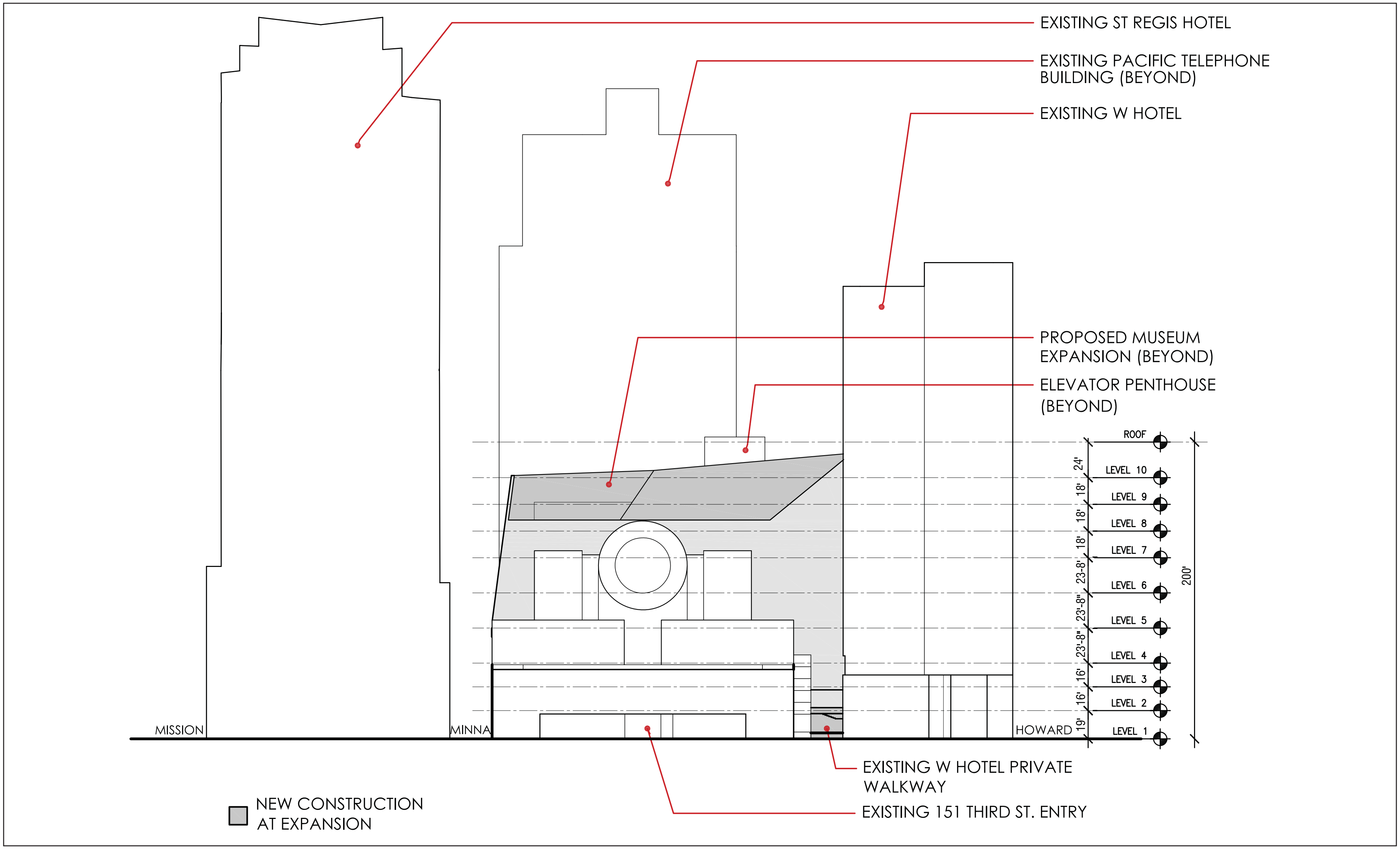


FIGURE II-13

NOT TO SCALE

SOURCE: SNØHETTA, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Conceptual Third Street Elevation

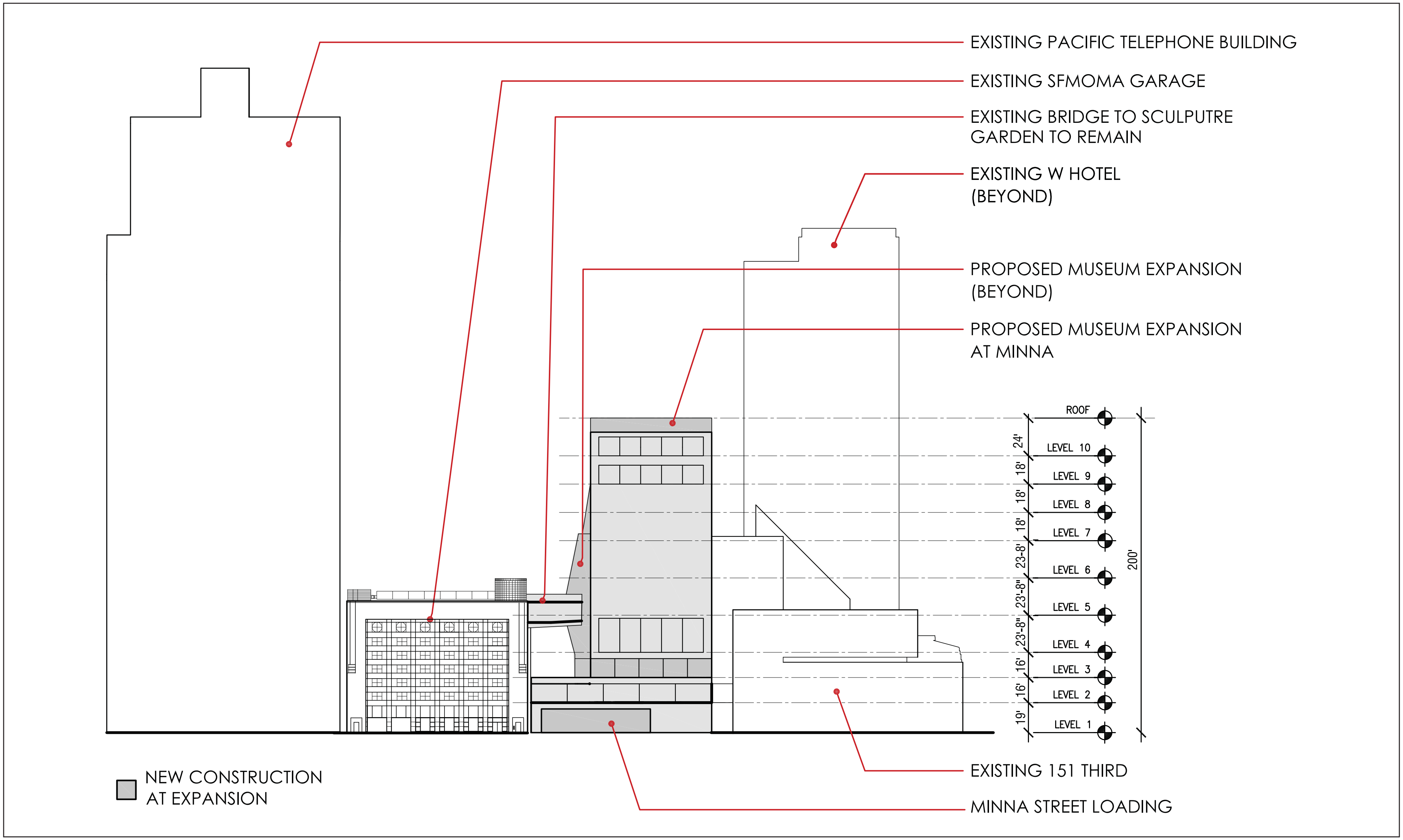


FIGURE II-14

NOT TO SCALE

SOURCE: SNØHETTA, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Conceptual Minna Street Elevation

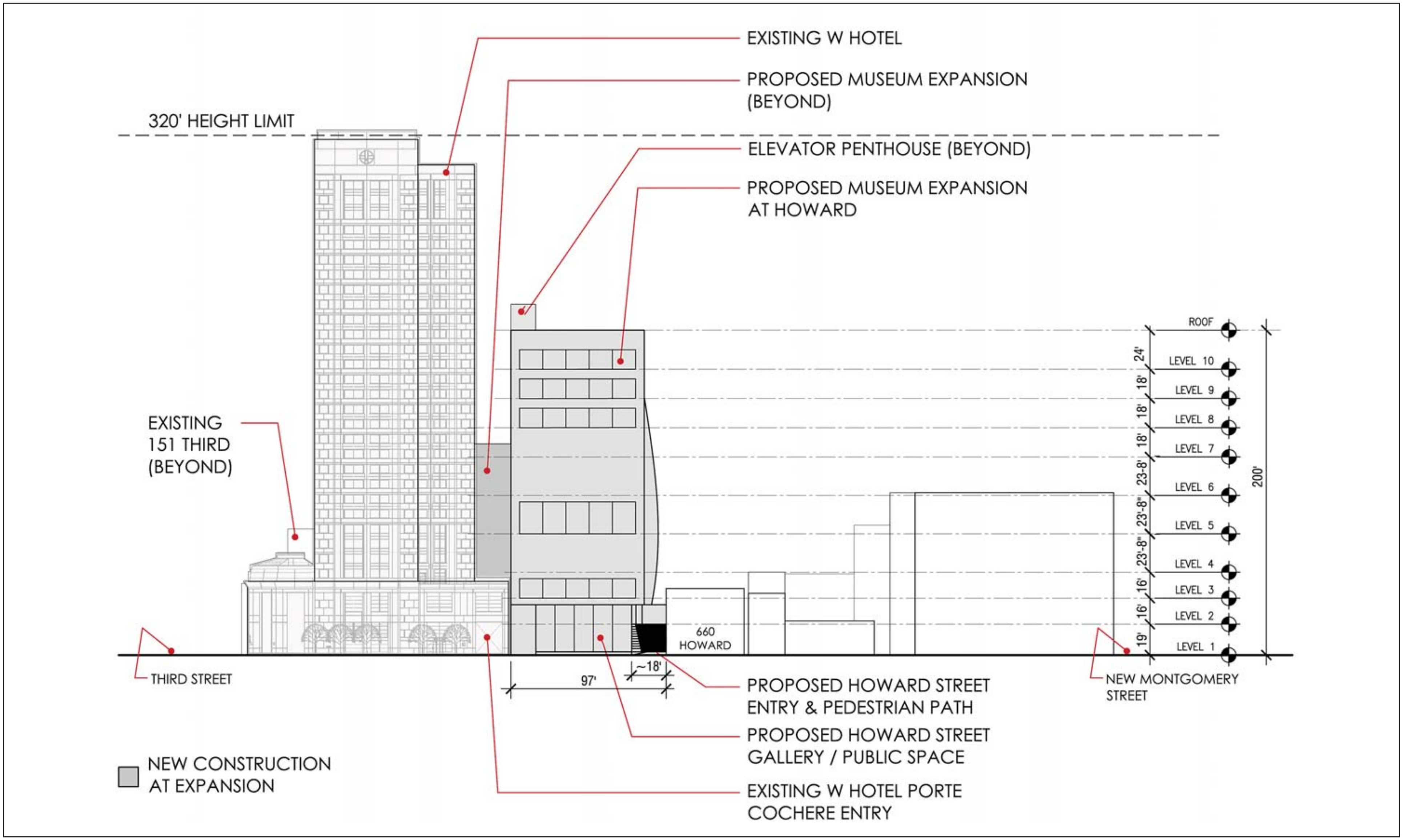


FIGURE II-15

NOT TO SCALE

SOURCE: SNØHETTA, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Conceptual Howard Street Elevation

Table II-1: Area Calculations

	Existing SFMOMA *Areas Unchanged* *Area (Gross S.F.)*			**SFMOMA Renovation and Replacement** *Within Existing Footprint* *Area (Gross S.F.)*			**SFMOMA New Construction** *Minna & Natoma Pads,* *Heald + Fire Station #1 Site* *Area (Gross S.F.)*		
	PUBLIC	GALLERY	SUPPORT	PUBLIC	GALLERY	SUPPORT	PUBLIC	GALLERY	SUPPORT
SUB TOTALS	**50,505**	**41,980**	**94,765**	**6,500**	**13,500**	**35,000**	**27,900**	**116,250**	**85,850**
TOTAL AREA: (S.F.)			**187,250**			**55,000**			**230,000**
	Total Area By Program Type: (Gross S.F.)								
	Public								**84,905**
	Gallery								**171,730**
	Support								**215,615**
Note: Existing gross area of SFMOMA = 242,250 S.F. (includes the SFMOMA sculpture garden atop the adjacent parking garage)	**Grand Total Area: (Gross S.F.)**								
	New Construction								230,000
	Existing Building (Including Interior Renovations)								242,250
	GRAND TOTAL (Existing Building + New Construction)								**472,250**

Source: SFMOMA, 2011.

As described in more detail below (under "Access, Circulation and Parking"), a new entryway/lobby would be established along an up to 18-foot-wide promenade connecting Howard and Natoma Streets. That lobby, along with the existing lobby adjacent to Third Street, would be open to the public, and access to the lobbies would not require the payment of a museum admission fee. The Howard Street frontage of the building would be at least partially transparent, allowing interior art to be visible from the street. From the entries to the museum along Third and Howard Streets, visitors would move up to an "art court" – a new lobby area on the second floor where ticketing and admission to the galleries would occur. The ticketing lobby would also be accessible via the outdoor promenade connecting Natoma and Howard Streets.

The preliminary design for the museum includes 10 levels and a basement. The basement would include workshops, storage, library, and other support spaces and would not be accessible to the public. Level one would continue to contain the museum atrium, store, auditorium, loading areas, an expanded restaurant, and gallery space.

Level two would function as the primary entry into the main galleries, with an expansive "art court" encompassing much of the eastern portion of level two. The level would also contain gallery space, a small retail space adjoining the "art court," and support space. As noted above, ticketing would occur primarily on level two.

Levels three and four would contain primarily gallery space and a lounge with seating. The walkway to the existing sculpture garden, along with the existing adjoining café, would remain on level five. Gallery and support space would also be located on level five. Levels six and seven would contain a mix of gallery, support, and art conservation space. An outdoor sculpture garden is also planned for level seven. Levels eight through ten would contain administrative and support spaces, in addition to a boardroom that would not be publicly-accessible. Level ten would also contain a staff terrace that could be available to the public during special events.

Along with the expansion of uses noted above, some areas of the existing SFMOMA building may be reprogrammed as follows:

- approximately 13,500 square feet of existing support space on the third and fourth floors would be converted to gallery space and the support space moved to the new eighth and ninth floors of the expansion;
- approximately 30,000 square feet of existing basement support and staff garage space would be renovated to serve as support space, including art storage; and
- the café would be converted into a full-service restaurant open to the public (admission to the museum galleries would not be required) and would be expanded from approximately 4,000 square feet to approximately 5,750 square feet.

The remaining space within the existing building, including the retail area and galleries, would not be altered, although some of the public areas may be reprogrammed to other public uses. The 18-space staff parking area in the basement of 151 Third Street would be eliminated and converted to art storage or other back-of-house functions. The project includes new mechanical systems along with upgrades to existing building systems.

Employees and Visitors. Current and expected future employment at SFMOMA is summarized in Table II-2. According to SFMOMA, the museum currently employs approximately 213 full-time-equivalent employees (FTEs). In addition, SFMOMA uses the services of docents, volunteers, interns, on-site consultants and contractors, and security personnel totaling the equivalent of an additional 170 FTEs. Taking into account all types of employees, there are currently 383 FTEs employed at SFMOMA. Upon completion of the expansion, SFMOMA anticipates an approximately 23 percent increase in FTE employees, to a total of 470 FTE employees (including 267 SFMOMA employees and 203 FTE docents, volunteers, interns, on-site consultants and contractors, and security personnel). Thus, with implementation of the SFMOMA Expansion, overall employment at SFMOMA would increase by 87 FTEs.

Table II-2: Existing and Projected Full Time Equivalent (FTE) Employment at SFMOMA

Type of Worker	Current	Projected	Number Increase (Percent Increase)
Employees	213	267	54 (25%)
Volunteers	83	103	20 (24%)
Contractors	37	43	6 (16%)
Security	50	57	7 (14%)
TOTAL	**383**	**470**	**87 (23%)**

Source: Personal communication between Sanchie T. Fernandez, Director of Human Resources, SFMOMA, and Greg Johnson, SFMOMA Expansion Project Director, July 1, 2010. This document is available for review at the Planning Department in Case File No. 2010.0275E.

Annual general admissions visitors to the museum averaged 666,300 between 2008 and 2010. In addition to general admissions, approximately 45,000 persons a year visit the museum as part of school programs, daytime programs, corporate rental events, and evening public and member events. The expanded gallery spaces that would be developed as part of the SFMOMA Expansion are likely to increase attendance. It is anticipated that after the visitorship stabilizes following opening of the project to the public, annual visitor numbers would increase by approximately 20 percent.[2] To ensure a conservative evaluation of potential environmental impacts, the analysis in this EIR assumes that visitor attendance would increase by 30 percent over the average annual visitorship between 2008 and 2010.

Access, Circulation and Parking. Proposed pedestrian access through the SFMOMA Expansion is shown on Figure II-16. Primary pedestrian access to SFMOMA would remain on Third Street, but an

[2] *SFMOMA Visitor Study*, Bain and Company, 2010. Relevant portions of this study are included in Appendix G of the Transportation Impact Study, available at the Planning Department in Case File No. 2010.0275E.

additional point of pedestrian access would be developed on a new up to 18-foot-wide promenade along the eastern boundary of the site. The promenade would connect Natoma and Howard Streets, and would adjoin a public plaza adjacent to the museum. A wide staircase would ascend from this plaza to the “art court” and lobby area on the second floor. The frontage of the building on Howard Street would be designed to allow for the viewing of larger works of art from the street. The existing atrium (accessed from Third Street) would be modified to improve circulation and access to visitor amenities. From the entries to the museum along Third and Howard Streets, visitors would move up to an “art court” and lobby area on the second floor where ticketing and admission to the galleries would occur. The existing Minna Street entryway would be modified and designated as an entry point for special groups, such as school tours.

A portion of the expansion above the Natoma Street parking pad would be elevated 14.5 feet above street level to provide unimpeded vehicular access from Natoma Street, beneath the structure, for the W Hotel loading access and for parking attendants to move vehicles between the W Hotel porte-cochere on Howard Street and the 147-151 Minna Street parking garage (by accessing the garage’s Natoma Street entry), pursuant to an existing easement. A set-back would also be established adjacent to 161-165 Natoma Street in order to maintain egress to Natoma Street via existing fire escapes. Figure II-17 shows the proposed public loading diagram for the expanded portion of the museum. Art loading would occur via Minna Street (as under existing conditions) and loading of materials other than art (including restaurant and building supplies) would occur via Natoma Street (as under existing conditions). Waste recycling and disposal and other building support activities would also occur via Natoma Street. In addition, a new service elevator would be installed. Figure II-18 shows the proposed loading diagram for the W Hotel.

The existing SFMOMA structure includes 18 subsurface staff motor vehicle parking spaces accessed from Minna Street and approximately 30 bicycle parking spaces exclusively for employees. The motor vehicle and bicycle parking spaces would be eliminated and the space converted to art storage or other back-of-house functions. New public bicycle parking would be located along the new promenade connecting Natoma and Howard Streets, and adjacent to the Minna Street group entrance.

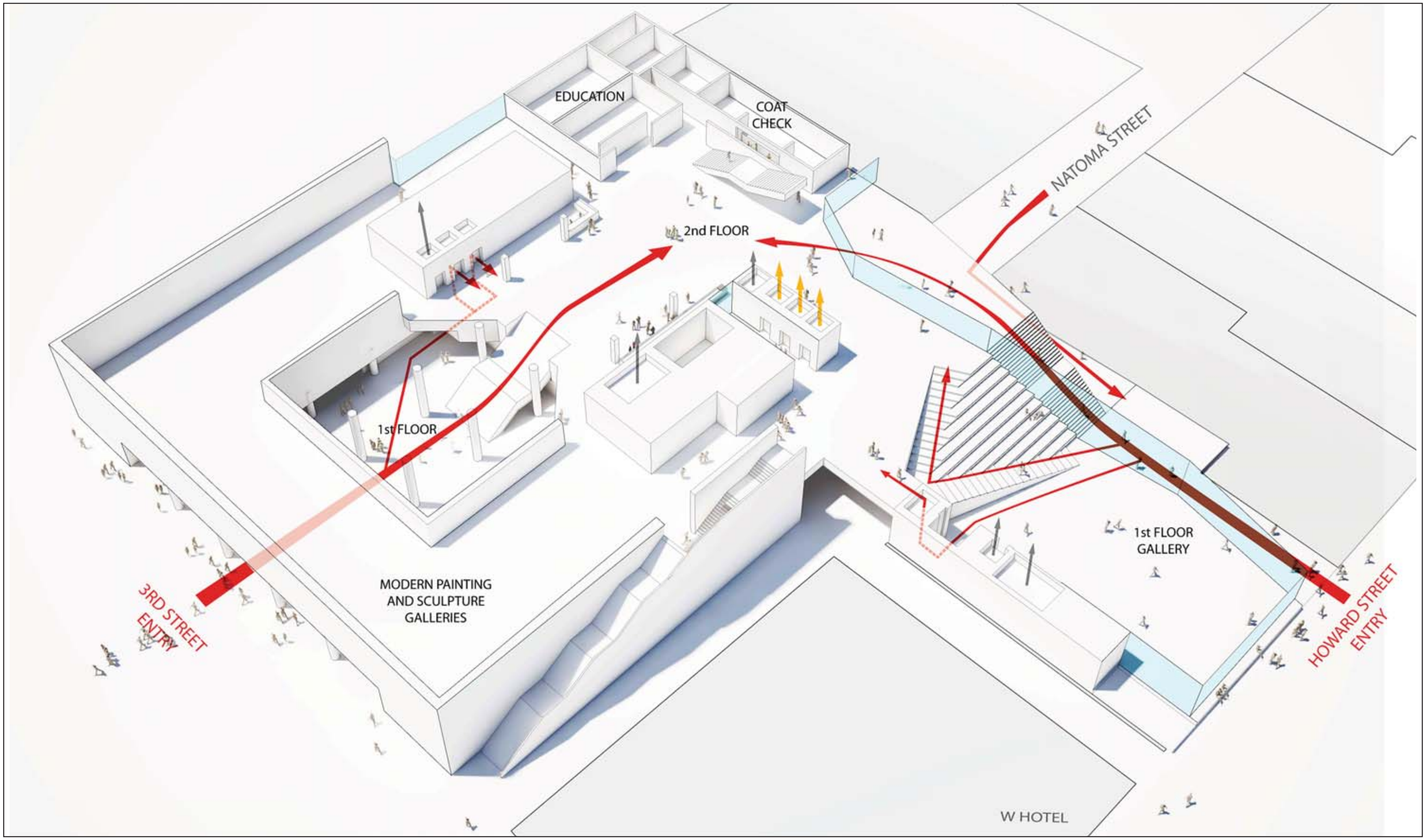


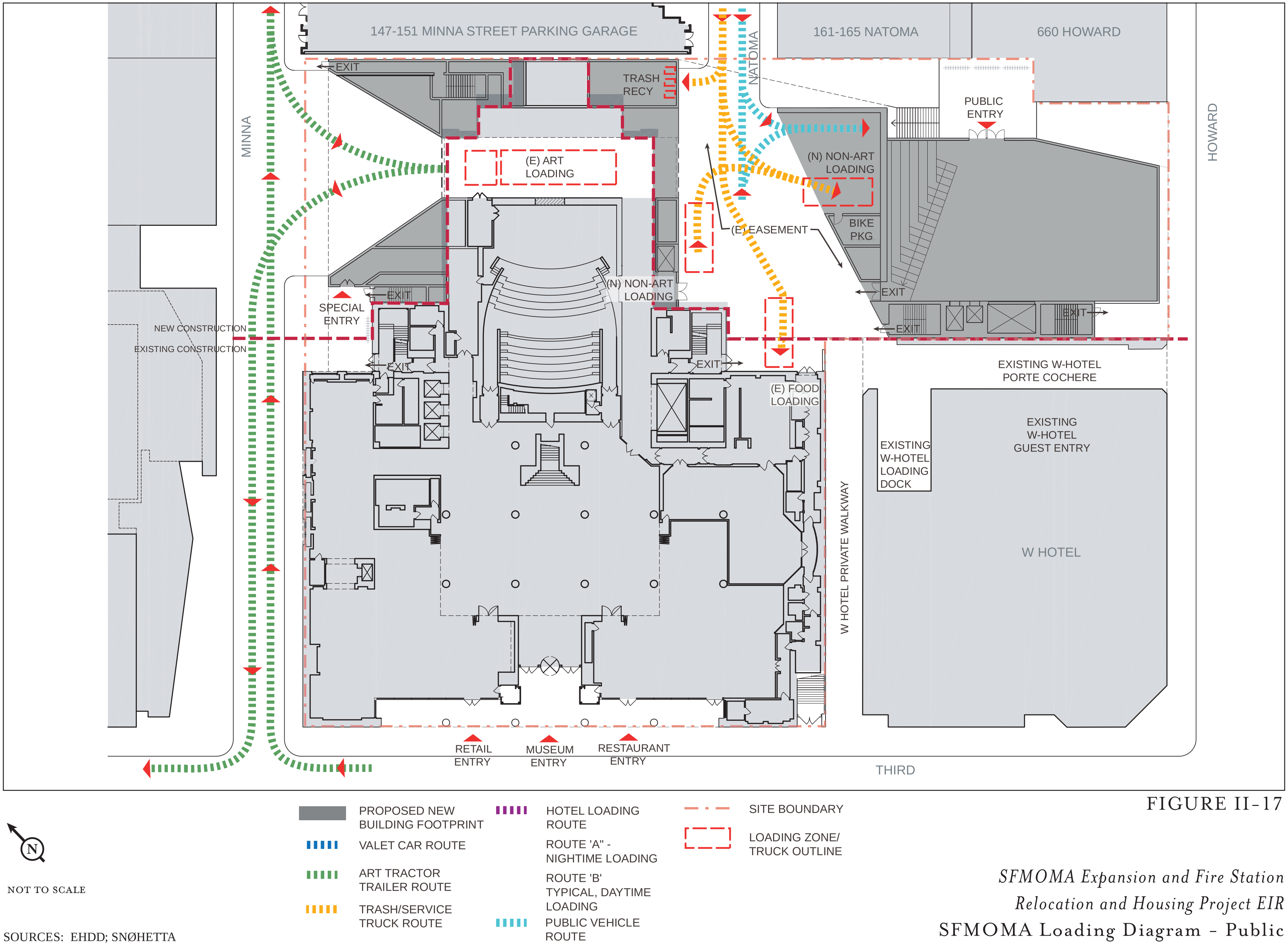
FIGURE II-16

NOT TO SCALE

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Pedestrian Flow Diagram

SOURCE: SNØHETTA, 2011

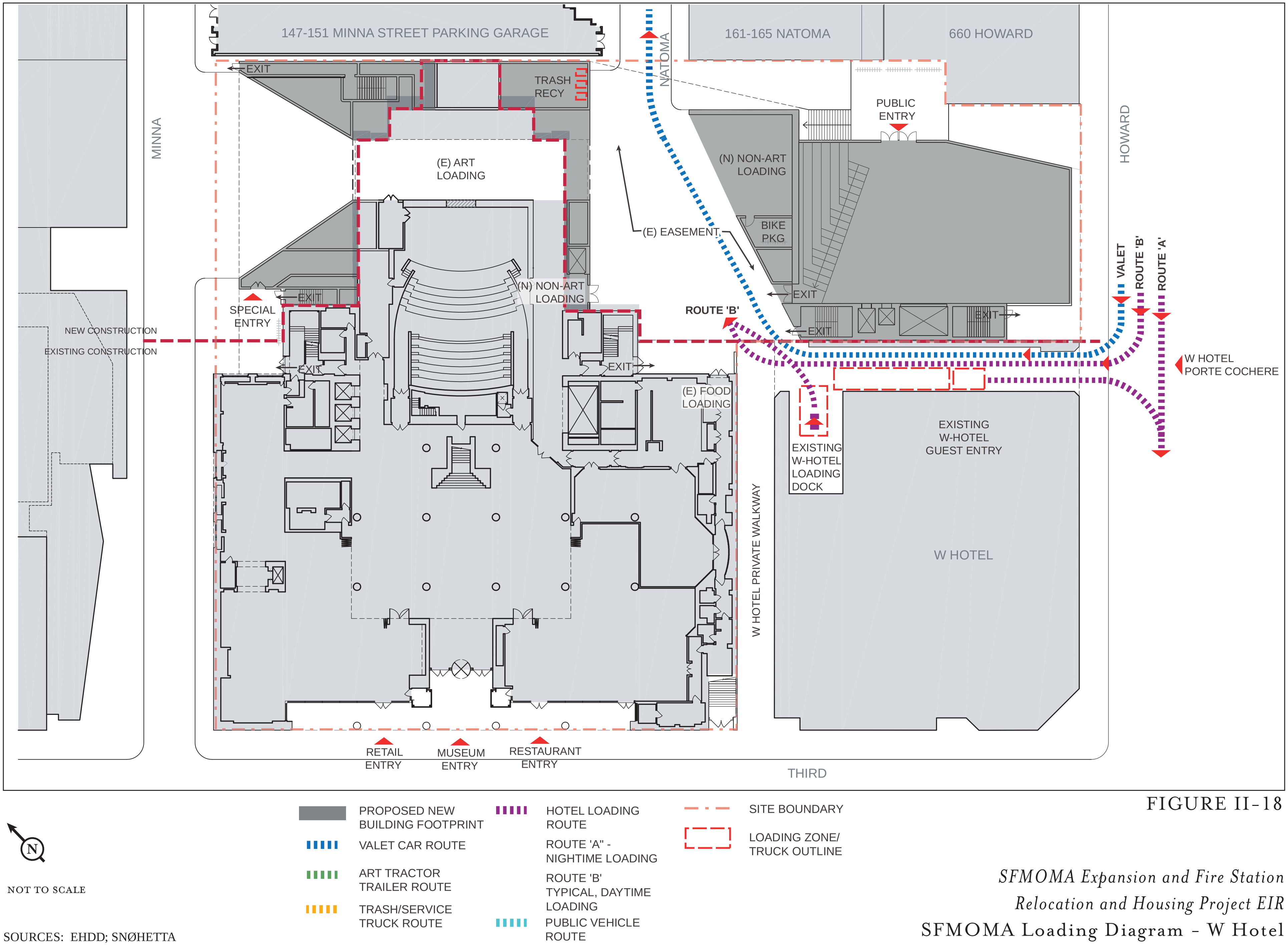


SOURCES: EHDD; SNØHETTA

FIGURE II-17

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

SFMOMA Loading Diagram - Public



SOURCES: EHDD; SNØHETTA

FIGURE II-18

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

SFMOMA Loading Diagram – W Hotel

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Staff bicycle parking spaces would be provided in a secure location adjacent to the easement area on the ground floor. Off-street motor vehicle parking is not included as part of the proposed project.

Architecture and Design. The design is characterized by a rectangular building form with a narrow ridge that rises up behind (east of) the existing Botta-designed museum. The ridge would be narrowest in an area roughly corresponding to the views toward the Pacific Telephone Building, located at 134-40 New Montgomery Street, from Yerba Buena Gardens. It is contemplated that the new structure would be clad in glass fiber reinforced concrete, which is known for its load-bearing properties and resistance to weathering elements. The frontages of Howard and Minna Streets would feature extensive glazing, allowing for views into the building from the street.

Fire Station Relocation and Housing Project

As noted above, the proposed projects include both the expansion of the SFMOMA building and the relocation of Fire Station No. 1. The existing fire station at 676 Howard Street would be demolished to allow construction of the SFMOMA Expansion project. To allow the existing fire station to be demolished, a new fire station would be constructed at 935 Folsom Street to replace it. As the fire station would not require the entire 14,400-square-foot property, the lot at 935 Folsom Street would be subdivided into two parcels and would include two uses: the new fire station fronting Folsom Street and a multi-family residential building with up to 13 units fronting Shipley Street. The replacement fire station would be built on the northerly 9,000-square-foot parcel referred to as Lot A and the multi-family residential project would be built on Lot B, the 5,400 square foot southerly portion of the lot, and a portion of both Lots A and B would provide at-grade parking for firefighters (15 spaces for cars parked in tandem; the personal vehicles of fire fighters would remain parked for each firefighter's 24-hour shift). The eight spaces of surface parking on Lot B would be provided pursuant to a parking easement. Figure II-19 provides a conceptual site plan and elevation of the Fire Station Relocation and Housing Project. Figure II-20 provides a site plan. Figures II-21 through II-26 show the floor and roof plans for the Fire Station Relocation and Housing Project. Figure II-27 shows the fire station building section. Figures II-28 and II-29 show elevations of the fire station.

The new fire station would be 2 stories plus a mezzanine level. It would be an approximately 34-foot-tall structure with a gross area up to 15,000 square feet and a footprint of approximately 6,750 square feet. The fire station's staffing level and equipment would not differ from the current condition at Fire Station No. 1. (The existing fire station is staffed by 13 firefighters and houses three vehicles.)[3] The fire station would have three bay doors (as opposed to two bay doors at the existing fire station) fronting on Folsom Street and a surface area for firefighter parking located at the rear of the station.

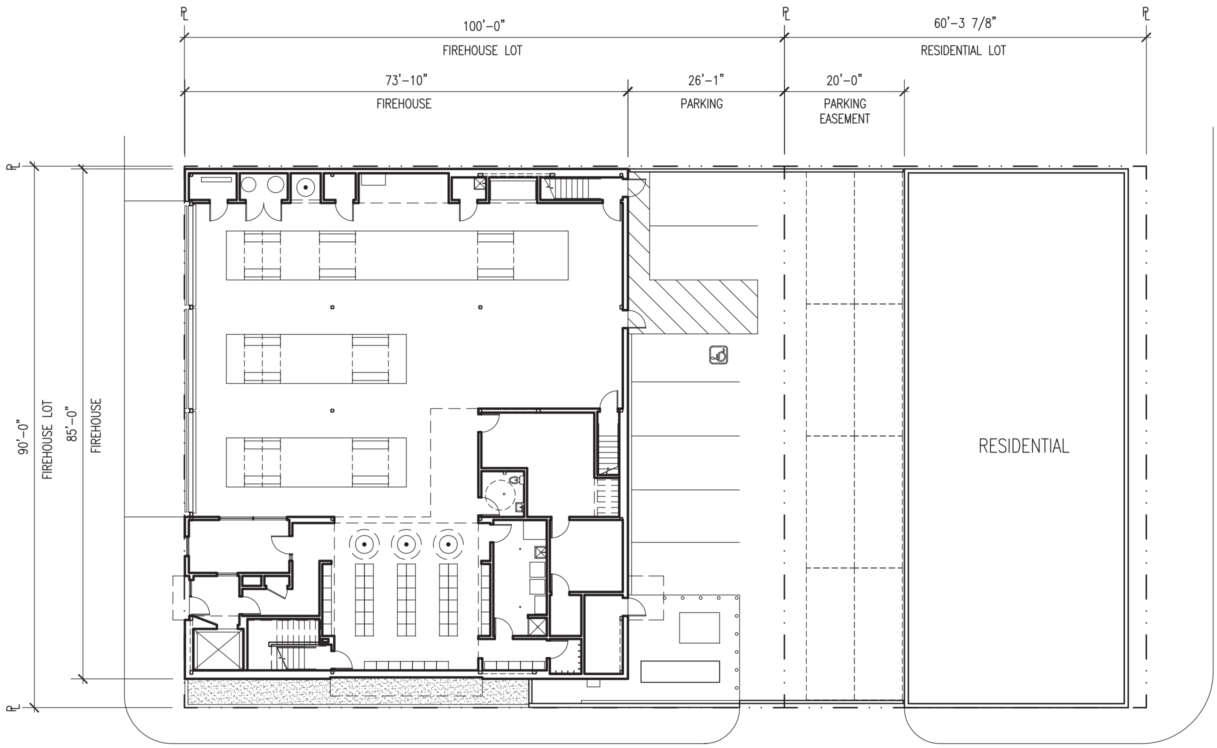
According to the project architect, the design of the fire station "is intended to express both the stability and dignity of an important civic building and the unique character of a fire house."[4] The three apparatus bays would dominate the Folsom Street façade, and the large red doors would be accentuated by three light metal screens suspended above them, which would provide visual privacy and sun shading for the captains' sleeping rooms. The exterior walls would be clad with a lightweight cement board rain screen. A prismatic glass bay would project from the building mass above the public entry.

The building would be set back from the property line by 5 feet to accommodate a bioswale along Falmouth Street, consistent with the City's Stormwater Design Guidelines. The bioswale, which would be planted with native plants, would receive all stormwater runoff from the roof of the fire station, filtering it prior to delivery to the City's storm sewer system. Also along Falmouth Street, a broad bay window would project from the mezzanine-level living area, clad in the same light metal screen as the window on the Folsom Street elevation. An 8-foot-high wall and rolling gate at Falmouth Street would screen the parking lot and utilities from pedestrian view and also provide security. The staff parking area would be accessed from Falmouth Street. Downward-pointing exterior lighting would also be installed on the façade at Falmouth Street.

[3] Personal communication with Thomas Doudiet, Assistant Deputy Chief, San Francisco Fire Department, July 21, 2010. This document is available for review at the Planning Department in Case File No. 2010.0275E.

[4] *Project Narrative*, LMS Architects, February 22, 2011. This document is available at the Planning Department in Case File No. 2009.0291E.

PLAN VIEW (GROUND LEVEL)



BUILDING SECTION

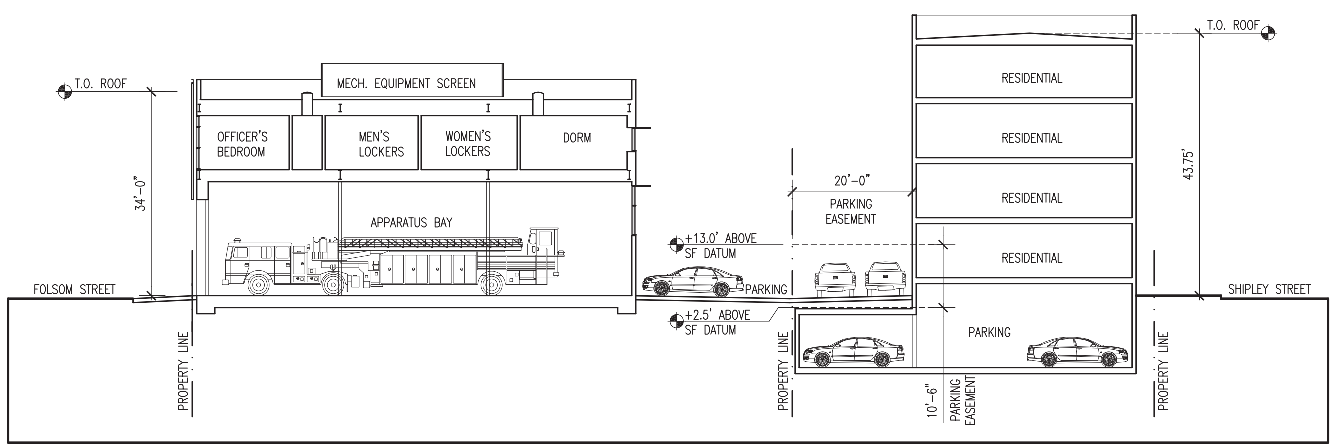


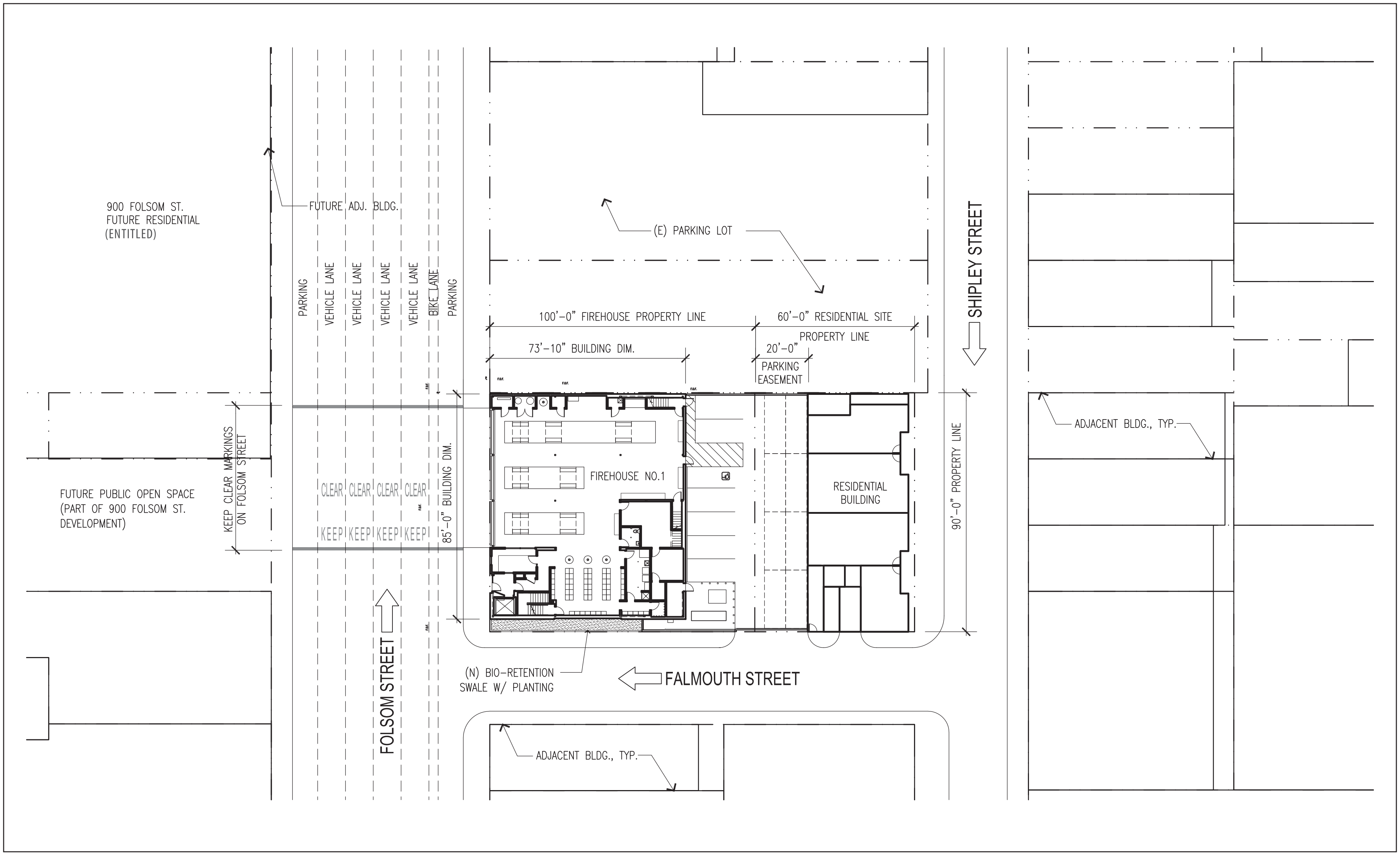
FIGURE II-19

NOT TO SCALE

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Fire Station Relocation and Housing Project
Plan View and Building Section - Overview

SOURCE: LMS ARCHITECTS, 2011.

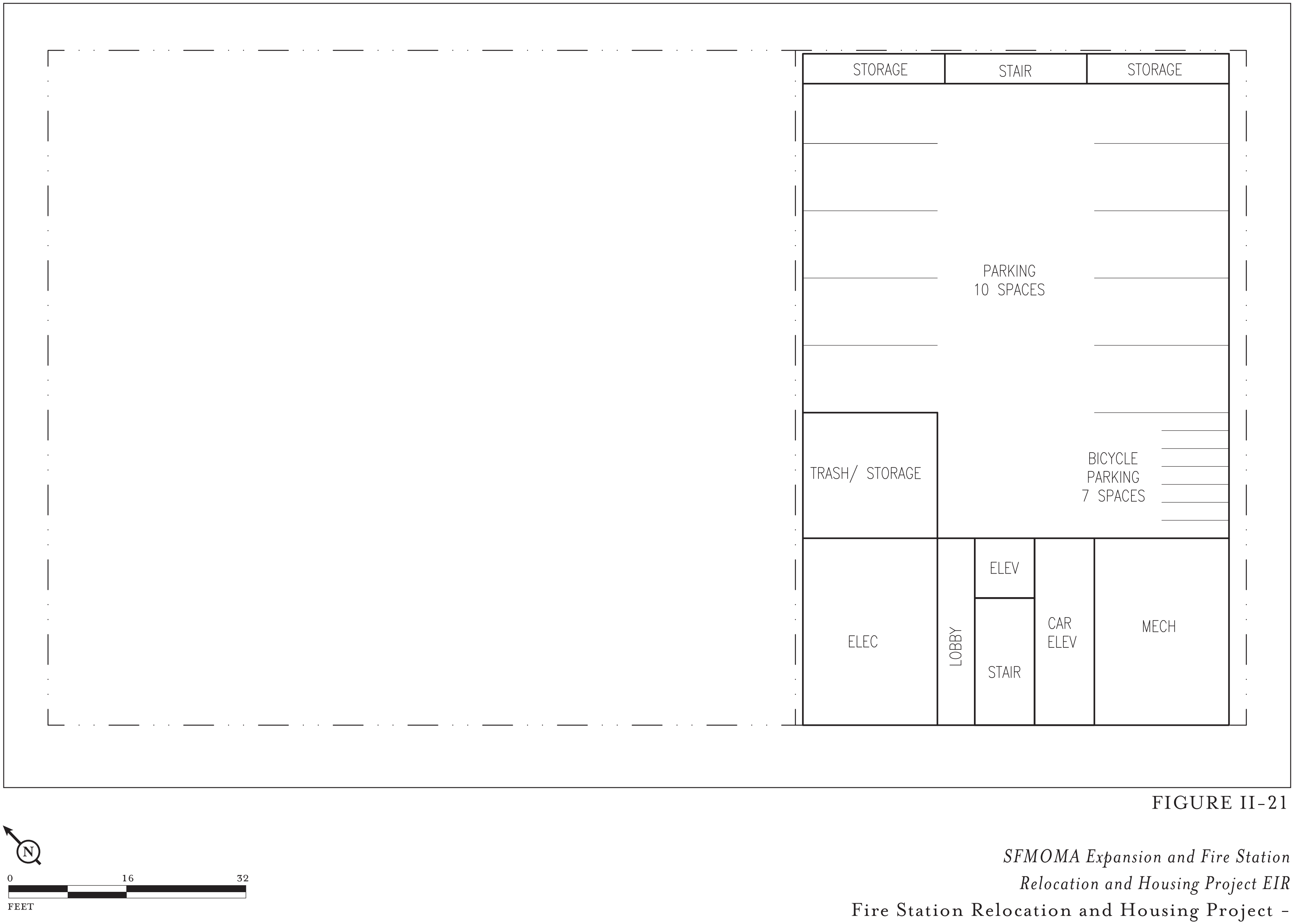


SOURCE: LMS ARCHITECTS, 2011.

FIGURE II-20

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Fire Station Relocation and Housing Project - Site Plan



SOURCE: LMS ARCHITECTS, 2011.

FIGURE II-21

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Fire Station Relocation and Housing Project - Basement (Housing) Plan

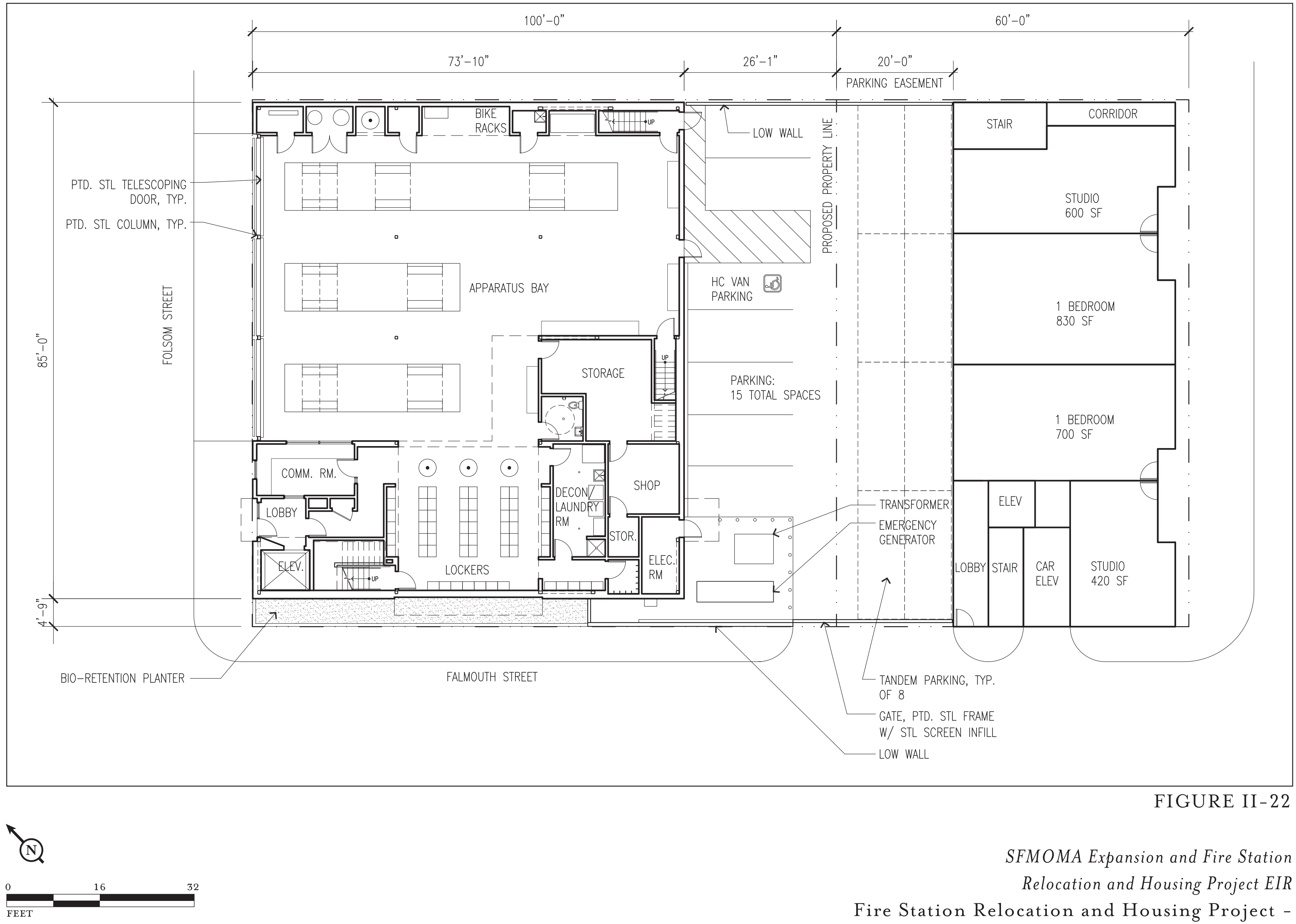


FIGURE II-22

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Fire Station Relocation and Housing Project - First Floor Plan

SOURCE: LMS ARCHITECTS, 2011.

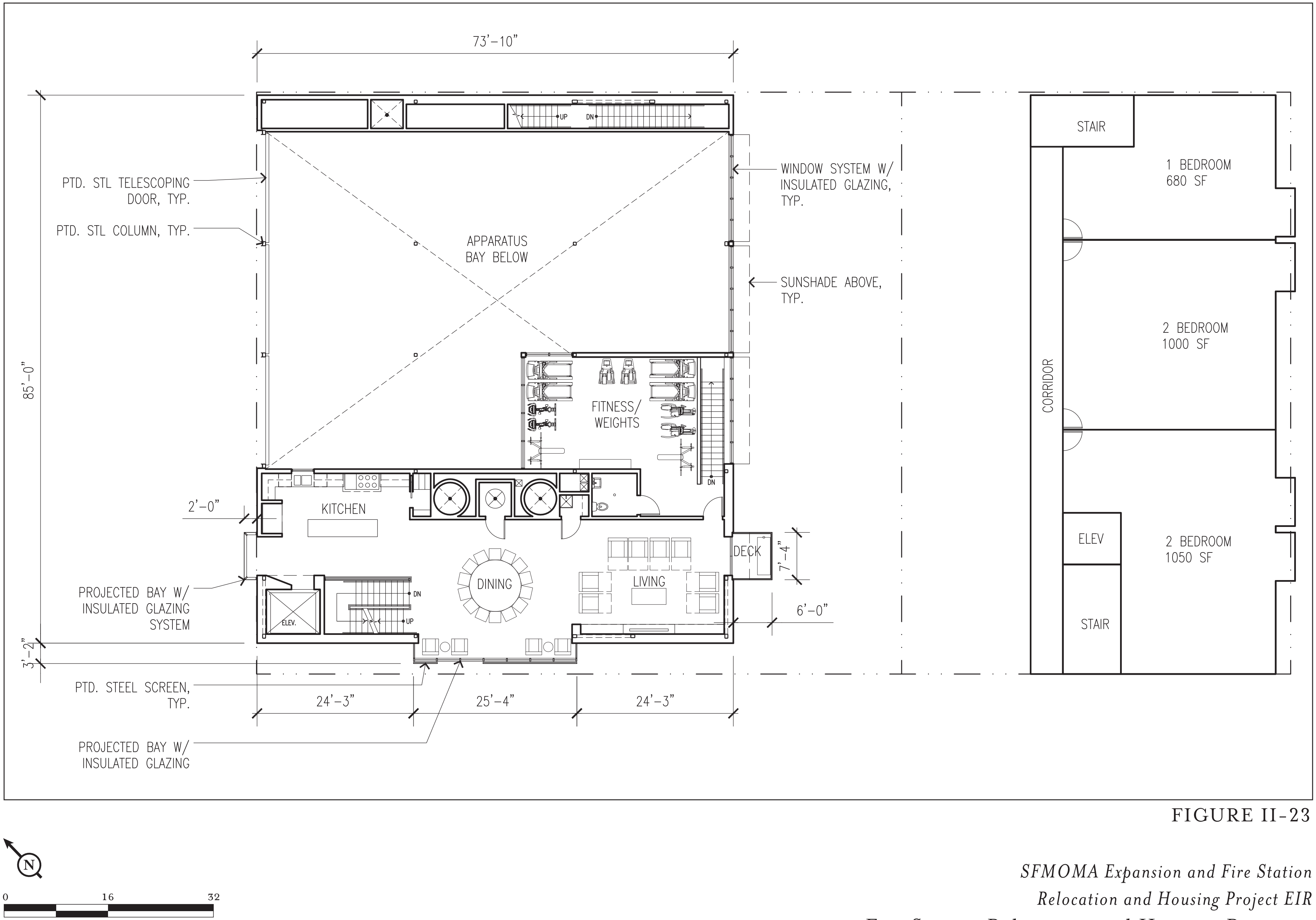


FIGURE II-23

SOURCE: LMS ARCHITECTS, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Fire Station Relocation and Housing Project – Mezzanine (Fire Station) and Second Floor (Housing) Plan

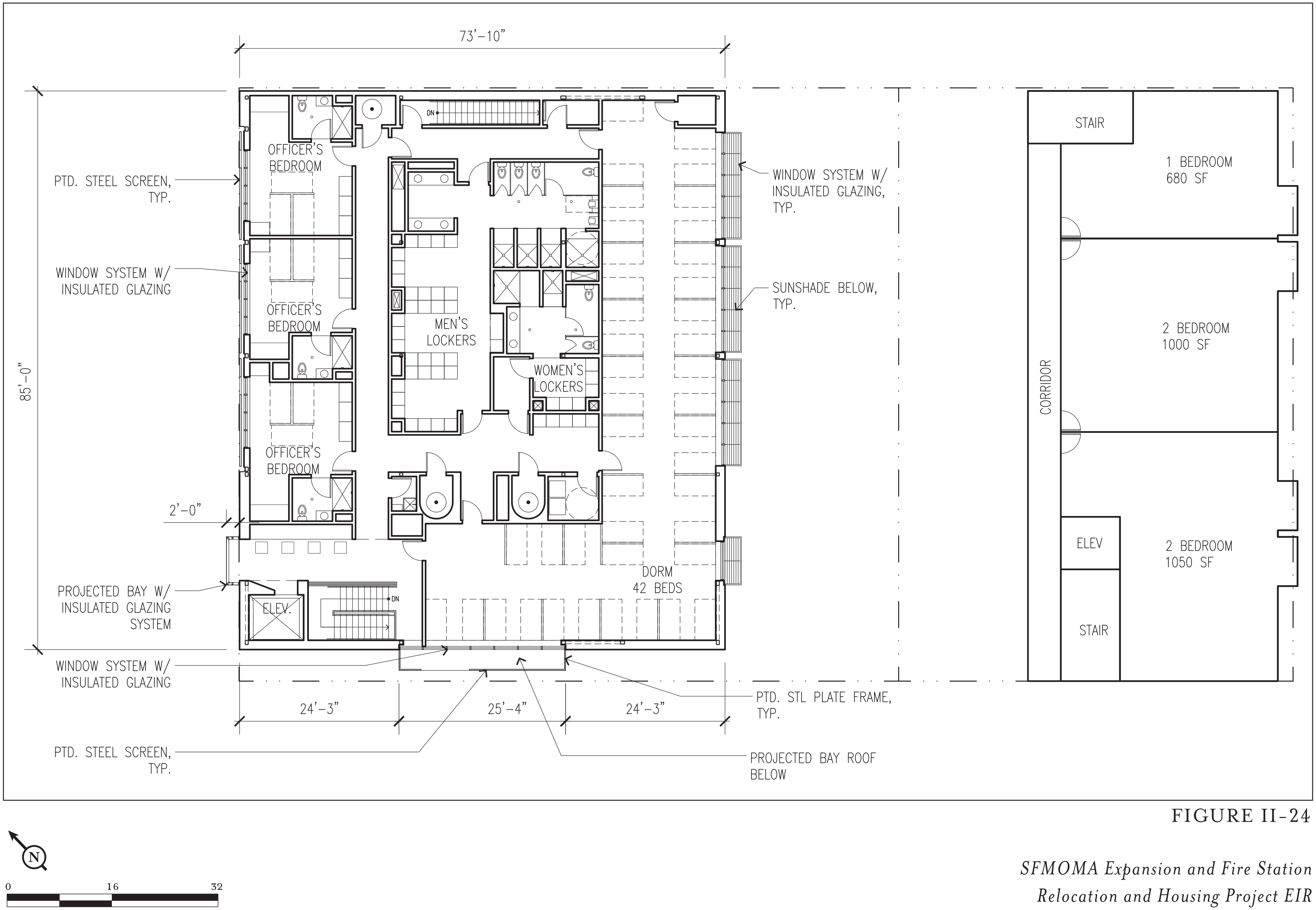


FIGURE II-24

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Fire Station Relocation and Housing Project - Second Floor (Fire Station) and Third Floor (Housing) Plan

SOURCE: LMS ARCHITECTS, 2011.

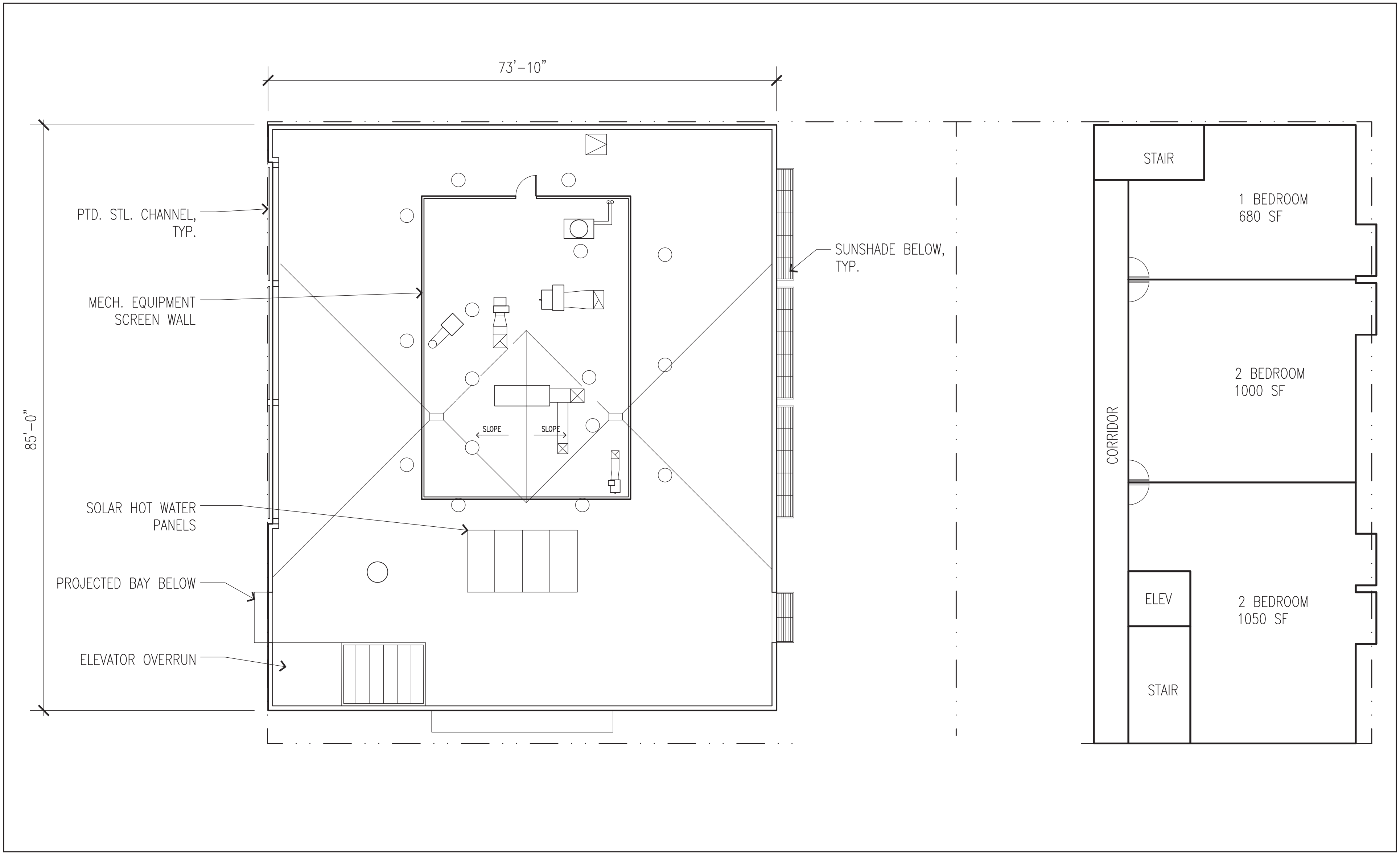


FIGURE II-25

SOURCE: LMS ARCHITECTS, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Fire Station Relocation and Housing Project – Roof (Fire Station) and Fourth Floor (Housing) Plan

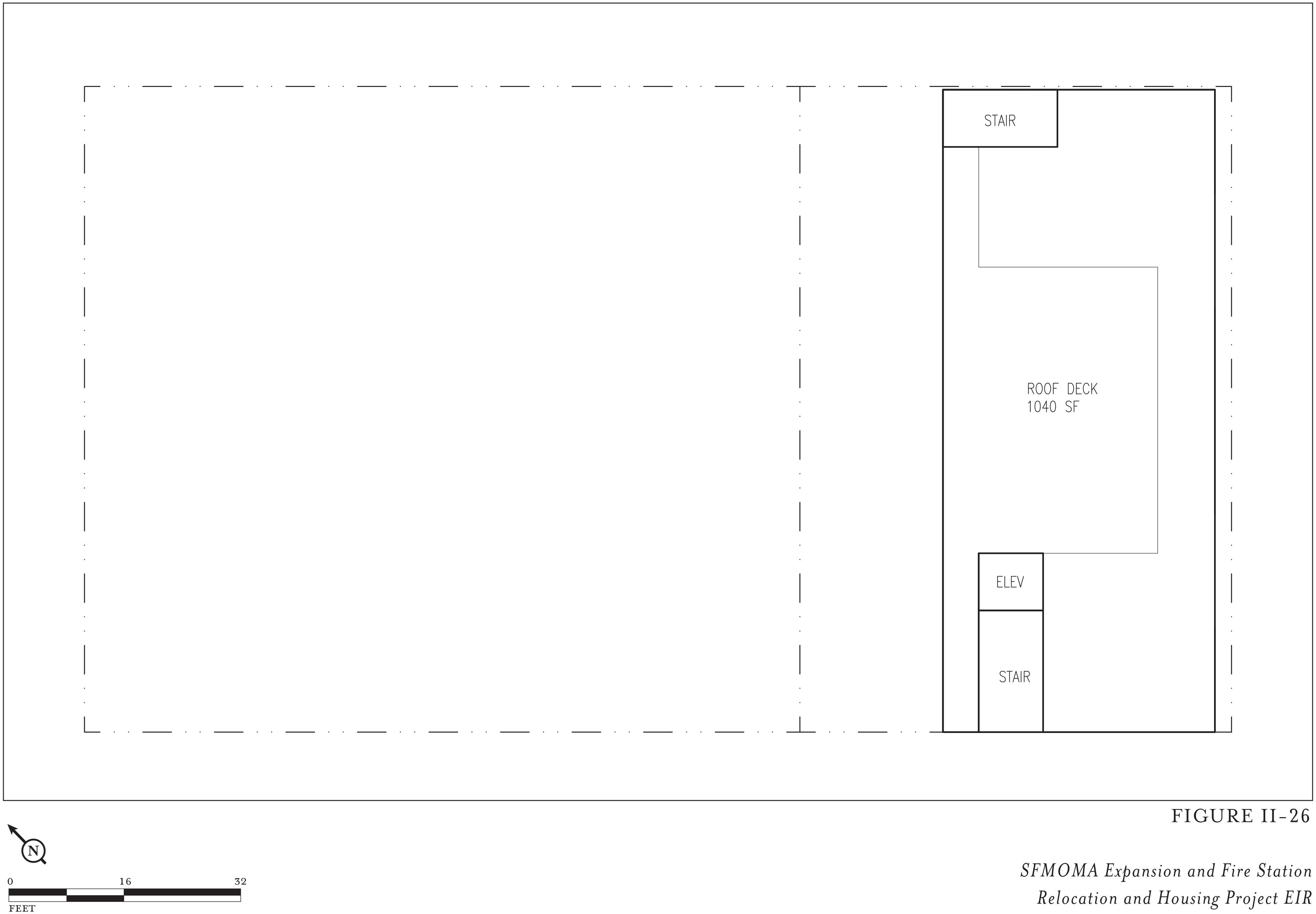


FIGURE II-26

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Fire Station Relocation and Housing Project - Roof (Housing) Plan

SOURCE: LMS ARCHITECTS, 2011.

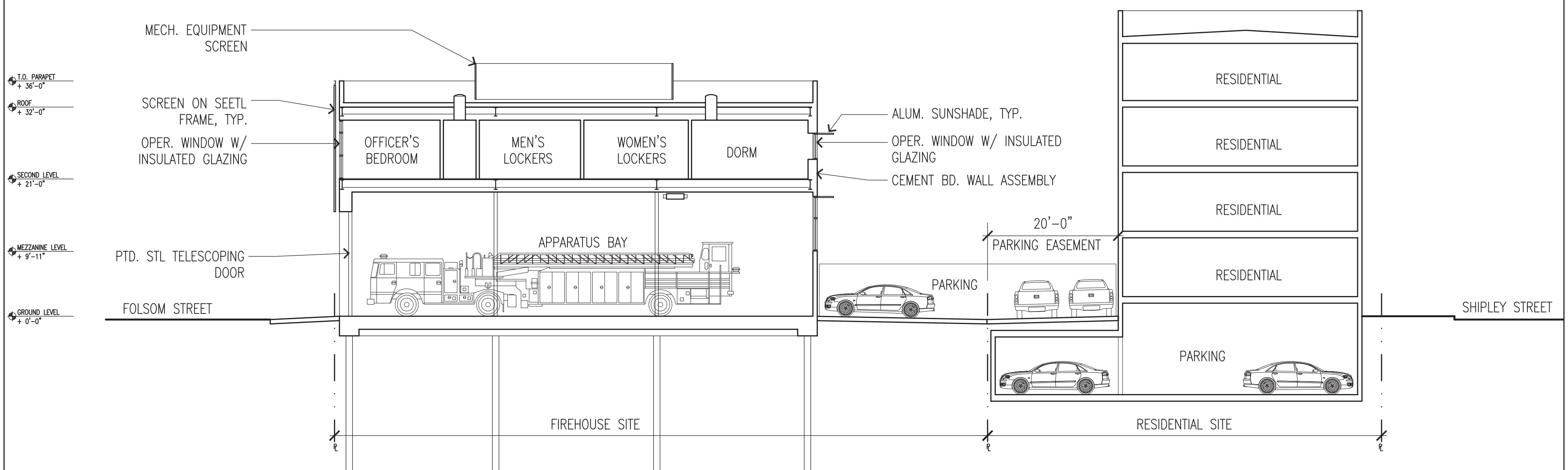
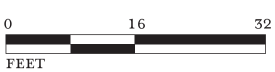


FIGURE II-27

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Fire Station Relocation and Housing Project - Building Section



SOURCE: LMS ARCHITECTS, 2011.

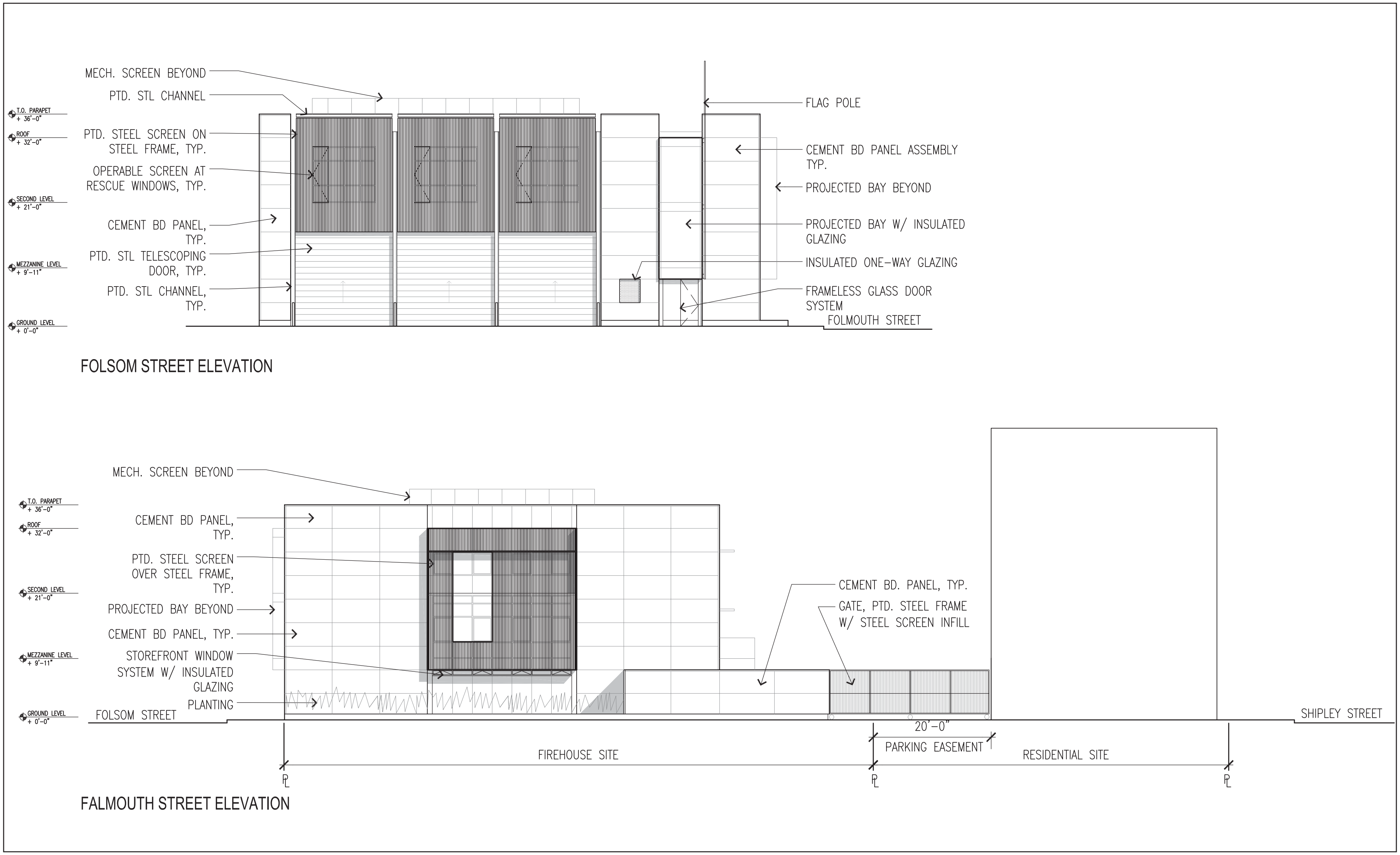


FIGURE II-28

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Fire Station Relocation and Housing Project - Folsom and Falmouth Streets Elevations

SOURCE: LMS ARCHITECTS, 2011.

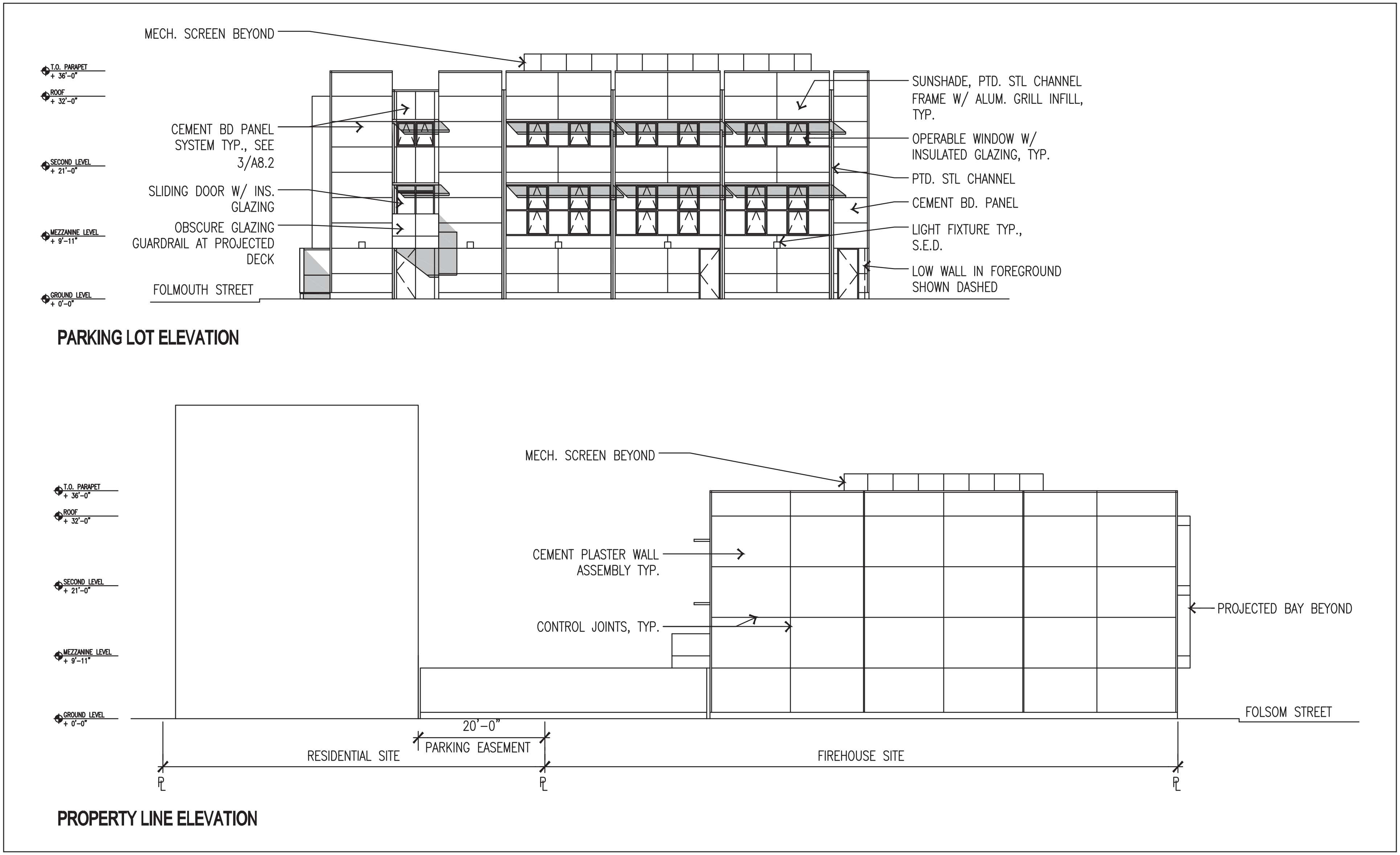


FIGURE II-29

SOURCE: LMS ARCHITECTS, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Fire Station Relocation and Housing Project - Parking Lot and Property Line Elevations

The new fire station would be designed to current structural standards for an essential facility and would rest on a pile-supported foundation. The fire station would include a boiler and a 225 kilowatt emergency generator (a Cummins Onan Tier 4 generator with a 72-hour fuel tank), which would run on diesel fuel. The SFFD would test the generator for 30 minutes, once per month. Excavation to a depth approximately 3 feet below the grade at the sidewalk would be required for the pile cap and grade beam construction. The fire station's proposed interior space is summarized below:

- *First Floor*. On the first floor, the three large apparatus bays opening onto Folsom Street would provide space for three emergency vehicles and ancillary emergency equipment. An equipment area would contain 60 turnout lockers, a drying room, and decontamination room. A communications room would be located at the Folsom Street frontage of the site to afford unobstructed views of both the interior of the apparatus bays and Folsom Street. A small public lobby would provide access to an elevator, the communications room, and the rest of the first floor spaces.
- *Mezzanine Floor*. The mezzanine floor would accommodate living spaces for firefighters, including kitchen, dining, and living areas. In addition, a separate exercise room would overlook the apparatus bays. The floor would served by two stairways and one fire pole.
- *Second Floor*. The second floor would contain a dormitory with 42 beds, three captains' sleeping rooms with three beds each, men's and women's restrooms and lockers, and laundry facilities. There would be a total of 45 firefighter lockers. A separate study area would also be provided adjacent to the elevator and stair landing for use by firefighters. The floor would be served by two stairways and three fire poles.

No detailed design has yet been prepared for the residential building fronting Shipley Street. However, conceptual plans indicate that the building would be a 4-story, approximately 43-foot-tall structure with a subterranean parking garage. The garage would comprise approximately 5,550 square feet and would be accessed from Falmouth Street. The above-grade structure would have a gross area of approximately 17,000 square feet, and would include up to 13 residential units. The residential units would consist of approximately two studios (ranging from approximately 420 to 600 square feet in size); five one-bedroom units (ranging from approximately 680 to 830 square feet in size); and six two-bedroom units (ranging from approximately 1,000 to 1,050 square feet in size).

Please refer to Figures II-23 through II-28 for floor and roof plans. Approximately 1,040 square feet of open space to serve the residential uses would be provided on the site. Excavation to a depth of 10 feet below grade would be required for construction of the building's basement-level garage, which would contain approximately 10 vehicle spaces with a portion of the subterranean parking area located beneath the 20-foot at-grade parking easement provided for the fire fighters' vehicles.

The curb along the Folsom and Falmouth Street frontages of the site and across Folsom Street would be painted red, indicating a no parking zone. No changes would be made to the curb along the Shipley Street frontage of the site. Testing of Fire Department equipment would occur primarily along the northernmost and southernmost parking lanes of Folsom Street, although an alternate testing area would be established along the eastern side of Falmouth Street, adjacent to the proposed fire station. In addition, as part of the project, "KEEP CLEAR" and "FIRE HOUSE" markings would be painted on Folsom Street along the approximately 50-foot-wide street segment adjacent to the proposed fire station. As of publication of this EIR, the exact location and configuration of these markings are being determined and would be subject to San Francisco Metropolitan Transportation Agency (MTA) approval.

The new fire station would be equipped with a traffic signal preemption system, using Opticom Global Positioning System (GPS) technology that would be linked to the nearby intersections of Fifth/Folsom Streets and Sixth/Folsom Streets. (At the existing fire station at 676 Howard Street, signal preemption is employed at the intersections of Third/Howard Streets and Fourth/Howard Streets.) A traffic signal preemption system is a traffic control system to improve emergency response times and traffic safety (and reduce the use of emergency vehicle horns and sirens) by temporarily overriding signalized intersections to benefit emergency vehicles. In general, traffic signal preemption provides an emergency vehicle the ability to preempt a traffic signal in order to have the "green" light in the direction of the responding vehicle. The signal would preempt to green for the direction of the emergency vehicle, and would hold red in all other directions.

Signal preemption equipment for the intersections of Fifth/Folsom Streets and Sixth/Folsom Streets would include a GPS-enabled activation switch within the fire station and equipment on fire and rescue vehicles, and at adjacent traffic signal mast arms. The signal preemption would be activated at the time a call for emergency services arrives. At the intersection of Sixth/Folsom Streets, the traffic signal for the eastbound approach of Folsom Street to Sixth Street, and the Sixth Street northbound and southbound approaches, would turn red, and remain so until the fire/rescue vehicle exits the "preemption zone," as defined by MTA. At the intersection of Fifth/Folsom Streets, the northbound and southbound approaches would turn red, and the signal for Folsom Street eastbound would turn green so that vehicles on the block between Fifth and Sixth Streets would clear the length of the block before the emergency response vehicle leaves the station. Fire and rescue vehicles would then have the option to travel either eastbound towards Fifth Street, or westbound towards Sixth Street. Because the signal at Sixth/Folsom Streets would hold all traffic, emergency vehicles would be able to proceed against the normal traffic flow. At both Fifth Street and Sixth Street, the pedestrian "Flashing Red Hand" for the approaches that would be receiving a red phase would be triggered first, to ensure that any pedestrians within the crosswalk can finish crossing prior to the signal change. Please refer to Section IV.D, Transportation and Circulation, for a more detailed discussion of the proposed traffic signal preemption, including potential effects on traffic patterns.

Construction and Phasing

The first phase of project construction would be the demolition of the existing commercial building at 935 Folsom Street and the construction of a new fire station on the site. This would allow the fire company currently housed in Fire Station No. 1 at 676 Howard Street to relocate, and to ensure minimal interruption in fire protection services. During construction, the site would be surrounded by a temporary construction fence (composed of chain link or another material). It is anticipated that the residential building on Lot B would be built after the construction of the fire station is completed and that Lot B would function as a staging and parking area during construction of the new fire station. Approximately 425 cubic yards of soil would be removed (most of which would be exported off-site) from the fire station site for grade beams and pile caps, and approximately 1,225 cubic yards of soil would be removed (and exported off-site) from the residential site for the below-grade parking; this would constitute about 24 truck loads from the fire station site and 68 truck loads from the residential site, assuming 18 cubic yards per truck. After construction of the fire station is completed and the associated parking lot is paved, and before construction of the residential building is started, Lot B would be graded and a wildflower seed mix would be planted on the site using a hydroseeding technique (to temporarily control erosion prior to development of the residential structure). Following hydroseeding, a 4-foot-high chain link fence would be installed between the fire station parking lot and footprint of the residential building. A 10-foot-high chain link fence with green fabric (similar to that used on tennis courts) would be built around the three remaining property lines of Lot B.

Approximately 5 to 25 workers would be on the site depending on the phase of construction. Construction of the new fire station is expected to begin in early 2012 and take a total of about 12 months to complete; demolition would take approximately 2 weeks followed by approximately 11½ months of construction. The residential building would be constructed subsequent to the fire station and would take approximately 14 to 16 months to complete.

The first steps of the construction period on the SFMOMA Expansion site would be the demolition of the Heald Building (670 Howard Street) and Fire Station No. 1 (676 Howard Street) (demolition of Fire Station No. 1 would occur after relocation of the existing fire station to 935 Folsom Street). Soil would then be excavated to approximately 19 to 20 feet below the ground surface (approximately 9 to 10 additional feet of excavation below the existing basement levels of 670 and 676 Howard Street) throughout this area and under Hunt Street to accommodate the basement and foundation of the SFMOMA Expansion. It is estimated that approximately 6,225 cubic yards of soil would be removed from the site for disposal; this would constitute about 350 truck loads, assuming 18 cubic yards per truck. The average work force over the 2-year construction period would be 200 workers, which would fluctuate through the duration of construction. The maximum anticipated work force would be 300 individuals on the SFMOMA site. Construction of the SFMOMA Expansion would take about 2 years to complete; abatement and demolition of 676 and 670 Howard Street would take up to 4 additional months before the start of construction activities.

Table II-3 summarizes the construction phasing associated with the SFMOMA Expansion and Fire Station Relocation and Housing Project, including the typical construction equipment that would be used as part of each phase.

Table II-3: Construction Phasing

Phase	SFMOMA Expansion (Month Start/ Month Finish)	Fire Station Relocation and Housing Project (Month Start/Month Finish)[a]	Typical Equipment
Phase 1: Abatement and Demolition (Pre- Construction)	0/(4)	1/1	hoe ram; claw excavator; bobcat; dump truck*
Phase 2: Clearing/Grubbing	1/2	1/1	excavator; dump truck
Phase 3: Excavation/ Offhaul/Shoring/ Underpinning	2/4	2/2	excavator; backhoe; bobcat; dump truck; driller*; chain saw/saw*; tie back drill rig*
Phase 4: Foundation	4/8	2/4	portable crane; pile rig†; bobcat; excavator; saw; concrete truck; concrete pump truck
Phase 5: Superstructure and Mechanical, Electrical, Plumbing, and Fire Protection Systems	8/14	4/8	tower crane*; portable crane†; concrete truck; concrete pump truck; steel fabrication devices; main lift*
Phase 6: Exterior Envelope	10/20	7/11	tower crane*; man lift*; portable crane†
Phase 7: Interior Finishes	14/24	8/12	tower crane*; man lift*
Phase 8: Site Work	22/24	11/12	bobcat; portable crane; backhoe

[a] The phasing assumptions for construction of the fire station only are listed in this column. The phasing of the housing project would be approximately identical, although the total construction period would last approximately 14-16 months.

* = would be used in construction of the SFMOMA Expansion only.

† = would be used in construction of the Fire Station Relocation and Housing Project only.

Source: *SFMOMA Expansion, Machine Noise Matrix*, Joel Roos, September 13, 2010. This document is available for review at the Planning Department in Case File No. 2010.0275E.

PROJECT APPROVALS

The proposed projects would require the following approvals (by the designated authorities):

SFMOMA Expansion

- Planning Code Section 309 Downtown Project Approval, including a bulk exception (Planning Commission)
- Vacation of Hunt Street and conveyance to SFMOMA (Board of Supervisors)

- Rezoning of 676 Howard Street from P (Public) to C-3-S (Board of Supervisors, with recommendation from Planning Commission)
- Amendment of 151 Third Street Disposition and Development Agreement (DDA) (Redevelopment Agency Commission)
- Lot Merger (Department of Public Works)
- Demolition and Building Permits (Department of Building Inspection)

Fire Station Relocation and Housing Project

- Amendment to General Plan, Map 2 in Community Facilities Element (Fire Facilities Plan)
- Planning Code Section 307(h)/329 Eastern Neighborhoods Project Approval (Zoning Administrator or Planning Commission)
- Rezoning of the fire station portion of the lot from MUR (Mixed Use Residential) to P (Public) (Board of Supervisors with recommendation from Planning Commission)
- Design approval of new public building (Arts Commission)
- Lot Subdivision (Department of Public Works)
- Demolition and Building Permits (Department of Building Inspection)

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PLANS AND POLICIES

This chapter provides a summary of the relevant plans and policies of the City and County of San Francisco (City) that are applicable to the proposed projects (i.e., the SFMOMA Expansion and Fire Station Relocation and Housing Project), and focuses in particular on the projects' potential inconsistencies with applicable plans and policies.

The determination of whether a project is consistent with a specific plan or policy can be subjective, and is best made with a broad understanding of the often-competing policy objectives in a planning document. As a result, policy consistency determinations are ultimately made by the City's local decision-making body (i.e., Planning Commission and/or Board of Supervisors). The analysis in this chapter is intended to provide decision-makers with a discussion of planning considerations that are pertinent to the proposed projects and associated development sites, and a preliminary conclusion regarding whether the projects are inconsistent with identified plans and policies. These preliminary conclusions are intended to supplement decision-makers' own understanding of the various and often-competing policy considerations.

Furthermore, a policy inconsistency is considered significant pursuant to CEQA only when it would result in a significant, adverse physical environmental impact. The potential instances of such conflicts are discussed in the topical sections of this EIR.

The main documents that guide planning and land use within and around the project sites that are discussed in this chapter are:

- San Francisco General Plan (including the Downtown Area Plan and East SoMa Area Plan)
- San Francisco Planning Code
- San Francisco General Plan Priority Policies

- All-Hazards Strategic Plan
- Sustainability Plan
- Climate Action Plan
- Better Streets Plan
- Transit First Policy
- Bicycle Plan
- Yerba Buena Center Redevelopment Plan
- Transbay Redevelopment Plan
- Draft Transit Center District Plan
- South of Market Redevelopment Plan
- Draft Western SoMa Community Plan
- Draft Central Corridor Project

Figure III-1 shows the project sites in the context of the Downtown Area Plan (Downtown Plan), East SoMa Area Plan, Yerba Buena Center Redevelopment Plan, Draft Western SoMa Community Plan, and Draft Transit Center District Plan.

Environmental plans and policies are those, like the Bay Area 2010 Clean Air Plan, which directly address environmental issues and/or contain targets or standards that must be met in order to preserve or improve the characteristics of the City's physical environment. The proposed project would not obviously or substantially conflict with any such adopted environmental plan or policy. Resource-specific and regional plans and policies are discussed in specific topical sections of this EIR (e.g., Air Quality), as appropriate.

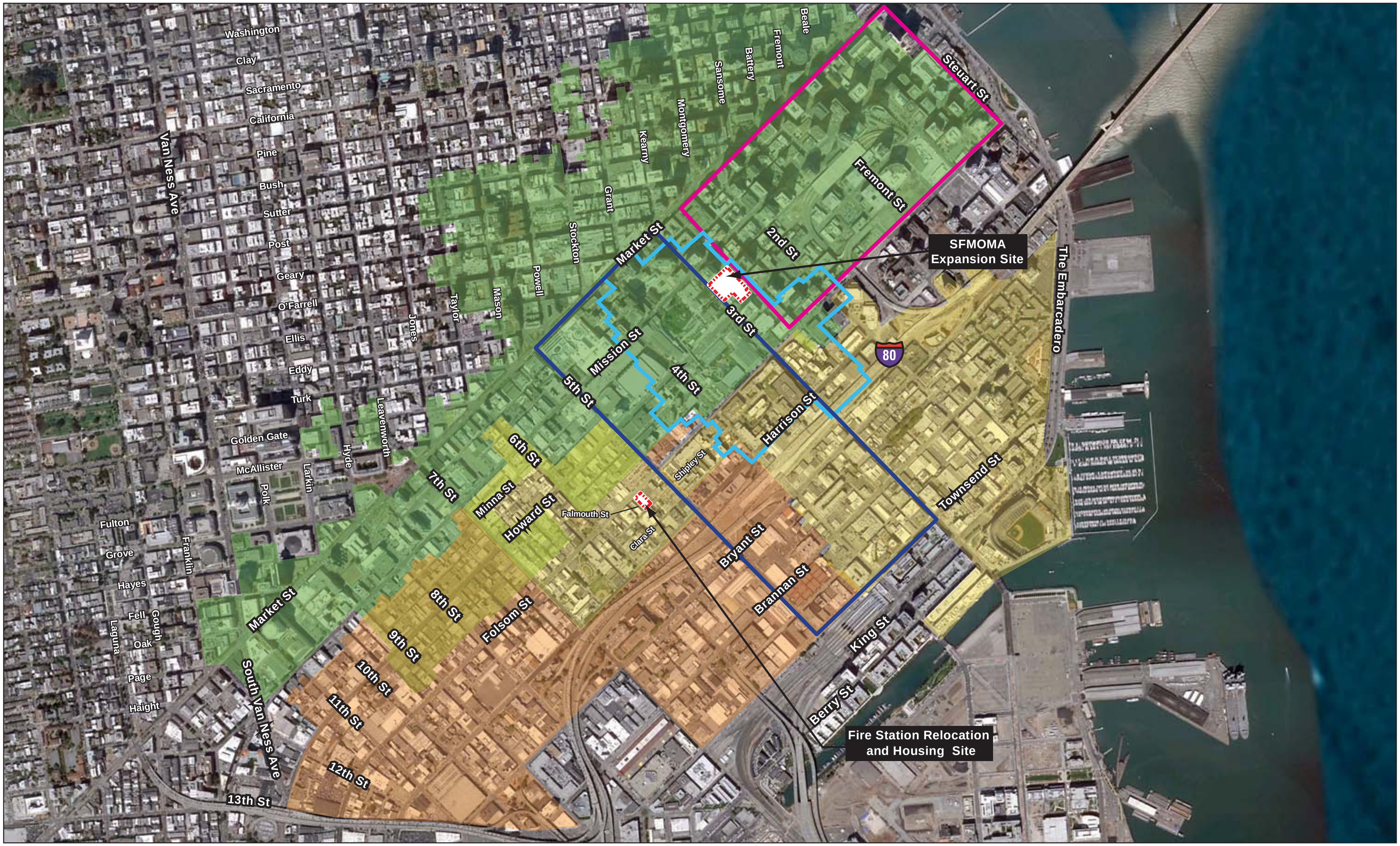

FIGURE III-1

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Project Sites	Draft Transit Center District Plan Area
East SOMA Plan Area	Yerba Buena Center Redevelopment Plan Area
Draft Western SOMA Community Plan Area	Draft Central Corridor Project (Study Area)
	Downtown Plan Area

SOURCES: GOOGLE EARTH, 2010; SFMOMA; LSA ASSOCIATES, INC., 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR
Area Plans

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SAN FRANCISCO GENERAL PLAN

The San Francisco General Plan provides general policies and objectives to guide land use decisions in the City, and embodies the City's vision for the future physical development of San Francisco. The General Plan comprises ten elements (each of which pertains to a particular topic or resource area that is important throughout the City) and various area plans. The elements include: Air Quality; Arts; Commerce and Industry; Community Facilities; Community Safety; Environmental Protection; Housing; Recreation and Open Space; Transportation; and Urban Design. These elements provide a policy context for future development in the City. In addition, the General Plan includes area plans that outline goals and objectives for specific geographic and community planning areas (such as the Downtown Area).

The Planning Department, Zoning Administrator, Planning Commission, Board of Supervisors, and other City decision-makers will evaluate the proposed projects in the context of the General Plan, and as part of this review process will consider potential conflicts. This consideration of General Plan objectives and policies would occur independent of the environmental review process, as part of the decision to approve or reject the proposed projects. Any potential conflict not identified in this EIR would be considered in that context and would not alter the analysis of physical environmental impacts found in this EIR.

Four General Plan elements that are particularly applicable to the proposed project are the Arts, Community Safety, Community Facilities, and Urban Design elements.

The General Plan Arts Element is intended to strengthen arts in the City and to incorporate consideration of arts and artists in the local decision-making process. The Arts Element also seeks to make art accessible to City residents by supporting museums, public art, and arts-related programs through public policy and other means. The premise of the Element is that "the arts make significant contributions to life in San Francisco" and thus should be actively fostered by the City.

The proposed SFMOMA Expansion would not obviously conflict with any goals, objectives, or policies in the Arts Element, and would promote the objectives regarding strengthening arts institutions in the City, including Objective VI-1: “Support the continued development and preservation of artists’ and arts organizations’ spaces.” The proposed SFMOMA Expansion would also promote Policy I-2.2 (“Continue to support and increase the promotion of the arts and arts activities throughout the City for the benefit of visitors, tourists, and residents.”); Policy III-2.2 (“Assist in the improvement of arts organizations' facilities and access in order to enhance the quality and quantity of arts offerings.”); and Policy VI-1.11 (“Identify, recognize, and support existing arts clusters and, wherever possible, encourage the development of clusters of arts facilities and arts related businesses throughout the city.”), as the project would enhance arts activities and facilities in San Francisco through the development of additional gallery and accessory space, and contribute to the cluster of arts facilities in the Yerba Buena area.

The Community Safety Element of the General Plan is intended to “reduce future loss of life, injuries, property loss, environmental damage, and social and economic disruption from natural or technological disasters,” including through the development and implementation of programs to respond to emergencies. The proposed Fire Station Relocation and Housing Project would result in the relocation of Fire Station No. 1 from its existing location at 676 Howard Street to 935 Folsom Street. As discussed in Section IV.D, Transportation and Circulation, and Section IV.I, Public Services, this relocation would not substantially and adversely compromise emergency response times, including the ability of the San Francisco Fire Department to respond to emergencies, or result in traffic congestion such that emergency response would be substantially hindered. Therefore, the Fire Station Relocation and Housing Project would be generally consistent with the objectives and policies of the Community Safety Element, including Policy 3.6: “Maintain and expand the city’s fire prevention and fire fighting capacity with adequate personnel and training. Assure the provision of adequate water for fighting fires.” The project would also be consistent with Policy 2.13 of the 2007 Update (“Support the recently developed Emergency Command Center, and ensure alternative command centers in the case of an emergency.”), which seeks to ensure duplication of potential emergency response facilities, in the event the main Emergency Command Center is non-functional. The proposed Fire Station No. 1 would be built in accordance with the most current building code and would thus face a far lower risk of damage during a major earthquake than the existing fire station. Fire Station No. 1 is considered an "essential facility," which is a public facility that is critical to maintaining public health and/or safety, and that is typically difficult to site. Please refer to Section IV.D, Transportation and Circulation, and Section IV.I, Public Services, for additional detail.

The Community Facilities Element of the General Plan seeks to provide adequate community facilities – including police, educational, library, fire, and utilities-related infrastructure – throughout the City. Objective 5 of the Community Facilities Element is: "Development of a system of firehouses which will meet the operating requirements of the Fire Department in providing fire protection services and which will be in harmony with related public service facilities and with all other features and facilities of land development and transportation provided for in other sections of the General Plan." As discussed in Section IV.I, Public Services, the relocated Fire Station No. 1 would meet the operating requirements of the Fire Department and would not compromise the ability of the Fire Department to effectively respond to emergencies. Therefore, the project would not conflict with the Community Facilities Element.

The Urban Design Element of the General Plan seeks to protect public views of open space and water bodies, and protect and enhance the aesthetic character of San Francisco. The proposed SFMOMA Expansion is located within the visual setting of Yerba Buena Gardens, and would intensify the urban fabric surrounding the park and generate more pedestrian traffic on adjacent streets. The project would thus comply with the Principles for City Planning (#13), which state: "Strong and organized development adjacent to parks creates an effective contrast and makes the street space between the two a pleasing space to be in. Weak and disorganized development adjacent to parks neither complements nor effectively contrasts with the park edge."

Scenic vistas, which are given particular attention in the Urban Design Element, are most expansive from the numerous hilltops in San Francisco. None of the streets bordering the SFMOMA Expansion site or the Fire Station Relocation and Housing Project site are considered "Street Areas Important to Urban Design and Views" in the Urban Design Element. Third Street and Howard Street in the vicinity of the SFMOMA Expansion site are identified as streets having a "Good" quality of street views in the Urban Design Element (the middle of the three rankings). Folsom Street in the vicinity of the Fire Station Relocation and Housing Project site is identified as a street having an "Average" quality of street views in the Urban Design Element (the lowest of three rankings). As discussed in more detail in Section IV.B, Aesthetics, the proposed projects would not adversely affect scenic views or other elements of the City's visual character.

However, the proposed projects could conflict with the policies described below:

Policy 2.4: Preserve notable landmarks and areas of historic, architectural or aesthetic value, and promote the preservation of other buildings and features that provide continuity with past development.

Implementation of the SFMOMA Expansion would result in the demolition of Fire Station No. 1 (676 Howard Street) and the Heald Building, located at 670 Howard Street. Neither demolition would result in a significant adverse effect on historic resources, as described in Section IV.C, Cultural Resources.

The proposed Fire Station Relocation and Housing Project would result in the demolition of the light industrial/commercial structure located at 935 Folsom Street. Based on an Historic Resources Evaluation Response prepared by the San Francisco Planning Department, the building, although not individually significant, not located in an historic district, and not considered a landmark, is eligible for listing on the California Register of Historical Resources (and is considered a historic resource pursuant to CEQA) due to its association with development of the SoMa neighborhood after the 1906 earthquake and because it was designed by a notable local architect.[1] Therefore, demolition of the building could conflict with Policy 2.4 because the building provides continuity with the rebuilding effort following the 1906 earthquake. Associated physical environmental impacts are discussed in Section IV.C, Cultural Resources.

[1] *Historic Resource Evaluation Response, 935 Folsom Street*, San Francisco Planning Department, April 24, 2009. This document is available as Appendix B of this EIR and at the Planning Department in Case File No. 2006.0241E.

Policy 2.8: Maintain a strong presumption against the giving up of street areas for private ownership or use, or for construction of public buildings.

As part of the SFMOMA Expansion, the City would vacate the remaining 3,500-square-foot segment of Hunt Street on the project site and convey the underlying land to SFMOMA (as part of an exchange for a portion of the Fire Station Relocation and Housing Project site and a new fire station on that site). Therefore, the project would require the City to give up an existing street segment and could conflict with Policy 2.8. However, the Hunt Street segment is of little use as a pedestrian alley because it is landlocked (the street does not connect to any other public street and is used by SFFD personnel for parking). It also is subject to low pedestrian usage levels (see Section IV.D, Transportation and Circulation).

As part of the project, a promenade up to 18 feet in width and approximately 160 feet in length (consisting of a total of approximately 3,735 square feet) would be developed along the eastern boundary of the site, connecting Natoma and Howard Streets. This new promenade (which would comprise approximately 235 more square feet than the segment of Hunt Street proposed to be vacated) would provide a connection between the two streets where none currently exists, improving mobility in the area. Therefore, vacation of the segment of Hunt Street and conveyance to SFMOMA would not conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Downtown Area Plan

The SFMOMA Expansion site is located within the boundaries of the Downtown Area Plan (Downtown Plan). The Downtown Plan area is irregularly shaped, but is generally bounded by the northern edge of the Financial District (Washington Street) on the north; The Embarcadero on the east; Folsom Street on the south; and Van Ness Avenue on the west. The Downtown Plan was designed to promote development in Downtown that sustains the neighborhood as a commerce, employment, and visitor center while protecting the area's existing housing stock. The Downtown Plan places particular emphasis on reducing the use of private vehicles in favor of enhancing travel by bicycle, foot, and public transit. The Plan also promotes the development of different kinds of open space throughout Downtown, including a series of linked spaces around the high-density Downtown core. The Downtown Plan limits growth in the traditional Downtown – centered in the Financial District – through height limits and maximum floor area ratios (FARs).

A major policy objective of the Downtown Plan is to "enhance San Francisco's role as a tourist and visitor center" (Objective 4). The expansion of SFMOMA in downtown would promote this objective and would be generally consistent with the Downtown Plan in that it would help sustain the neighborhood as an economic and cultural center, while protecting the basic urban fabric of surrounding areas. The project would contain indoor and outdoor open space (including the existing sculpture garden and arcade along Third Street, a new lobby accessed off Howard Street that would be open to the public free of charge, and a promenade immediately east of the museum), and thus would not conflict with Policies 9.1 and 10.4, which promote the provision of accessible open space. The project would not compromise access to sunlight in Yerba Buena Gardens (as at no time of the year would project-related shadow cover portions of Yerba Buena Gardens), and thus would not conflict with Policy 14.1. Similarly, the project would not create hazardous ground-level surface winds and would not conflict with Policy 14.2.

However, the SFMOMA Expansion Project could conflict with Policy 22.1, as described below:

Policy 22.1: Provide sufficient pedestrian movement space.

The text under Policy 22.1 notes: "In areas of highest pedestrian volumes, more parallel, through-block pedestrian ways should be provided if they can serve as convenient links among destinations without encouraging jaywalking." In addition, Hunt Street is designated as a "Destination Alley," defined as: "An alley that serves as an open space activity area generally located in close proximity to an area with a considerable critical mass of pedestrian activity … The short length of the Destination Alley lends a sense of enclosure and distinctive 'sense of place.'" As part of the SFMOMA Expansion, the City would vacate the remaining 3,500-square-foot segment of Hunt Street on the project site and convey the underlying land to SFMOMA (as part of an exchange for a portion of the Fire Station

Relocation and Housing Project site and a new fire station on that site). Therefore, the project would preclude the segment of Hunt Street on the site from being developed into a Destination Alley (and could conflict with the intent of Policy 22.1). Please refer to Figure II-16 in Chapter II, Project Description, which diagrams proposed pedestrian access on the SFMOMA Expansion site.

However, the Hunt Street segment is of little use as a pedestrian alley because it is landlocked (the street does not connect to any other public street). It also is subject to low pedestrian usage levels; it is used by approximately 200 pedestrians per day, on average (see Section IV.D, Transportation and Circulation, for empirical data collected on use of the segment).

As part of the project, a promenade up to 18 feet in width and approximately 160 feet in length (consisting of a total of approximately 3,735 square feet) would be developed along the eastern side of the museum, connecting Natoma and Howard Streets. This promenade would provide a new connection between the two streets, enhancing mobility in the area. Therefore, after development of the SFMOMA Expansion, pedestrians traveling between the SFMOMA parking garage and Third Street could use Minna Street, during museum hours could walk through the museum (between Third Street and Natoma Street) without needing to enter the galleries that require an admission fee, or could use the new promenade and walk via Howard Street. Therefore, the conveyance of the land underlying the Hunt Street segment to SFMOMA would not preclude the provision of sufficient pedestrian movement space. Other less-than-significant physical impacts related to pedestrian access and circulation are discussed in Section IV.D.

East SoMa Area Plan

The Fire Station Relocation and Housing Project site at 935 Folsom Street is located within the boundaries of the East South of Market (SoMa) Area Plan. The Plan area is irregularly shaped and is generally bounded by Mission Street and Folsom Street on the north; The Embarcadero on the east; Townsend Street, Harrison Street, and Mission Creek Channel on the south; and Seventh Street and Fourth Street on the west (see Figure III-1). The East SoMa Area Plan is one of four neighborhood plans that were developed or updated as part of the Eastern Neighborhoods planning process. The

Eastern Neighborhoods effort was designed to guide land use change in four of the City's eastern neighborhoods in a way that would foster the development of vibrant mixed-use neighborhoods while stabilizing the conversion of industrial land and encouraging the production of affordable housing in appropriate locations. The East SoMa Area Plan rezoned the project site from a Residential/Service Mixed Use (RSD) land use district to a Mixed Use Residential (MUR) land use district; it also changed height controls from a split 40-X/85-B Height and Bulk district to a 45-X district on the southern portion of the project site facing Shipley Street and an 85-X district on the northern portion of the site facing Folsom Street. These zoning controls are discussed in more detail below, under "San Francisco Planning Code." The Planning Code describes the MUR district as an area that "serves as a significant housing opportunity area between the higher-density Yerba Buena area and the low-scale, light industrial area of Western SoMa" and that will "continue to emphasize residential [uses] as a required component of all new development."

The East SoMa Area Plan is intended to accomplish the following goals:

- Encourage an appropriate mix of uses.
- Retain and promote businesses and organizations that contribute to the diversity of the neighborhood.
- Encourage more neighborhood-serving businesses.
- Attract jobs for local residents.
- Encourage a mix of incomes in renter- and owner-occupied housing.
- Increase affordable housing opportunities.
- Improve the character of streets and encourage pedestrian safety.
- Improve community facilities and enhance open spaces.
- Offer a variety of transportation options.

The proposed Fire Station Relocation and Housing Project would be generally consistent with the policy initiatives of the East SoMa Area Plan in that the project would result in redevelopment of the site with a mixture of uses (a fire station and a multi-family residential building containing up to 13 units) in a way that is compliant with the Planning Code. Almost half of the residential units would be two-bedroom units, which would contribute to the neighborhood's supply of family housing. Chapter 7 (Community Facilities) of the East SoMa Area Plan does not specifically address the provision of fire stations. However, the proposed fire station would provide the neighborhood with an essential community service (Objective 7.1).

The Fire Station Relocation and Housing Project could conflict with the specific policies listed below in the East SoMa Area Plan:

Policy 1.1.10: While continuing to protect traditional PDR [generally, industrial] functions that need large, inexpensive spaces to operate, also recognize that the nature of PDR businesses is evolving gradually so that their production and distribution activities are becoming more integrated physically with their research, design and administrative functions.

The proposed project would result in the demolition of the production, distribution, and repair (PDR) building located at 935 Folsom Street (formerly used for a commercial laundry and later as an apparel sewing factory). However, the building has been vacant since 2003 and does not contain a PDR tenant. In addition, the site is designated MUR (Mixed-Use Residential), in acknowledgement of the evolution of the neighborhood from a primarily PDR area to a residential mixed-use neighborhood. In the context of changes to East SoMa's land use composition and the zoning of the site, and the relatively small size of the existing PDR structure (18,210 gross square feet), the demolition of the building would not result in a substantial conflict with Policy 1.1.10 and no significant environmental impact would result.

Policy 1.5.2: Reduce potential land use conflicts by carefully considering the location and design of both noise generating uses and sensitive uses in the East SoMa.

The Fire Station Relocation and Housing Project would place a noise-generating use (fire station) next to new and existing noise-sensitive uses (housing). However, as discussed in Section IV.E, Noise, the fire station would not expose adjacent residential uses (including the proposed housing project) to unacceptable noise levels. Therefore, the project would not conflict with Policy 1.5.2.

Policy 3.1.9: Preserve notable landmarks and areas of historic, architectural or aesthetic value, and promote the preservation of other buildings and features that provide continuity with past development.

Policy 8.2.1: Protect individually significant historic and cultural resources and historic districts in the East SoMa Area Plan from demolition or adverse alteration.

The proposed Fire Station Relocation and Housing Project would result in the demolition of the vacant industrial/commercial structure located at 935 Folsom Street. Based on an Historic Resources Evaluation Response prepared by the San Francisco Planning Department, the building, although not individually significant and not located in an historic district, is eligible for listing on the California Register of Historical Resources (and is considered a historic resource pursuant to CEQA) due to its association with development of the SoMa neighborhood after the 1906 earthquake and because it was designed by a notable local architect.[2] Therefore, demolition of the building could conflict with policies 3.1.9 and 8.2.1. Associated physical environmental impacts are discussed in Section IV.C, Cultural Resources.

SAN FRANCISCO PLANNING CODE

The San Francisco Planning Code (Planning Code), which incorporates the City's Zoning Maps, implements the General Plan and governs permitted uses, densities, and configurations of buildings within the City. Permits to construct new buildings (or to alter and demolish existing buildings) may not be issued unless: 1) the proposed project conforms to 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.

[2] *Historic Resources Evaluation Response, Case No. 2006.0241E*, San Francisco Planning Department, April 30, 2009. This document is available as Appendix B of this EIR and at the Planning Department in Case File No. 2009.0291E.

The following section discusses the land use districts and use, bulk, height, and other regulations associated with each project site. Figure III-2 and Figure III-3 show the land use and bulk/height districts on the project sites.

The relationship of the proposed projects to regulations in the Planning Code pertaining to wind patterns (Section 148) and shadow patterns (Sections 146, 147, and 295) is discussed in Section IV.H, Wind and Shadow.

SFMOMA Expansion Site

This section describes the key development regulations in the Planning Code that pertain to the SFMOMA Expansion site.

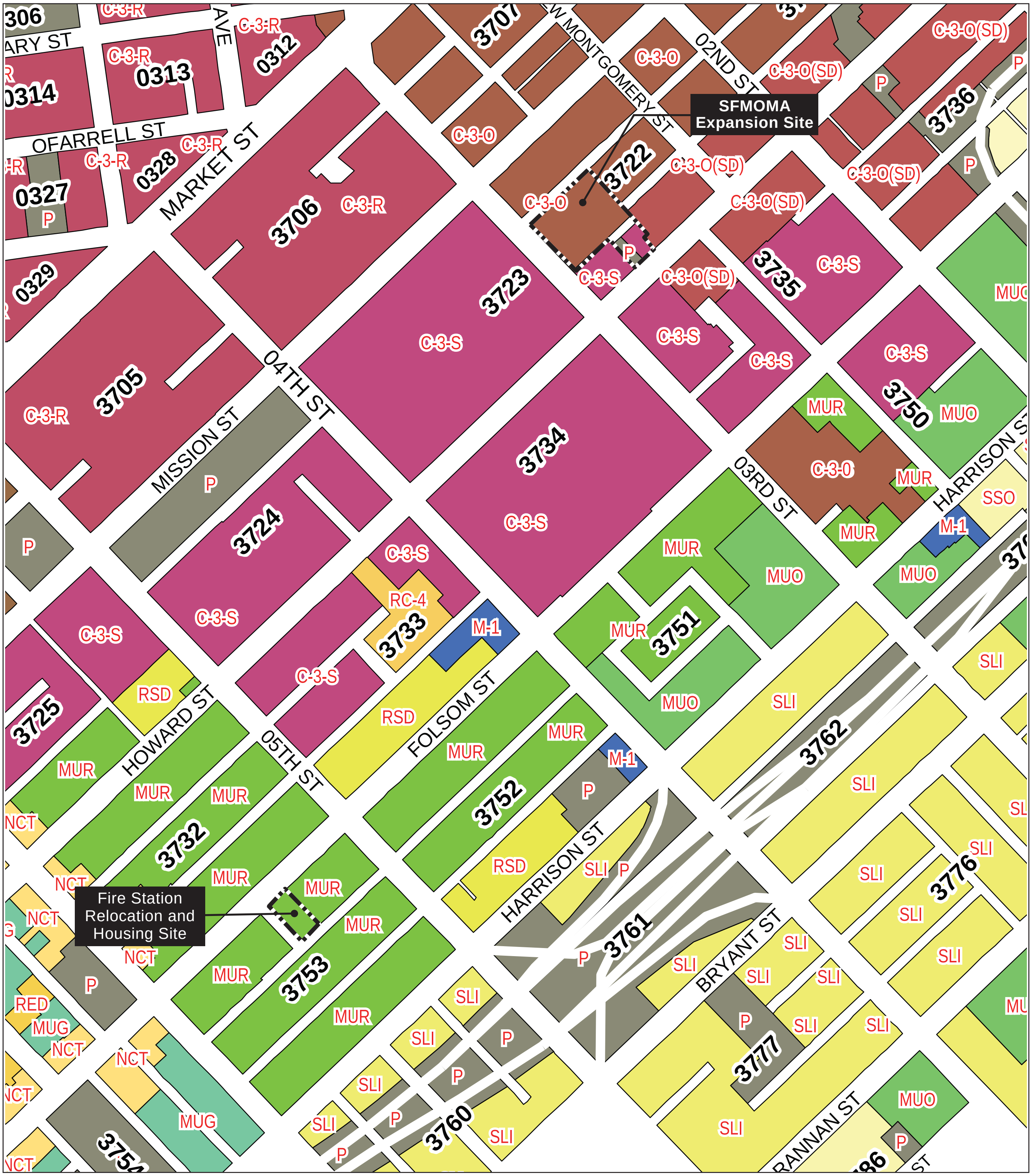
Use Districts. The SFMOMA Expansion site is located within three different primary use districts. The existing museum (151 Third Street) is located within the C-3-O (Downtown Office) Use District; the Heald Building (670 Howard Street) is located within the C-3-S (Downtown Support) Use District; and Fire Station No. 1 (676 Howard Street) is located within the P (Public) Use District. Half of Hunt Street (as divided by its centerline) is located within the C-3-O District; the other half is located within the C-3-S and P Use Districts. The intent of these districts and the consistency of the proposed SFMOMA Expansion with the specific land use controls associated with each district are discussed below.

The C-3-O (Downtown Office) District is intended to protect and encourage the growth of Downtown San Francisco as a business and employment center that is dense and located in close proximity to transit. According to Section 210.3 of the Planning Code, in the District "office development is supported by some related retail and service uses within the area, with inappropriate uses excluded in order to conserve the supply of land in the core and its expansion areas for further development of major office buildings." Arts activities, including museums, are principally permitted uses in the C-3-O district (Section 227 (p)) at a base floor area ratio (FAR) density of 9:1. Associated uses that would be developed as part of the SFMOMA Expansion, including administrative and art storage space, would be considered accessory to the principal arts activity use, as defined by Section 204, and would also be permitted in the C-3-O District. The museum's bookstore and restaurant are also principally permitted uses in the C-3-O District.

According to Section 210.3 of the Planning Code, the C-3-S (Downtown Support) District "accommodates near the intensive downtown core areas important supporting functions such as wholesaling, printing, building services, secondary office space and parking. It also contains unique housing resources." The Planning Code identifies this district as an opportunity area for "major developments of new uses covering substantial areas." Arts activities, including museums, are permitted uses in the C-3-S District (Section 227 (p)) at a base FAR of 5:1. Associated uses that would be developed as part of the SFMOMA Expansion, including administrative and art storage space, would be considered accessory to the principal arts activity use, as defined by Section 204, and would also be permitted in the C-3-S District.

The P (Public) District applies to land that is owned by a governmental agency and contains a public use. According to Section 234 of the Planning Code, the "purpose of designating such land as a P District on the Zoning Map is to relate the Zoning Map to actual land use and to the Master Plan with respect to such land." As part of the project, the Fire Station No. 1 property (676 Howard Street) would be rezoned from P to C-3-S because SFMOMA is not owned by a government agency and thus cannot expand onto a property in a Public Use District. Therefore, after project implementation, and attendant rezoning (as proposed), the SFMOMA Expansion site would comprise two use districts: C-3-O and C-3-S, which would allow for development of new museum uses.

Height and Bulk Districts. The City's height and bulk districts are intended to serve a variety of urban design purposes. Generally, these height and bulk districts seek to relate the scale of new development to existing development, in order to prevent the new development from overwhelming or dominating the City's skyline. The regulation of height and bulk is also intended to promote harmony in the visual relationships and transitions between new and existing development. The site is located in two different height and bulk districts (see Figure III-3). The existing museum and the northern half of Hunt Street are located within the 500-I Height and Bulk District



Project Sites

USE DISTRICTS

P	Public

RESIDENTIAL

RC-4	RC-4 = Commercial Combined/High Density

MIXED-USE

RED	Residential Enclave
RSD	Residential/Service
SLI	Service/Lt. Industrial
SSO	Service/Secondary Office

COMMERCIAL

C-3-O	Downtown - Office
C-3-O(SD)	Downtown - Office (Special Development)
C-3-R	Downtown - Retail
C-3-S	Downtown - Support
M1	Light Industrial
NCT	Neighborhood Commercial Transit Cluster
MUG	Mixed Use - General
MUR	Mixed Use - Residential
MUO	Mixed Use - Office
3722	Block Number

N

0 250 500

FEET

SOURCES: CITY & COUNTY OF SAN FRANCISCO; LSA ASSOCIATES, INC., 2010.

FIGURE III-2

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Zoning Map

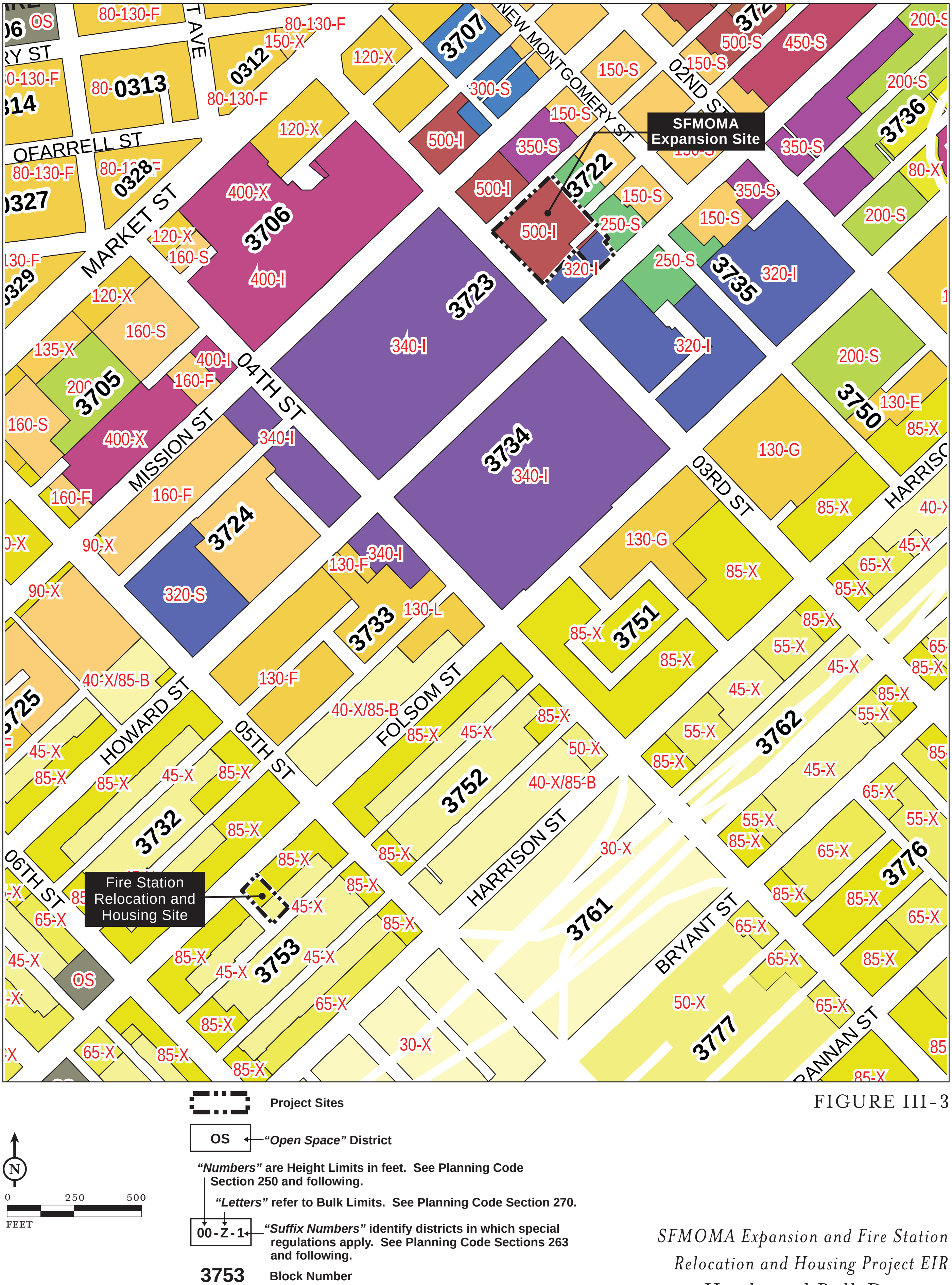


FIGURE III-3

SOURCES: CITY & COUNTY OF SAN FRANCISCO; LSA ASSOCIATES, INC., 2010.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR
Height and Bulk Districts

(establishing a 500-foot height limit, with limitations on maximum bulk above 150 feet). The Heald Building and Fire Station No. 1 sites (at 670 and 676 Howard Street, respectively) and the southern half of Hunt Street are within the 320-I Height and Bulk District (establishing a 320-foot height limit, with limitations on maximum dimensions above 150 feet). The project would meet all height limits, but would require a bulk exception for Floors 8 and 9, which would have a maximum horizontal dimension of 347 feet and a maximum diagonal dimension of 355 feet, exceeding the limit of 170 feet horizontal and 200 feet diagonal. Therefore, the project would require a bulk exception pursuant to Section 309 of the Planning Code.

Street Trees and Street Design. The purpose of Section 138.1 is to "establish requirements for the improvement of the public right-of-way associated with development projects, such that the public right-of-way may be safe, accessible, convenient and attractive to pedestrian use and travel by all modes of transportation consistent with the San Francisco General Plan, achieve best practices in ecological stormwater management, and provide space for public life and social interaction, in accordance with the City's "Better Streets Policy" (Administrative Code Section 98.1)." The Better Streets Policy governs the design, location, and dimensions of all pedestrian and streetscape items in the public right-of-way, including crosswalks, bulbouts, street furniture, planters, and trees. Section 138.1 requires street trees in most districts (including the C-3-O and C-3-S Districts) for projects involving: the construction of a new building; relocation of an existing building; the addition of gross floor area equal to 20 percent or more of the gross floor area of an existing building; the addition of a new dwelling unit, garage, or additional parking; or paving and repaving more than 200 feet of the front setback. One 24-inch box size street tree must be installed for each 20 feet of frontage along each street or alley, with any remaining fraction of 10 feet or more of frontage requiring an additional tree, unless a waiver is granted because inadequate sidewalk width, utilities, or driveways make installation impractical. The existing street trees on Third Street would be retained and 5 trees would be planted along the Howard Street frontage. Only a few street trees would be planted on Minna Street because most of the frontage of that street is encumbered with below-grade utilities and the loading driveway (the exact number of trees has not yet been determined). An in-lieu fee would be paid for each tree requirement waiver.

Open Space. Section 138 excludes cultural uses in C-3 Districts (including museum uses) from requirements related to the provision of public open space. However, the SFMOMA Expansion would contain indoor and outdoor open space (including the existing atrium and arcade along Third Street, a new lobby accessed off Howard Street that would be open to the public free of charge, and approximately 5,738 square feet of public plaza, terrace, and promenade space immediately east of the museum, adjacent to the ground and second floors). The existing sculpture garden (which comprises 17,250 square feet) is approximately 8 percent of the size of the museum (which comprises 225,000 square feet) and (along with the adjacent café) functions as adequate open space for museum visitors and employees. In addition, publicly-accessible open space is widely available immediately west of the site (in Yerba Buena Gardens) and elsewhere in the vicinity (privately owned, publicly accessible open spaces).

Parking and Loading. Section 151.1 establishes minimum loading and maximum parking requirements for C-3 Districts (i.e., no minimum parking requirements are established). In C-3 Districts, two off-street freight loading spaces are required for a use with gross floor area ranging from 200,001 to 500,000 square feet. As part of the project, at least two off-street loading spaces would be provided, with access from Minna and Natoma Streets. Parking for non-residential uses in C-3 Districts may not exceed 7 percent of gross floor area. No motor vehicle parking would be provided as part of the project. A minimum of 12 public bicycle parking spaces and 30 employee bicycle parking spaces would be provided (although no bike parking spaces are required for arts uses in the Planning Code).

Fire Station Relocation and Housing Project Site

This section describes the key development regulations in the Planning Code that pertain to the Fire Station Relocation and Housing Project site at 935 Folsom Street.

Use Districts. The Fire Station Relocation and Housing Project site is located within the MUR (Mixed Use Residential) Use District (see Figure III-2). According to Section 841 of the Planning Code, the MUR District is intended to serve "as a buffer between the higher-density, predominantly commercial area of Yerba Buena Center to the east and the lower-scale, mixed use service/

industrial and housing area west of Sixth Street. The MUR serves as a major housing opportunity area within the eastern portion of the South of Market area. The district controls are intended to facilitate the development of high-density, mid-rise housing, including family-sized housing and residential hotels. The district is also designed to encourage the expansion of retail, business service and commercial and cultural arts activities. Continuous ground floor commercial frontage with pedestrian-oriented retail activities along major thoroughfares is encouraged. Hotels, nighttime entertainment, movie theaters, adult entertainment and heavy industrial uses are not permitted. Office is restricted to the upper floors of multiple story buildings."

As part of the Fire Station Relocation and Housing Project, the approximately 9,000-square-foot portion of the site that would contain the relocated Fire Station No. 1 (i.e., the northern two-thirds of the site, fronting Folsom Street) would be rezoned from MUR to P, to allow for development of the fire station (which is a public building owned by a government agency). The southern third of the site would retain MUR zoning, and the residential building proposed on the southern approximately 5,400-square foot (60-foot by 90-foot) portion of the site would be permitted by Section 841 of the Planning Code.

South of Market Youth and Family Special Use District. The South of Market Youth and Family Special Use District is intended to protect and enhance the health and environment of youth and families through the implementation of policies that expand affordable housing in certain lower-density areas. The Special Use District, which encompasses the Fire Station Relocation and Housing Project site, is generally bounded by Natoma Street on the north; Fourth Street on the east; Harrison Street on the south; and Seventh Street on the west. The Special Use District requires that any project containing five or more dwelling units or in excess of 40 feet in height be subject to the Tier C affordable housing requirements of Section 319 (currently renumbered Section 419). These requirements specify that at least 22 percent of residential units be priced at affordable levels. Assuming it contains five or more units, the residential component of the Fire Station Relocation and Housing Project would comply with this requirement.

Height and Bulk Districts. The Fire Station Relocation and Housing Project site is located in two different height and bulk districts (see Figure III-3) and no height reclassification is proposed. The northern portion of the site fronting Folsom Street is located within the 85-X Height and Bulk District (establishing an 85-foot height limit with no bulk limits). The southern portion of the site fronting Shipley Street is within the 45-X Height and Bulk District (establishing a 45-foot height limit with no bulk limits). The proposed fire station and residential building would be 34 feet and 43.75 feet in height (to the roof), respectively, and thus would meet existing basic height and bulk regulations.

The project would also be subject to Section 261.1, Additional Height Limits for Narrow Streets and Alleys in RTO, NC, NCT, Eastern Neighborhoods Mixed Use, and South of Market Mixed Use Districts. This section, which is intended to protect "the intimate character" of rights-of-way 40 feet in width or narrower (and access to sunlight and air) requires that the upper floors of building frontages on such streets be set back at least 10 feet at the property line above a height equivalent to 1.25 the width of the abutting narrow street. Since Falmouth and Shipley Streets are 35 feet in width, the portion of a building on the site over 43.75 feet in height would be required to be set back by 10 feet at the property line. However, the proposed residential structure would be 43 feet, so no such setback would be required.

Street Trees and Street Design. As discussed under the "Street Tree and Street Design" discussion for the SFMOMA Expansion site, above, the purpose of Section 138.1 is to establish requirements for the improvement of the public right-of-way in accordance with the City's "Better Streets Policy." The Better Streets Policy governs the design, location, and dimensions of all pedestrian and streetscape items in the public right-of-way, including crosswalks, bulbouts, street furniture, planters, and trees. Section 138.1 requires street trees in most districts (including the MUR District but excluding the P District) for projects involving: the construction of a new building; relocation of an existing building; the addition of gross floor area equal to 20 percent or more of the gross floor area of an existing building; the addition of a new dwelling unit, garage, or additional parking; or paving and repaving more than 200 feet of the front setback. One 24-inch box size street tree must be installed for each 20 feet of frontage along each street or alley, with any remaining fraction of 10 feet or more of frontage requiring an additional tree, unless a waiver is granted because inadequate sidewalk width, utilities, or driveways make installation impractical. The trees are required to be located within a setback area or within the public right-of-way. In addition, since the site is within the Eastern Neighborhoods planning area, tree basins are required to be edged with a decorative treatment, such as pavers or cobbles, in accordance with City standards. For the portion of the site that would remain in the MUR district, the Planning Code would require that four trees be planted along the Shipley Street frontage (the 90-foot frontage would normally require five street trees, but the 10 feet of frontage remaining after the planting of four trees would not allow for an additional planting without interfering with the sight line at the corner of Falmouth and Shipley Streets). In addition, four trees would be required along the Falmouth Street frontage. However, the San Francisco Better Streets Plan prohibits the planting of street trees on sidewalks with a width of 6 feet or less, unless trees can be planted in curb extensions on the street. Since Falmouth Street adjacent to the 935 Folsom Street site has a sidewalk of less than 6 feet in width and no curb extensions are present, no trees would be required to be planted along the Falmouth Street frontage of the site.

Open Space. Section 135 requires that 80 square feet of open space be provided per residential unit, if the open space is not publicly accessible (or 54 square feet per unit if the open space is accessible to the public). Approximately 1,040 square feet of open space to serve the proposed residential uses would be provided on the site, meeting the requirement of 80 square feet of open space for each of the 13 units.

Parking. Section 151.1 establishes maximum off-street parking requirements for MUR Districts (i.e., no minimum parking requirements are established). Up to one parking space per four residential units is principally permitted under this section. Up to 0.75 space per residential unit is permitted if certain conditions are met (if, for instance, the Planning Commission finds that such increased provision of parking in large projects would further the objectives and policies of the General Plan). Up to ten parking spaces would be provided for the residential component of the project (requiring the Planning Commission to make the required findings). There are no specific maximum or minimum parking requirements in the P District. A total of 15 tandem spaces would be provided for the fire station in the P District. Section 155.5 requires one Class I bike parking space to be provided for every two dwelling units. Thus a total of seven bike parking spaces would be required as part of the proposed 13-unit residential project.

Besides the proposed rezoning of 676 Howard Street from P to C-3-S and a bulk exception, and the proposed rezoning of the approximately 9,000-square-foot portion of the Fire Station Relocation and Housing Project site from MUR to P, as discussed above, the proposed projects would not require any variances, special authorizations, or changes to the Planning Code or Zoning Map.

PRIORITY POLICIES

In November 1986, the voters of San Francisco approved Proposition M (the Accountable Planning Initiative), which added Section 101.1 to the Planning Code to establish eight Priority Policies. The Priority Policies are also included in the Introduction to the General Plan. These policies, and the sections of this EIR addressing the environmental issues associated with the policies, are:

1. *That existing neighborhood-serving retail uses be preserved and enhanced and future opportunities for resident employment in and ownership of such businesses enhanced* (see Initial Study, pages 1-27);

2. *That existing housing and neighborhood character be conserved and protected in order to preserve the cultural and economic diversity of our neighborhoods* (see Section IV.A, Land Use, and Initial Study, pages 57-59);

3. *That the City's supply of affordable housing be preserved and enhanced* (see Initial Study, pages 65-67);

4. *That commuter traffic not impede Muni transit services or overburden our streets or neighborhood parking* (see Section IV.D, Transportation and Circulation);

5. *That a diverse economic base be maintained by protecting our industrial and service sectors from displacement due to commercial office development, and that future opportunities for resident employment and ownership in these sectors be enhanced* (see Section IV.A, Land Use);

6. *That the City achieve the greatest possible preparedness to protect against injury and the loss of life in an earthquake* (see Section IV.I, Public Services, and Initial Study, pages 126-130);

7. *That landmarks and historic buildings be preserved* (see Section IV.C, Cultural Resources); and

8. *That our parks and open space and their access to sunlight and vistas be protected from development (*see Section IV.B, Aesthetics, and Initial Study, pages 54-56 and 102-104).

Prior to issuing a permit for any project which requires an EIR under CEQA, and prior to issuing a permit for any demolition, conversion, or change of use, and prior to taking any action which requires a finding of consistency with the General Plan, the City is required to find that the proposed project or legislation is consistent with the Priority Policies. As with policies in the General Plan, Priority Policies may conflict with one another, depending on the project; decision-makers, in considering whether to approve the proposed projects, would need to assess whether the projects, on balance, are consistent with the applicable Priority Policies in adopting the necessary findings.

Potential conflicts of the proposed projects in regard to land use, cultural resources, transportation and circulation, and public services associated with the Priority Policies are discussed in the relevant topical sections of this EIR. The project case reports and approval motions will contain the Planning Department's comprehensive project analysis and findings regarding consistency of the proposed projects with the Priority Policies.

ALL-HAZARDS STRATEGIC PLAN

The San Francisco All-Hazards Strategic Plan (prepared in 2008 and updated in 2009) is intended to enhance the City's ability to "deter, prevent, respond to, and recover from acts of terrorism and natural and human-caused disasters" through development of a single, common preparedness vision and strategy. The Strategic Plan identifies 20 strategic goals that are intended to realize the City's emergency management and homeland security vision, including protection of the City from terrorist attacks. A primary strategic goal is: "Develop, maintain, and sustain a citywide, comprehensive, risk-based emergency management and homeland security program."

The San Francisco Fire Department (SFFD) is a participating agency in the All-Hazards Strategic Plan. The Division of Homeland Security (DHS) of the SFFD consists of the internal management personnel within the SFFD who oversee the grant-funded projects for all federal government-sponsored Weapons of Mass Destruction/Terrorism Response Programs. DHS is responsible for ensuring compliance with the National Incident Management System, which involves collaboration among personnel from within SFFD who would prevent and manage responses to a chemical, biological, radiological, or nuclear explosion, or other act of terrorism in San Francisco. DHS reviews the U.S. Department of Homeland Security's revisions to the National Response Framework and integrates those changes through a variety of means, including planning workgroups, steering committees, and ad hoc technical specialist groups. DHS also undertakes long-term monitoring and evaluation activities to ensure that responses to security threats are effective.

The proposed relocation of Fire Station No. 1 would be generally consistent with the All-Hazards Strategic Plan in that it would allow for the SFFD to continue to respond effectively to emergency situations, including terrorist attacks. The project would not conflict with the All-Hazards Strategic Plan, and, by constructing a new facility with state-of-the-art responder technologies that is in accordance with the most current building code, would promote Strategic Goals #3 ("Ensure sufficient voice and data communications capabilities are in place to allow for effective inter-agency, multi-jurisdictional communication."), #4 ("Improve community disaster preparedness and response capabilities."), and #10 ("Improve the functional and operational capabilities of Department Operating Centers.").

SUSTAINABILITY PLAN

In 1993, the San Francisco Board of Supervisors established the Commission on San Francisco's Environment, charged with, among other things, drafting and implementing a plan for San Francisco's long-term environmental sustainability. The notion of sustainability is based on the United Nations characterization that "a sustainable society meets the needs of the present without sacrificing the ability of future generations and non-human forms of life to meet their own needs." The Sustainability Plan for the City of San Francisco was a result of community collaboration with the intent of establishing sustainable development as a fundamental goal of municipal public policy.

The Sustainability Plan is divided into 15 topical areas, including ten that address specific environmental issues (air quality; biodiversity; energy, climate change and ozone depletion; food and agriculture; hazardous materials; human health; parks, open spaces, and streetscapes; solid waste; transportation; and water and wastewater) and five that are broader in scope and cover more general environmental and non-environmental issues (economy and economic development, environmental justice, municipal expenditures, public information and education, and risk management). In addition, the Sustainability Plan contains indicators designed to create a base of objective information on local conditions and to illustrate trends toward or away from sustainability. Although the Sustainability Plan became official City policy in July 1997, the Board of Supervisors has not committed the City to perform all of the actions addressed in the Plan. The Sustainability Plan serves as a blueprint, with many of its individual proposals requiring further development and public comment.

One way the energy provisions of the Sustainability Plan are promoted is through the implementation of the San Francisco Green Building Ordinance and the Municipal Green Building Ordinance. New private-sector residential buildings, new non-residential buildings larger than 5,000 square feet, and major renovations to areas larger than 25,000 square feet in existing buildings (or mechanical, electrical, or plumbing upgrades to areas larger than 25,000 square feet) are required to conform to energy conservation standards specified by the San Francisco Building Code, including the San Francisco Green Building Ordinance. The measures required by the San Francisco Green Building Ordinance are intended to reduce greenhouse gas emissions associated with new construction and rehabilitation activities, increase energy efficiency, and realize other environmental gains. The SFMOMA Expansion would be subject to the San Francisco Green Building Ordinance. Moreover, the proposed residential structure (part of the Fire Station Relocation and Housing Project) would be considered a "Group R" (residential) building and would be subject to the ordinance. In addition, under the Municipal Green Building Ordinance, all municipal projects (new construction and major renovations over 5,000 square feet) are required to achieve Leadership in Energy and Environmental Design (LEED) Silver certification from the U.S. Green Building Council or equivalent.[3] Therefore, the proposed new fire station structure would require LEED silver certification or its equivalent. Compliance with the San Francisco Green Building Ordinance and Municipal Green Building Ordinance would reduce the use of energy by the proposed projects. The proposed projects, by intensifying land uses in neighborhoods that are well-served by transit and by incorporating energy efficiency measures, would not obviously conflict with the Sustainability Plan.

CLIMATE ACTION PLAN

In February 2002, the San Francisco Board of Supervisors passed the Greenhouse Gas Emissions Reduction Resolution (Number 158-02), committing the City and County of San Francisco to a greenhouse gas (GHG) emissions reductions goal of 20 percent below 1990 levels by the year 2012. The resolution also directs the San Francisco Department of the Environment, the San Francisco Public Utilities Commission (SFPUC), and other appropriate City agencies to complete a local action plan targeting GHG emission reduction activities. In September 2004, the San Francisco Department of the Environment and the SFPUC published the Climate Action Plan for San Francisco: Local Actions to Reduce Greenhouse Emissions (Climate Action Plan).

The Climate Action Plan examines the causes of global climate change and human activities that contribute to global warming and provides projections of climate change impacts on California and San Francisco based on recent scientific reports; presents estimates of San Francisco's baseline GHG emissions inventory and reduction targets; describes recommended emissions reduction actions in the key target sectors – transportation, energy efficiency, renewable energy, and solid waste management – to meet stated goals by 2012; and presents next steps required over the near term to implement the Climate Action Plan. Although the Board of Supervisors has not formally committed the City to perform the actions addressed in the Climate Action Plan, and many of the actions require further development and commitment of resources, the Climate Action Plan serves as a blueprint for GHG emission reductions, and several actions are now in progress.

[3] LEED is a green building certification system which provides third-party verification that a building or community was designed and built using strategies intended to improve performance in metrics such as energy savings, water efficiency, carbon emissions reduction, improved indoor environmental quality, and stewardship of resources. Buildings can qualify for four levels of certification based on the number of "points" a project receives for incorporating green design features: Certified = 40-49 points; Silver = 50-59 points; Gold = 60-79 points; and Platinum = 80 points and higher.

As described above under "Sustainability Plan," compliance with the San Francisco Green Building Ordinance and Municipal Green Building Ordinance would reduce the use of energy by the proposed projects. The proposed projects, by intensifying land uses in neighborhoods that are well-served by transit and by incorporating energy efficiency measures, would not obviously conflict with the Climate Action Plan. Please refer to Section IV.G, Greenhouse Gas Emissions, for additional information related to the projects' potential impacts on climate change.

BETTER STREETS PLAN

The Better Streets Plan, which was signed by the Mayor on December 16, 2010, describes a vision for the future of San Francisco's pedestrian environment and involved adoption of a set of City-wide streetscape and pedestrian policies and guidelines to help accomplish this vision. The Planning Department, Department of Public Works, San Francisco Metropolitan Transportation Agency, and San Francisco Public Utilities Commission were joint project sponsors of the Plan on behalf of the City and County of San Francisco. The Better Streets Plan seeks to balance the needs of all City street users. The Plan identifies goals, objectives, policies, and design guidelines, as well as future strategies to improve the pedestrian realm in San Francisco. Pedestrian areas mainly include sidewalks and crosswalks and, in some instances, portions of roadways. Major concepts covered in the Better Streets Plan range from increased pedestrian safety and accessibility features to improved ecological performance of streets and streetscape greening.

The proposed projects would not physically remove travel-ways on major pedestrian or vehicle thoroughfares adjacent to the project sites.[4] The SFMOMA Expansion could promote Policy 7.2 of the Plan, which states: "Increase connectivity and access across barriers to pedestrian travel." As part of the project, the City would vacate the remaining 3,500-square-foot segment of Hunt Street on the project site and convey the underlying land to SFMOMA (as part of an exchange for a portion of the

[4] As discussed in Section IV.D, Transportation and Circulation, SFMOMA, MTA, and the Department of Public Works are currently evaluating the construction of a sidewalk extension on Third Street in front of the existing museum entrance. The sidewalk extension would be 5 to 6 feet in width (the parking lane is about 7 feet wide) and about 85 feet in length, or as determined by MTA and the Department of Public Works, and would be aligned with the mid-block crosswalk. As part of this improvement, a passenger zone would be provided to the north and south of the sidewalk extension. The project sponsor would be required to fund the design and construction of the improvement. Refer to Improvement Measure TR-1 in Section IV.D for additional detail.

Fire Station Relocation and Housing Project site and a new fire station on that site). The project would thus preclude the segment of Hunt Street on the site from being developed into a connection with Natoma Street. However, the Hunt Street segment is of little use as a pedestrian alley because it is landlocked (the street does not connect to any other public street). It also is subject to low pedestrian usage levels (see Section IV.D, Transportation and Circulation), and primarily provides employee access to the W Hotel. As part of the project a promenade up to 18 feet in width and approximately 160 feet in length (consisting of a total of approximately 3,735 square feet) would be developed along the eastern boundary of the site that would connect Natoma and Howard Streets. This new promenade would increase mobility in the area and remove an existing barrier to travel between Natoma and Howard Streets. In the context of this proposed connection between the two streets, vacation of the segment of Hunt Street and conveyance to SFMOMA would not result in a significant physical environmental impact and would not obviously conflict with the Better Streets Plan.

As discussed under "Planning Code," above, the Better Streets Plan prohibits the planting of street trees on sidewalks with a width of 6 feet or less, unless trees can be planted in curb extensions on the street. Since Falmouth Street adjacent to the site has a sidewalk of less than 6 feet in width and no curb extensions are present, or can be installed because of the need to reserve curb-side space for emergency vehicle and equipment testing, no trees would be required to be planted along the Falmouth Street frontage of the site. In addition, no trees would be planted along the Folsom Street frontage of the site to allow for emergency vehicle ingress and egress. Because tree plantings would be excluded to allow for safe fire station operations, this lack of street trees on Folsom Street would not conflict with the Better Streets Plan (which allows for deviations from targeted standards in order to respond to localized street conditions).

TRANSIT FIRST POLICY

The City of San Francisco's Transit First policy, adopted by the Board of Supervisors in 1973 and contained within Section 8A.115 of the City Charter, was developed in response to the damaging impacts over previous decades of freeways on the City's urban character. The policy is aimed at restoring balance to a transportation system long dominated by the automobile, and improving overall mobility for residents and visitors whose reliance chiefly on the automobile would result in severe transportation deficiencies. It encourages multi-modalism, the use of transit, and other alternatives to the single-occupant vehicle as modes of transportation, and gives priority to the maintenance and expansion of the local transit system and the improvement of regional transit coordination.

The project sites are located in close proximity to numerous transit routes and are easily accessible by bike, and the use of alternative transportation by project employees and residents is expected to be high. Therefore, the projects would not obviously conflict with the Transit First Policy.

BICYCLE PLAN

In August 2009, the Board of Supervisors approved the San Francisco Bicycle Plan. The Bicycle Plan includes a citywide bicycle transportation plan and implementation of specific bicycle improvements identified within the Plan. The Bicycle Plan includes objectives and identifies policy changes that would enhance the City's bicycle environment. It also describes the existing bicycle route network (a series of interconnected streets in which bicycling is encouraged), and identifies gaps within the citywide bicycle route network that require improvement. There is currently an eastbound bicycle lane on Folsom Street that extends between Fourteenth Street and The Embarcadero (Bicycle Route 30).

The Bicycle Plan identifies short-term and long-term bicycle improvement projects. Identified short-term improvements in the vicinity of the project sites include the development of bike lanes along Second Street from King Street to Market Street and along Fifth Street from Market Street to Townsend Street. No changes are proposed to the existing eastbound bicycle lane along Folsom Street. The proposed projects would not physically change the travel lanes of streets in the vicinity of the sites and would not obviously conflict with the Bicycle Plan (see Section IV.D, Transportation and Circulation, for a discussion of potential operational effects of the projects on bicycle circulation).

YERBA BUENA CENTER REDEVELOPMENT PLAN

The SFMOMA Expansion site is located within the former Yerba Buena Center Redevelopment Plan area. The Redevelopment Plan (which expired on January 1, 2011) was originally adopted in 1966, and was amended several times since then. The Plan area was generally bounded by Market Street on the north; Second Street on the east; Harrison Street on the south; and Fourth Street on the west (see Figure III-1). The Plan was intended to stimulate and attract private investment in the area and assist in the relocation of businesses and residences that may be adversely affected by the Plan. The main objective of the Plan was to "restore a long blighted area to economic health, arrest its adverse effects on surrounding areas and make it a source of pride to persons residing and working in San Francisco or visiting the city." Other specific objectives also outlined in the Plan include the development of a better connection between the Union Square and Yerba Buena shopping nodes, and the expansion of arts and cultural facilities in the area.

The existing SFMOMA was developed pursuant to a San Francisco Redevelopment Agency Disposition and Development Agreement (DDA) that remains in effect. As part of the project, the expanded portion of the museum would extend along a north/south axis from Minna Street to Howard Street, and would rise to a maximum height of approximately 200 feet (plus rooftop mechanical, elevator, and stair penthouses up to 20 feet high), requiring an amendment to the DDA (which limits the maximum building height to 147 feet).

The DDA specifies: "The maximum height of any building between the southerly line of Minna Street and the extension of the northerly line of Natoma Street shall not breach a plane defined as though extending from the north-south center line of CB-2 [a point shown on an attached diagram] at street level through a line 80 feet above the easterly line of Third Street. The objective of this requirement is to allow increased development away from the street while maintaining a substantial view of the Telephone Company [Pacific Telephone Building] tower beyond." The proposed SFMOMA Expansion would exceed the maximum building height specified in the DDA, but would not breach the view plane designed to protect views of the Pacific Telephone Building from Yerba Buena Gardens. The less-than-significant effects to this and other views in the vicinity of the site are discussed in Section IV.B, Aesthetics.

Since the Redevelopment Plan expired, the San Francisco Planning Department and Planning Commission are the primary reviewing and approving agencies for development proposals within the Plan boundaries, although the Redevelopment Agency retains jurisdiction over implementation of the DDA.

TRANSBAY REDEVELOPMENT PLAN

The Transbay Redevelopment Project Area, which was established in 2005, encompasses approximately 55 acres and is generally bounded by Mission, Main, Folsom, and Second Streets. Neither the SFMOMA Expansion site nor the Fire Station Relocation and Housing Project site is located within the Plan area (although the SFMOMA Expansion site is located approximately 600 feet to the west of the Plan area). The Plan area contains the site of the demolished Transbay Terminal and access ramps, as well as a number of vacant and underutilized properties and older buildings, many of which are substantially deteriorated and/or constructed of unreinforced masonry (and thus susceptible to earthquake damage). The Redevelopment Plan is intended to address these conditions. The Plan sets forth various projects and programs that could be funded with tax increment dollars or by other mechanisms over the life of the Redevelopment Plan.

The goals of the Transbay Redevelopment Plan include the development of a lively, well-designed urban community that encourages the use of alternative modes of transportation and provides financial support to a new multi-modal Transbay Terminal. In addition, the plan is also intended to link the neighborhood to surrounding areas and the waterfront.

The proposed projects are not located within the Transbay Redevelopment Plan area, and would not obviously conflict with any of the goals of the Transbay Redevelopment Plan. The development of an expanded SFMOMA could support the goals of the Redevelopment Plan "to create a livable community that is attractive to urban dwellers."

DRAFT TRANSIT CENTER DISTRICT PLAN

The draft Transit Center District Plan is a comprehensive plan for the southern portion of San Francisco's downtown Financial District. The Plan area is roughly 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 – immediately adjacent to the SFMOMA Expansion site (see Figure III-1). The Transit Center District Plan (which encompasses approximately 145 acres) is intended to focus new growth in close proximity to the City's greatest concentration of public transit. The draft Plan establishes a number of goals that include increasing the amount of allowable development in the transit-rich downtown core, while improving public amenities; modifying the circulation network to meet the needs and goals of a dense transit-oriented district; providing additional open space; implementing policies to preserve existing historic structures; and enhancing sustainability. The proposed Transit Center District Plan would result in new planning policies and controls for: land use; urban form, including building height and design; street network modifications and public realm improvements; historic preservation; and district sustainability, including the potential creation of a district-wide combined heat and power (cogeneration) system, the enhancement of green building standards in the district, and reductions in potable water use and stormwater runoff. The Transit Center District Plan would allow for height limit increases in subareas comprising multiple parcels or blocks within the Plan area. It would also include one or more programs to support the Transit Center Program and other necessary public infrastructure and amenities in the area through the implementation of one or more new fees or assessments that would be applied to new development. The proposed Transit Center District Plan would result in comprehensive plan amendments and implementing mechanisms, including General Plan, Planning Code and Zoning Map amendments, as necessary.

The key objectives of the Transit Center District Plan are:

- Build on the Urban Design Element and Downtown Plan, and analyze modifications to the form of downtown based on new Transbay and Rincon Hill plans and recent development.
- Capitalize on major transit investment with an appropriate land use response in the downtown core.

- Set guidelines and standards to build a high-quality public realm and provide public amenities.
- Generate more revenue for the Transbay Transit Center project and other public improvements.

No major transportation, open space, or infrastructure features are proposed adjacent to the SFMOMA Expansion site as part of the Transit Center District Plan. However, a new park is proposed at the northeast quadrant of Howard and Second Streets. In addition, the western two-thirds of the segment of Natoma Street between First and Second Streets would be converted to a pedestrian-only street, with intensified ground-floor retail space and design features to improve the pedestrian experience.

As part of the Transit Center District Plan, the entire Plan area (including blocks adjacent to the SFMOMA Expansion site) would be rezoned to C-3-O (SD) and the maximum 18:1 FAR limit on development in the zone would be eliminated. Development of the SFMOMA Expansion would expand museum space at the periphery of the Transit Center District Plan area and would function as a neighborhood amenity. The project would be transit-oriented by nature of its location and lack of on-site parking, and would increase space devoted to gallery and cultural uses on the edge of an arts district.
In addition, the project would include a promenade up to 18 feet in width and approximately 160 feet in length (consisting of a total of approximately 3,735 square feet) along the eastern boundary of the site. This promenade would connect to Natoma Street, Howard Street, and the public plaza adjacent to the museum, and would support the vision for Natoma Street outlined in the Transit Center District Plan by improving connectivity and drawing increased pedestrian traffic through the area. Therefore, the proposed SFMOMA Expansion would not obviously conflict with the Transit Center District Plan.

SOUTH OF MARKET REDEVELOPMENT PLAN

The South of Market Redevelopment Plan was established following the Loma Prieta Earthquake (which occurred in October 1989) in order to promote "the purposes of repairing, restoring, and/or replacing buildings and physical infrastructure damaged by the earthquake, and to provide economic development assistance to neighborhood-serving businesses and retail establishments." In 2005, the

Redevelopment Plan was amended to allow for redevelopment activities to go beyond post-earthquake rebuilding in order to promote economic development, affordable housing, and the aesthetic quality of the physical environment. The Plan area, which comprises approximately 70 acres and encompasses the Fire Station Relocation and Housing Project site at 935 Folsom Street, is roughly bounded by Stevenson, Mission, and Natoma Streets on the north; Fifth Street on the east; Harrison Street on the south; and Seventh Street on the west. The Redevelopment Plan is focused on the Sixth Street corridor (which is characterized by older residential and commercial buildings, and a preponderance of single room occupancy hotels). Recent redevelopment activities have consisted of streetscape and alleyway improvements along Sixth Street and the development of affordable housing in the area.

The Redevelopment Plan contains goals in five categories: Housing; Business and Jobs; Community Quality of Life; Transportation and Parking; and Neighborhood Development and Land Use. In general, the proposed Fire Station Relocation and Housing Project would be consistent with these goals, in that it would result in the development of community facilities (i.e., a new fire station) and increase the area's supply of new infill housing, including affordable housing.

The project could, however, conflict with Goal E4: "Preserve historically and/or architecturally significant buildings that contribute to the area's identity, give visual orientation, and impart a sense of continuity with San Francisco's past." The Fire Station Relocation and Housing Project would result in the demolition of the vacant commercial/industrial building structure located at 935 Folsom Street, which, although not individually significant, is considered eligible for listing on the California Register of Historical Resources (and is considered a historic resource pursuant to CEQA) due to its association with development of the SoMa neighborhood after the 1906 earthquake and because it was designed by a notable local architect.[5] Associated physical environmental impacts are discussed in Section IV.C, Cultural Resources.

[5] *Historic Resource Evaluation Response, 935 Folsom Street*, San Francisco Planning Department, April 24, 2009. This document is available as Appendix B of this EIR and at the Planning Department in Case File No. 2006.0241E.

DRAFT WESTERN SOMA COMMUNITY PLAN

Neither project site is located within the boundaries of the Western SoMa Community Plan (currently in draft form), but the Fire Station Relocation and Housing Project site is located approximately 300 feet west of the nearest boundary of the proposed Plan area. The Plan area is irregularly shaped and consists of two connected areas: one generally referred to as "north of Harrison Street," roughly bounded by Thirteenth Street to the east, Bryant Street to the south, Seventh Street to the west, and Minna Street (an alleyway between Mission and Howard Streets) to the north, and the second area, generally referred to as "south of Harrison Street," roughly bounded by Townsend Street to the south, Fourth Street to the east, Harrison Street to the north and Seventh Street to the west (see Figure III-1). The Western SoMa Community Plan would amend the Western SoMa Special Use District (SUD) and would implement new planning policies and controls for land use, urban form, building height and design, the street network, and open space. In general, the goal of the Western SoMa Community Plan is to maintain the mixed-use character of the Plan area and preserve existing housing, while encouraging new residential and resident-serving uses (including affordable housing) within the proposed Residential Enclave Districts north of Harrison Street. Larger parcels south of Harrison Street would be targeted for local- and region-serving commercial uses. The Western SoMa Community Plan is in draft form and is currently undergoing environmental review.

The key planning principles which guide the land use policies in the Draft Plan are:

- Mitigate to the fullest extent possible neighborhood impacts resulting from new development.
- Stabilize the neighborhood against speculative land use proposals and developments.
- Promote safety in all areas of the public realm (e.g., streets, sidewalks, parks, etc.).
- Maintain and encourage the existing community cultural diversity.
- Proposed new land use development shall primarily serve the needs of existing residents and businesses. Citywide and regional needs are subordinate to existing local needs.
- Maintain and promote diversity (e.g., day/night, living/working, spectrum of uses, etc.) of neighborhood land uses.

- Provide clear and simple community planning policies and zoning recommendations.
- Generally maintain the existing scale and density of the neighborhood.
- Promote environmental sensitivity in new development projects.
- Encourage nurturing characteristics and maximize opportunities for seniors, families, youth and children.
- Develop and maintain local accountability and monitoring mechanisms.
- Provide periodic reassessment of the community plan.
- Maximize general environmental quality and health.

In general, the proposed Fire Station Relocation and Housing Project would not obviously conflict with future implementation of the Western SoMa Community Plan. The project would result in the development of an essential community service (a fire station) and housing on the 935 Folsom Street site, which is currently occupied by a vacant industrial/commercial building outside of the draft Plan area boundaries. The Fire Station Relocation and Housing Project would not change the basic urban fabric of the vicinity and would increase the area's supply of housing without disrupting the street and block patterns that characterize the adjacent Western SoMa neighborhood and its environs. The proposed fire station along Folsom Street would be pedestrian-scaled (34 feet in height) and, although it would generate sporadic periods of motor vehicle activity (when the station responds to emergencies), would not conflict with policies promoting the improvement of the Folsom Street streetscape into an environment that is more comfortable for pedestrians and that encourages non-motorized forms of transportation. The fire station would be built immediately adjacent to the sidewalk and would contribute to an establishment of a continuous street wall along Folsom Street. Please refer to Section IV.D, Transportation and Circulation, for a discussion of the consistency of the project with Policy 4.8.5 ("Reduce roadway conflicts between transit vehicles, bicycles and pedestrians."), Policy 4.18.1 ("Develop Folsom Street as a priority public transit corridor."), Policy 4.23.3 ("Develop Folsom Street as a pedestrian-oriented transit corridor."), and other applicable transportation-related policies.

DRAFT CENTRAL CORRIDOR PROJECT

The Planning Department is currently preparing a plan for the Central Corridor Project, which seeks to integrate past and current land use plans around the Central Subway Project, which will run under Fourth Street. The plan area for the Central Corridor Project is bounded by Market Street on the north, Third Street on the east, Townsend Street on the south, and Fifth Street to the west (see Figure III-1). The planning effort is intended to provide guidance to enhance the public realm, establish a sense of place, and promote economic development, enhanced circulation, and the development of additional housing and open spaces. Outreach for the project was launched in February 2011. As of the date of publication of this EIR, the planning effort for the Central Corridor Project is embryonic. The proposed projects, which would intensify land uses in the vicinity of the Central Subway Project, would not be expected to conflict with the Central Corridor Project planning effort.

SUMMARY

The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project are generally consistent with the relevant planning documents described in this chapter. The projects, taken together, would expand an important cultural facility in downtown San Francisco, result in the construction of a larger, seismically sound, new fire station which would serve surrounding dense urban neighborhoods, and contribute to the neighborhood’s housing stock. The projects would be generally consistent with General Plan policies relating to the enhancement and elevation of art in the City (including policies in the Arts Element) and the provision of adequate fire fighting capabilities. The project would be consistent with the Planning Code after the proposed rezonings listed in Chapter II, Project Description, occur. The staff report for the Planning Commission will evaluate the consistency of the proposed projects with General Plan policies and applicable Planning Code regulations.

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ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

This chapter contains an analysis of each issue that was identified in the Initial Study as a topic for analysis in the SFMOMA Expansion and Fire Station Relocation and Housing Project EIR. Sections A through I of this chapter describe the environmental setting of the project sites related to each specific environmental issue evaluated in the EIR and the impacts that are expected to result from implementation of the projects. Mitigation measures to reduce potential impacts are identified, where appropriate. The conclusions of the previously-prepared Initial Study are summarized in the topical sections contained in this chapter, as needed, for informational purposes.

The project sponsor, SFMOMA, filed an application in 2009 for the environmental evaluation of the proposed projects. Based on the Initial Study published on October 27, 2010 (Appendix A), the San Francisco Planning Department determined that an EIR is required. The Initial Study concluded that many of the physical environmental effects of the proposed projects would be less than significant, or that mitigation measures, agreed to by the project sponsor and required as a condition of project approval, would reduce significant impacts to a less-than-significant level. CEQA does not require further assessment of the projects' less-than-significant impacts, which fall into the following topical areas: Population and Housing; Paleontological Resources; Recreation; Utilities and Service Systems; Biological Resources; Geology and Soils; Hydrology and Water Quality; Hazards/Hazardous Materials; Minerals/Energy Resources; and Agriculture and Forestry Resources. However, the Initial Study found potentially significant project-specific effects and/or cumulative impacts related to: Land Use; Aesthetics; Cultural Resources; Transportation and Circulation; Noise; Air Quality; Greenhouse Gas Emissions; Wind and Shadow; and Public Services. Accordingly, these topics are evaluated in this EIR in separate topical sections.

DETERMINATION OF SIGNIFICANCE

Under CEQA, a significant effect is defined as a substantial, or potentially substantial, adverse change in the environment. The guidelines implementing CEQA direct that this determination be based on scientific and factual data, including the entire record for the project, and not on argument, speculation, or unsubstantiated evidence.[1] Each impact and mitigation measure section of this chapter is prefaced by the criteria of significance, which have been developed by the San Francisco Planning Department for use in determining whether an impact is significant.

FORMAT OF ISSUE SECTIONS

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

- *Setting*. The setting section for each environmental topic provides a description of the baseline physical setting for the project sites and their surroundings at the beginning of the environmental review process (e.g., existing land uses, noise environment, traffic conditions). An overview of regulatory considerations that are applicable to the specific environmental topic is also provided.
- *Impacts and Mitigation Measures*. The impacts and mitigation measures section for each environmental topic presents a discussion of the impacts that could result from implementation of the proposed SFMOMA Expansion and Fire Station Relocation and Housing Project. The impacts of the two projects are evaluated separately in order to address potentially different effects associated with project type, intensity, setting, and geography. The section begins with the criteria of significance, which establish a way of determining whether an impact is significant. The latter part of this section presents the impacts from the proposed projects and mitigation measures, if required. The impacts of the proposed projects are organized into separate categories based on the criteria listed in each topical section.

[1] Public Resources Code, Sections 21068, 21082.2(a), and 21082.2(b).

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

LU: Land Use
AE: Aesthetics
CP: Cultural Resources
TR: Transportation and Circulation
NO: Noise
AQ: Air Quality
GG: Greenhouse Gas Emissions
WS: Wind and Shadow
PS: Public Services

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A. LAND USE

This section discusses the anticipated effects of the proposed SFMOMA Expansion and Fire Station Relocation and Housing Project on land use patterns, land use compatibility and character, and other related issues. As discussed in the Land Use section of the Initial Study, the proposed projects would not divide an established community or conflict with an applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Some of the land use analysis in the Initial Study is presented in this section for informational purposes.

Setting

The following section describes existing land uses within the project sites and their vicinities.

Land Uses Within the Project Sites. This subsection describes the land uses within the SFMOMA Expansion site, followed by land uses within the Fire Station Relocation and Housing Project site.

<u>Land Uses within the SFMOMA Expansion Site</u>. The SFMOMA Expansion site is bordered by Minna Street to the north; the 147-151 Minna Street Parking Garage, Natoma Street and office uses to the east; the W Hotel and Howard Street to the south; and Third Street to the west. The site contains a mix of land uses that is typical of Downtown San Francisco (generally the area defined by the San Francisco Downtown Area Plan), as summarized below (please refer to Chapter II, Project Description, for additional detail):

- *151 Third Street (SFMOMA).* This property is currently developed with the 225,000-square-foot SFMOMA building, a 5-story structure that contains galleries, a retail area, a café, a theater, an education center, public areas such as the lobby and event space, support spaces, art storage space, loading and receiving areas, and basement parking. An approximately 17,250-square-foot sculpture garden (not considered part of the square footage total of the museum building) and coffee bar is located on the roof of the adjacent parking garage at 147-151 Minna Street and is accessed from the fifth floor of the 151 Third Street building. In addition, this property contains two surface parking lots, one adjacent to the northeast corner of the museum (the 5,800-square-foot Minna Street surface parking pad) and one adjacent to the southeast corner of the museum (the 8,500-square-foot Natoma Street surface parking pad).

- *670 Howard Street (also known as the Heald Building site and 15 Hunt Street).* This irregularly-shaped 7,260-square-foot lot is currently developed with a 4-story building and basement. The building, constructed of heavy timber with a masonry façade, was built in 1906 (after the earthquake), is owned by an affiliate of SFMOMA, and is currently vacant.
- *676 Howard Street*. This 4,400-square-foot lot is currently developed with Fire Station No. 1, an active San Francisco Fire Department fire station. The 2-story, 14,410-square-foot double-bay facility with a basement was constructed in 1958.

<u>Land Uses within the Fire Station Relocation and Housing Project Site</u>. The Fire Station Relocation and Housing Project site is located at 935 Folsom Street, at the corner of Falmouth Street between Fifth and Sixth Streets. The 14,400-square-foot site is a through lot with frontages on both Folsom and Shipley Streets and is currently developed with a 1-story (with mezzanine), 25-foot-tall, 18,210- gross-square-foot commercial/industrial building. The building was constructed in 1923 and is currently vacant, but was previously used as a commercial laundry facility and later as an apparel sewing factory.

Land Uses Around the Project Sites. This subsection describes the land uses around the SFMOMA Expansion site, followed by land uses around the Fire Station Relocation and Housing Project site.

<u>Land Uses Around the SFMOMA Expansion Site</u>. The SFMOMA Expansion site and much of the surrounding land to the north, south, and west[1] lie within the former Yerba Buena Center Redevelopment Project Area (which expired on January 1, 2011). The 87-acre Yerba Buena Center Redevelopment Project Area generally extended from Market Street to Harrison Street and west of Fourth Street to east of Third Street. The Yerba Buena Center Redevelopment Project Area has been developed as a convention center, office, housing, hotel, arts, and recreation area.

[1] By convention, Howard Street, and streets that parallel it, including Folsom Street, are considered east-west streets, while numbered streets, such as Third, Fourth, and Fifth Streets are considered to run north-south.

Land uses surrounding the site (which is in proximity to San Francisco's Downtown retail and financial districts) include hotel, retail, office, residential, convention, parking, and public and cultural facilities that typify Downtown San Francisco and its immediate surroundings in the South of Market (SoMa) neighborhood. Figure IV.A-1 illustrates the concentration of cultural facilities near the SFMOMA Expansion site, including the Museum of the African Diaspora, the Cartoon Art Museum, and the Contemporary Jewish Museum of San Francisco (please refer to Chapter II, Project Description, for a list of major cultural facilities in the vicinity of the site). In addition, a new Mexican Museum is planned for the site located at 706 Mission Street (the northwest quadrant of Mission and Third Streets), northwest of SFMOMA.

North of the site, across Minna Street, land uses include the 42-story St. Regis Hotel and Residences, which also houses the Museum of the African Diaspora, and 4- to 5-story office buildings fronting Mission Street. Approximately 60 percent of SFMOMA's support functions are currently housed in 20,000 square feet of leased office space at 667 Mission Street (also known as the Minna Annex). East of the existing SFMOMA building, land uses include an 8-story parking garage; the SFMOMA Sculpture Garden is on the roof of this parking structure. Land uses east of Fire Station No. 1 and the Heald Building include 3- and 4-story office and retail uses. South of the site, land uses include the 29-story W Hotel. Across Howard Street, land uses include a 12-story office building and a 2-story restaurant. West of the site, across Third Street, land uses include the Moscone North convention center, and the Yerba Buena Gardens cultural facilities and open space. The Yerba Buena Gardens comprise approximately two blocks of public open space, galleries, a theater, and retail and recreational facilities atop convention halls. In addition to Yerba Buena Gardens, numerous privately-owned public open spaces are located east of the site. Please refer to Chapter II, Project Description, for additional detail. Figure IV.A-1 is an aerial photo that illustrates land uses and cultural facilities surrounding the site.

Housing in the vicinity of the site includes the St. Regis Residences at 188 Minna Street (101 units on floors 22 to 40), One Hawthorne (165 units), and the Paramount at 680 Mission Street (486 units). In addition, the building located at 134-40 New Montgomery Street has been approved for conversion to residential uses and ground floor commercial uses. This building, which was the tallest building in

San Francisco when it was first constructed, is known by a few different names, including the Pacific Telephone Building, the Pfleuger Building, the Pacific Telephone and Telegraph Building, and the PacBell Building. The building is referred to as the Pacific Telephone Building in this EIR. Two hotels are located immediately to the north and south of the site. The site is bordered by the St. Regis Hotel (containing 260 rooms in addition to residential units) to the north and the W Hotel (containing 404 rooms) to the south.

Land Uses Around the Fire Station Relocation and Housing Project Site. The Fire Station Relocation and Housing Project site is in a mixed-use urban area containing a variety of building types and uses. Building types include older commercial, mixed residential/commercial, live/work, and industrial structures, as well as newer residential buildings. Nearby land uses include residential; live/work; production, distribution, and repair (PDR), many of which are automotive supply and repair businesses; retail (including restaurant and bar); hotel; and surface parking uses.

The urban development pattern in the neighborhood around the Fire Station Relocation and Housing Project site consists of blocks with dimensions of approximately 475 feet by 850 feet, 82-foot-wide streets, and smaller intersecting alleys that create residential enclaves. These residential enclaves are located behind major streets (such as Folsom Street) that are fronted by predominantly commercial and industrial uses.

The Fire Station Relocation and Housing Project site is bordered by Folsom Street to the north. Across Folsom Street, to the north of the project site, is a large surface parking lot (containing approximately 400 parking spaces at 900 Folsom Street) that extends to Fifth Street. To the immediate west of the large surface parking lot is a 3-story structure that is occupied by a furniture and interiors business.

The site is bordered to the east by an open vehicle yard (923 Folsom Street) that is used by a tour bus company for bus storage and maintenance. On the northeast side of the open vehicle yard is a 4-story structure (located at 917 Folsom Street) that contains a hotel with a bar on the ground floor. To the southeast side of the open vehicle yard is a smaller-scale 2-story structure (located at 214 Shipley Street) that contains a garage on the first floor and offices on the second floor.

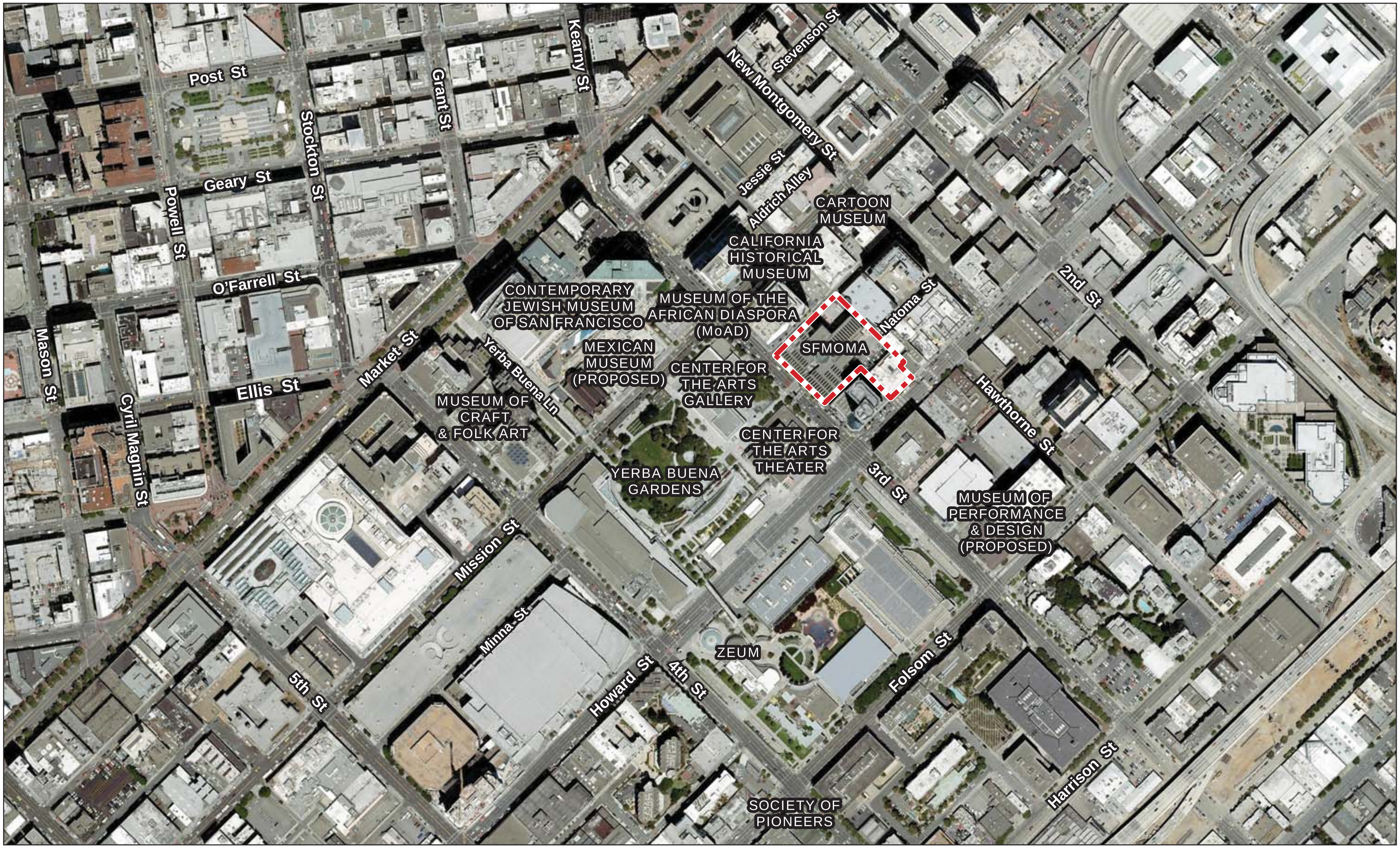

FIGURE IV.A-1

N

0 250 500

FEET

PROJECT SITE

SOURCES: GOOGLE EARTH; LSA ASSOCIATES, INC., 2010.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Cultural Facilities Near SFMOMA

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The site is bordered to the south by Shipley Street. The area south of Shipley Street, across from the project site, consists primarily of residential and live/work uses, with occasional storage or PDR uses. Shipley Street to the west of Falmouth Street comprises 1- to 4-story residential and live/work structures.

The site is bordered to the west by Falmouth Street. Beyond Falmouth Street, to the west of the site, is a 2-story mixed residential/retail building containing an adult business (fronting Folsom Street) and a 2-story residential building (fronting Shipley Street). Residential uses in the general two-block area around the project site are predominantly multi-family flats or higher-density buildings, including the 50-foot-tall 249 Shipley Street lofts directly to the south of the project site at the intersection of Shipley and Falmouth Streets. In addition, there is a 2-story building immediately to the west of the site across Falmouth Street with apartments above an adult business. At 955-65 Folsom Street is a 4-story condominium loft building. Mid-rise lofts at 239-250 Clara Street are on the next block south of the project site. On Folsom Street, one block to the east between Third and Fourth Streets, is the 45- to 85-foot tall Yerba Buena Lofts and the 65- to 85-foot tall 829 Folsom Street residential building.

The project sites are located in an area with a high concentration of planned and approved projects, which are anticipated to be constructed over the next several years. Major projects in the vicinity of the SFMOMA Expansion site include the 706 Mission Street project (located at the northwest quadrant of Third and Mission Streets), which would include the construction of a 550-foot residential tower with up to 215 units, the Mexican Museum in the lower floors, and retail uses. In addition, the 134-140 New Montgomery Street project (located on New Montgomery Street east of the project site) would entail the conversion of the Pacific Telephone Building (formerly used as office space) to a building containing 118 residential units and approximately 8,700 square feet of ground floor commercial uses. A major project in the vicinity of the Fire Station Relocation and Housing Project site is the 900 Folsom Street/260 Fifth Street project (located in the northwest quadrant of Folsom and Fifth Streets), which would include the demolition of a 2-story building and the construction of a total of 448 residential units, 9,560 square feet of retail space, and 323 parking spaces.

Nearby parks include the South of Market Recreation Center and the Victoria Manalo Draves Park, approximately 0.2 of a mile southwest of the site. The Howard Langton Park is about 0.3 of a mile to the west on Howard Street. Yerba Buena Gardens and the Moscone Center are 0.2 of a mile to the northeast on Folsom Street and extend about 0.2 of a mile north to Mission Street.

Impacts

This section analyzes the impacts related to land use that could result from implementation of the proposed projects. The section begins with the significance criteria, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the proposed projects. Project and cumulative impacts are considered, and mitigation measures are recommended, as appropriate.

Significance Criteria. The proposed projects would have a significant effect on land use if they would:

- Physically divide an established community;
- 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 plans, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or
- Have a substantial adverse impact on the existing character of the vicinity.

A conflict between a proposed project and a General Plan policy does not necessarily indicate a significant effect on the environment under CEQA. Please refer to Chapter III, Plans and Policies, for a discussion of the potential conflicts of the proposed projects with the General Plan. The staff report for the Planning Commission will include an analysis of the projects' conformity with General Plan policies and zoning, and will discuss exceptions requested or modifications required.

Impacts. This section discusses the impacts associated with implementation of the proposed projects.

<u>Impact LU-1</u>: The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project would not physically divide an established community. (Less Than Significant)

The division of an established community would typically involve the construction of a barrier to neighborhood access (such as a new freeway segment) or the removal of a means of access (such as a bridge or roadway).

<u>SFMOMA Expansion</u>. The proposed SFMOMA Expansion would involve the expansion of an existing museum on the site and two adjacent parcels. As part of the project, the structures at 670 and 676 Howard Street would be demolished, and the short (115-foot by 30-foot) segment of Hunt Street that is located between the museum and the 670 and 676 Howard Street buildings would be vacated and conveyed by the City to SFMOMA. This segment of Hunt Street is "landlocked" and does not connect to any other public street because the westerly extension of Hunt Street to Third Street was vacated by the City in 1979 and the land conveyed to the developer of the W Hotel. Hunt Street is primarily used by firefighters at Fire Station No. 1 for surface parking and is infrequently used by pedestrians or individual drivers. Therefore, the vacation of this street would not pose access constraints in the vicinity of the project site and vacation would not disrupt or divide the surrounding neighborhood. Primary pedestrian access to SFMOMA would remain on Third Street as part of the proposed SFMOMA Expansion.

The proposed project also includes an up to 18-foot-wide promenade (comprising approximately 3,735 square feet) along the eastern boundary of the site (proposed pedestrian access through the site is shown on Figure II-16 in Chapter II, Project Description). This publicly-accessible promenade would connect to Natoma Street and a public plaza adjacent to the museum, allowing for enhanced pedestrian travel between Natoma and Howard Streets (and the museum itself). This feature of the project would enhance travel around the periphery of the site and would promote the pedestrian vision for Natoma Street outlined in the Transit Center District Plan (see Chapter III, Plans and Policies, for additional detail). This second point of access, which would connect to a publicly-accessible lobby, would not disrupt or divide the surrounding neighborhood and would enhance visual and pedestrian access between the museum and its surroundings. In addition, approximately

2,000 square feet of publicly-accessible terrace space would be developed on the second level of the museum. Please refer to Section IV.D, Transportation and Circulation, for a detailed evaluation of pedestrian, vehicular, and loading access associated with the SFMOMA Expansion.

Fire Station Relocation and Housing Project. The demolition of the existing vacant building at 935 Folsom Street, the proposed subdivision of the property on which it is located, and the construction of a new fire station (fronting Folsom Street) and new residential uses (fronting Shipley Street) would not divide an established community. No roadways or access routes surrounding the site would be changed as part of the project, and the site is not used for travel between Folsom Street and Shipley Street. The project would be constructed entirely on a subdivided lot; all access to the fire station and the residential structure would occur on the sites. Therefore, existing access to the site would not be obstructed or otherwise eliminated, and the proposed fire station and residential building would not disrupt or divide the neighborhood.

Impact LU-2: The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project would not conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. (Less Than Significant)

The proposed projects, taken together, would expand a major cultural facility in downtown San Francisco and result in the construction of a new fire station that would sufficiently serve surrounding dense urban neighborhoods (as discussed in Section IV.I, Public Services). The projects would be generally consistent with General Plan policies relating to the enhancement and elevation of art in the City and the provision of adequate fire fighting capabilities, and would add to the neighborhood's housing stock.

As part of the proposed SFMOMA Expansion, 676 Howard Street would be rezoned from P (Public) to C-3-S (Downtown Support); the fire station portion of the Fire Station Relocation and Housing Project site (measuring approximately 9,000 square feet or approximately 62.5 percent of the site) would be rezoned from MUR (Mixed Use Residential) to P. According to Section 234 of the Planning Code, P zoning is applied to land that is owned by a governmental agency and in some form of public use. Since the P zoning designation is not intended to avoid or mitigate an environmental effect, the proposed rezoning would not conflict with a land use regulation adopted for the purpose of avoiding or mitigating an environmental effect.

After this rezoning, the proposed SFMOMA Expansion and Fire Station Relocation Project would not substantially 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 (such that an adverse physical change would result). Therefore, the impact would be less than significant. The staff report for the Planning Commission will evaluate the consistency of the proposed projects with General Plan policies and applicable Planning Code regulations. Please refer to Chapter III, Plans and Policies, for additional detail.

<u>Impact LU-3</u>: The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project would not have substantial impacts upon the existing character of the sites' respective vicinities. (Less Than Significant)

<u>SFMOMA Expansion</u>. The proposed SFMOMA Expansion would not introduce incompatible uses into the area. The project would result in the demolition of two buildings (the vacant Heald Building and Fire Station No. 1, which is currently occupied) and the expansion of museum uses. In addition, the 676 Howard Street property would undergo a change in use from a fire station to part of a larger museum. In particular, museum uses within and around the existing SFMOMA Expansion site would intensify: up to 235,000 square feet of interior space would be added to the existing museum (an approximate doubling of existing square footage) on a larger footprint. In addition, a new promenade would be developed along the eastern boundary of the site that connects Natoma and Howard Street.

The proposed expansion of museum space and the development of a new promenade would not be considered an adverse change to the character of the site or its vicinity. As stated in the setting section, the Yerba Buena Center Redevelopment Project Area, which encompasses the SFMOMA Expansion site, contains numerous museums and other cultural facilities. The project, in terms of its proposed use, would be in keeping with and would enhance and strengthen the arts-related character of the area. The rezoning of land zoned Public would not result in an adverse impact to land use character because a nearby lot at 935 Folsom Street (approximately 2,000 feet southwest of the SFMOMA Expansion site) would be rezoned to Public and because the neighborhood surrounding the site is mixed use (and thus the conversion of a specific use would not compromise the mixed-use nature of the area). Downtown San Francisco contains a wide mixture of uses with substantial visitor-serving potential (to which the SFMOMA Expansion would contribute). Therefore, the project would not result in a substantial adverse change in land use character. The proposed promenade, by increasing foot traffic through the area, would increase the walkability of Natoma Street and would enhance access between the museum and the public realm.

Similarly, the SFMOMA Expansion would be compatible with the built environment of the surrounding block and adjacent areas. The neighborhood surrounding the existing museum currently contains a mixture of land uses and building forms, including predominantly 4- to 5-story buildings (approximately 46 to 65 feet in height) fronting Mission Street; the 42-story St. Regis Hotel and Residences and the 29-story (320-foot) W Hotel on Third Street; and the 26-story 134-140 New Montgomery building on New Montgomery Street. Expansion of the existing museum would introduce a taller and more massive building than currently exists to the site, but the building form would be compliant with applicable height limit provisions of the Planning Code, would be similar in scale to many structures in the vicinity of the site, and would not be considered an incompatible building type in terms of overall design. However, because the expanded portion of the museum would exceed bulk limits on floors 8 and 9, and rise to a maximum height of approximately 200 feet (plus rooftop mechanical, elevator, and stair penthouses up to 20 feet high), a bulk exception and an amendment to the DDA would be required (refer to Chapter III, Plans and Policies, for additional detail).

<u>Fire Station Relocation and Housing Project</u>. The proposed Fire Station Relocation and Housing Project would result in demolition of the existing vacant building on the project site (formerly used for a commercial laundry and later for apparel manufacturing) and would replace it with a new Fire Station No. 1 and a residential building comprising 4 stories, plus a below-grade parking garage (approximately 43 feet in height). The portion of the site containing the relocated fire station would be rezoned to P (Public). Therefore, the land use on the site would change. Introducing another land

use – in this case a fire station and residential building – into a mixed-use neighborhood containing a diversity of uses would not result in a significant adverse change to the land use character of the general area (the effects of the conversion of industrial space are discussed below under cumulative impacts). The physical impacts of introducing a fire station on the site (including on emergency response services) are addressed in the appropriate topical sections of this EIR.

Because the fire station would front onto Folsom Street, which contains predominantly parking and service-oriented commercial uses (e.g., auto body shops, tire shop, gas station, and leather goods shop) in the vicinity of the project site, it would not represent an incompatible land use in the context of the built environment on the block surrounding the site and its immediate surroundings. Two- and three-story residential buildings (generally ranging from 24 to 36 feet in height) line Shipley Street (to the south of the project site), and the residential building on the southern portion of the Fire Station Relocation and Housing Project site would function as a transition between more active uses along Folsom Street and the predominantly residential Shipley Street frontage. The rezoning of the northern portion of the site (comprising approximately 9,000 square feet or approximately 62.5 percent of the site) to Public, in order to reflect the public use of the fire station, would not adversely affect the character of the area because of the mixed-use nature of the neighborhood (and the need for public services in the neighborhood, including emergency response services). Fire stations are located throughout the residential neighborhoods in San Francisco. Similarly, the proposed residential structure would be designed to be consistent with the Mixed Use Residential Use District and would be designed to meet applicable planning requirements, including height, parking, and open space requirements. Therefore, the project would not result in a substantial adverse change in land use character in the context of the built form of the block surrounding the site and its immediate vicinity.

Cumulative Impacts. This section discusses the cumulative impacts to land use that could result from the project in conjunction with past, present, and reasonably foreseeable future projects.

Section 15130 of the *CEQA Guidelines* defines a "cumulative impact" as an impact which is "created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. . . When the combined cumulative impact associated with the project's incremental effect and the effects of other projects is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR."

When evaluating potential cumulative impacts, the *CEQA Guidelines* call for a consideration of "past, present, and reasonably foreseeable future projects" that may combine with effects of the project in a considerable manner. Past projects include existing development in the project vicinity. Present projects include those that are proposed and not yet built or under construction. Future projects are generally those which are forecasted to occur as part of neighborhood or City-wide growth within a given planning horizon, typically over a period of about 20 years.

In general, planned and approved projects in the vicinity of the project sites would involve redevelopment of infill sites in a way that is consistent with area-wide plans, including the plans associated with the Eastern Neighborhoods planning initiative, the Downtown Plan, and the Transit Center District Plan. These plans generally seek to foster the development of vibrant mixed-use neighborhoods in and around Downtown that capitalize on existing transit infrastructure, while expanding the supply of affordable housing and open space. In addition, the Muni Central Subway Project is part of the cumulative setting for the projects. The subway project (currently under construction) is located one block to the west of the SFMOMA Expansion site on Fourth Street (the Moscone Center stop would be located at Fourth and Howard Streets as part of the Central Subway Project). Please refer to Section IV.D, Transportation and Circulation, for additional information about this project.

<u>Impact LU-4a</u>: The proposed SFMOMA Expansion, in combination with past, present and reasonably foreseeable future projects in the vicinity of the site would not contribute, in a considerable manner, to adverse cumulative land use impacts. (Less Than Significant)

The cumulative development context for the SFMOMA Expansion site is the adjacent draft Transit Center District Plan. The draft Plan area is roughly 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 draft Transit Center District Plan is a comprehensive plan for the southern portion of San Francisco's downtown Financial District – an approximately 145-acre area just east and outside of the SFMOMA Expansion site. The Plan is intended to focus appropriate growth around the transit terminal, which is currently under construction. In the vicinity of the SFMOMA Expansion site, a portion of Natoma Street between First and Second Streets would be converted to a pedestrian-only street. Please refer to Chapter III, Plans and Policies, for additional information about the Transit Center District Plan. The Plan would intensify land uses in the Plan Area, and associated land use impacts are addressed in the Transit Center District Plan EIR. However, the proposed SFMOMA Expansion would not contribute in a considerable manner to these land use impacts, as discussed below.

This cumulative analysis evaluates the land use-related impacts of the proposed SFMOMA Expansion in combination with past, present, and reasonably foreseeable projects anticipated to be developed by 2030. The focus of the analysis is generally development anticipated as part of buildout of the Transit Center District Plan and the Muni Central Subway Project. One major reasonably foreseeable future project in the immediate vicinity of the SFMOMA Expansion site is the proposed 550-foot residential tower at 706 Mission Street (which would include up to 215 residential units, the Mexican Museum, and retail uses). This project and other planned projects would result in the redevelopment of infill sites, and would add new office, retail, and residential space to the City.

The Transit Center District Plan would change the land use character of the Plan Area by amending existing land use controls. One of the major policy objectives of the Plan is to ensure the future growth of high-density employment opportunities. This objective would be promoted through the establishment of minimum commercial-to-non-commercial development ratios for major new projects. In addition, the current maximum 18:1 floor area ratio (FAR) limitation would be eliminated, and building heights would increase in certain subareas. Thus, as the Transit Center District Plan is implemented, the Plan Area would likely become more dense and employment-oriented. In addition, the western two-thirds of the segment of Natoma Street between First and Second Streets would be converted to a pedestrian-only street, with intensified ground-floor retail space and design features to improve the pedestrian experience.

Cumulative land use impacts could result from changes in land use associated with the SFMOMA Expansion, combined with potential land use-changes associated with other past, present, or reasonably foreseeable projects in surrounding areas, including buildout of the Transit Center District Plan and Muni Central Subway Project. Development at the project site would intensify existing museum and accessory land uses, and would not introduce new land uses to the site. These intensified uses would be consistent with surrounding uses and would not divide an established community or conflict with applicable plans and policies such that significant impacts would result. In addition, expanded museum uses would be developed in a way that is consistent with the development regulations in the Planning Code. The proximity of existing and proposed transit infrastructure, employment nodes, and cultural and open space facilities that exist in the greater Downtown area and that are planned as part of the Transit Center District Plan in conjunction with the proposed SFMOMA Expansion would not combine to disrupt or divide the neighborhood. Future transit infrastructure in the area, including the Muni Central Subway Project, would allow visitors to reach the expanded SFMOMA and other cultural facilities in the vicinity without the aid of private motor vehicles. The SFMOMA Expansion would also include the development of a promenade connecting Natoma and Howard Streets, which would support the desired long-term goal of activating alleyways and converting Natoma Street into a more pedestrian-friendly street in the future condition. Therefore, reasonably foreseeable projects, including the SFMOMA Expansion, would not be expected to make a considerable contribution to cumulative land use impacts when combined with the less-than-significant project-level land use effects associated with the proposed Transit Center District Plan.

Changes in land use intensity would generally be confined to the SFMOMA Expansion site itself, and would not result in incompatibilities with surrounding uses, or large-scale adverse changes in land use patterns. The expanded museum would function as a westerly visual terminus along Natoma Street (a segment of which would be converted to a pedestrian-only street under the Transit Center District Plan), but the project would not interfere with the walkability or land use function of the street (Natoma Street currently terminates at the western boundary of the SFMOMA Expansion site). The viability of expanded ground-floor retail uses along Natoma Street between First and Second

Streets would likely be supported by the increased visitation and staffing associated with the SFMOMA Expansion and the proposed promenade connecting Natoma and Howard Streets.

The SFMOMA Expansion would result in the intensification of cultural uses on the site and would further contribute to the extant concentration of cultural amenities in Downtown, the adjacent Yerba Buena Gardens, and the SoMa neighborhood in general (see Figure IV.A-1 for the spatial configuration of these cultural facilities). The SFMOMA Expansion would contribute to cumulative change in the built environment through the demolition of the 4-story Heald Building located at 670 Howard Street and the 2-story Fire Station No. 1 building located at 676 Howard Street, and the development of a larger museum on the site. However, for the reasons discussed above, the SFMOMA Expansion would not contribute in a considerable manner to adverse changes in the land use character of the area.

Impact LU-4b: The proposed Fire Station Relocation and Housing Project, in combination with past, present and reasonably foreseeable future project in the vicinity of the site would not contribute, in a considerable manner, to adverse cumulative land use impacts. (Less Than Significant)

The cumulative context for the Fire Station Relocation and Housing Project is the East SoMa Area Plan. The Plan Area is irregularly shaped and is generally bounded by Mission Street and Folsom Street on the north; The Embarcadero on the east; Townsend Street, Harrison Street, and Mission Creek Channel on the south; and Seventh Street and Fourth Street on the west. The East SoMa Area Plan seeks to develop mixed-use neighborhoods while stabilizing the conversion of industrial land and encouraging the production of affordable housing. Please refer to Chapter III, Plans and Policies, for additional information about the East SoMa Area Plan.

This cumulative analysis evaluates the land use-related impacts of the proposed Fire Station Relocation and Housing Project in combination with past, present, and reasonably foreseeable projects anticipated to be developed by 2030. The focus of the analysis is generally development anticipated as part of the buildout of the East SoMa Area Plan, along with other reasonably foreseeable projects. One reasonably foreseeable project to the northeast of the Fire Station Relocation and Housing Project site (across Folsom Street) is the 900 Folsom Street/260 Fifth Street mixed-use project. The project would include 448 residential units, 9,560 square feet of retail space, and 323 parking spaces. This project and other planned projects would result in the redevelopment of infill sites, and would add new office, retail, and residential space to the City.

Based on findings associated with certification of the Eastern Neighborhoods Rezoning and Area Plans Project EIR and other studies prepared by the Planning Department in advance of the Eastern Neighborhoods Rezoning and Planning Code and Map amendments, the East SoMa Area Plan is expected to change the land use character of the Plan Area through changes in land use controls, including changes in zoning. The majority of zoning in East SoMa was changed from light industrial, service-secondary office (generally, "back office" space), and residential-service districts to the MUR district. In addition, Neighborhood Commercial Transit (NC-T) districts apply to transit corridors along Second, Third, and Sixth Streets. In addition, height limits were increased along many of the primary streets in the Plan Area and lowered on certain residential alleys. The net effect of these changes in land use controls is expected to be a reduction in PDR uses, the encouragement of new residential development in certain areas, more intensified commercial and mixed uses along major transit corridors, and increased development in areas where height limits were increased. Increased residential development would likely occur along Folsom Street. The population of the Plan Area is expected to increase by 3,838 to 5,177 persons (from an existing population of 8,511).

Cumulative land use impacts could result from changes in land use associated with the Fire Station Relocation and Housing Project, combined with potential land use changes associated with other past, present, or reasonably foreseeable projects in surrounding areas, including buildout of the East SoMa Area Plan. Proposed development at the Fire Station Relocation and Housing Project site would replace an existing industrial building with a new fire station and a multi-family residential building containing 13 units. These new land uses would be consistent with surrounding land uses, which are primarily residential, and would not divide an established community or conflict with applicable plans and policies such that significant impacts would result. In addition, the new fire station and multi-family residential building would be developed in a way that is consistent with the development regulations in the Planning Code. The conversion of land from PDR use proposed as part of the project is representative of the land use changes anticipated as part of the East SoMa Area Plan. The Fire Station Relocation and Housing Project would result in the construction of a fire station (fronting onto the commercial- and industrially-oriented Folsom Street) and a new residential building (fronting Shipley Street, which has a more residential character), which are generally consistent with the type of growth anticipated to occur in the area. The historically industrial use within the 935 Folsom Street building (currently vacant) would be converted to a mixture of uses, including residential uses. Therefore, cumulative development projects and land use changes associated with the East SoMa Area Plan would not be expected to result in substantial adverse cumulative land use impacts when combined with the less-than-significant project-level land use effects associated with the proposed Fire Station Relocation and Housing Project.

Impact LU-5: The proposed Fire Station Relocation and Housing Project, in combination with past, present and reasonably foreseeable future project in the vicinity of the site, would not contribute to a cumulatively considerable area-wide conversion of PDR space. (Less Than Significant)

Implementation of the Fire Station Relocation and Housing Project would result in the demolition of an 18,210-gross-square-foot PDR building (formerly used as an apparel sewing factory), which could contribute to a City-wide loss of PDR building space. However, this impact would not be considered significant based on: the small amount of PDR space being demolished; the type and quality of the PDR space being demolished; the prohibitively high cost of rehabilitating the existing building for a new PDR use; findings associated with certification of the Eastern Neighborhoods Rezoning and Area Plans Project EIR; the consistency of the Fire Station Relocation and Housing Project with the intent of the MUR District; and the overall character of the neighborhood.

Amount of Space. The Fire Station Relocation and Housing Project would result in the direct loss of 18,210 square feet of PDR space. In the context of the anticipated City-wide loss of PDR space, this loss would not be considered significant in and of itself. Under the preferred plan adopted as part of the Eastern Neighborhoods Rezoning and Area Plans, between 2,144,661 and 4,933,350 square feet of PDR space would be converted in the Eastern Neighborhoods planning area as a whole.[2]

Type and Quality of Space. The existing PDR building was constructed in 1923 for the Hotel Owners Laundry Association and was used as a laundry until the 1980s. After 1982, the building was sold to a couple from Hong Kong and was vacant from 1982 to at least 1984, and for 8 months in 1984 was occupied by about 30 squatter activists who converted the ground floor to a skateboard rink and cleaned up the mezzanine floor for living space. The property changed hands between several owners, who operated a sewing business that vacated the building following reports of illegal sweatshop operations in 2003. The structure has been vacant since this time and is in poor condition.[3]

In general, there has been a decline in laundry and garment manufacturing establishments in the SoMa neighborhood. When the Hotel Owners Laundry Company was first established at the 935 Folsom Street location in the early 1920s, there were 186 laundry businesses in San Francisco, nine of which were located in the South of Market neighborhood. By 1930, there were 34 laundries in the South of Market neighborhood. However, by 1977, although there were 106 laundries and dry cleaners listed in the San Francisco City Directory, only four were located in the South of Market neighborhood.[4] According to the Eastern Neighborhoods Rezoning and Area Plan Project EIR, the garment industry no longer represents a major "cluster" of PDR uses in the East SoMa area (unlike printing/publishing, transportation, food/beverage, graphic design, and construction uses), which encompasses the Fire Station Relocation and Housing Project site. The industry declined in the area with the national movement of garment manufacturing off-shore and the influx of new office and residential development that began in the mid-1990s.[5]

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[2] *Eastern Neighborhoods Rezoning and Area Plans Project CEQA Findings*, San Francisco Planning Department, August 7, 2008. This document is available at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

[3] *Memo Regarding 935 Folsom Street Eligibility for Listing in the California Register*, Page and Turnbull, November 18, 2009. This document is available at the Planning Department in Case File No. 2009.0291E.

[4] Ibid.

[5] *Eastern Neighborhoods Rezoning and Area Plans Project EIR*, San Francisco Planning Department, June 30, 2007. This document is available at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

The building is a typical PDR structure of its period, with a large open interior, a mezzanine office space, steel-sash industrial windows, and roll-up garage doors. Because the structure is representative of traditional PDR buildings in San Francisco, it has the potential to be re-used by a new PDR use. However, potential reuse for PDR uses would be compromised by the poor condition of the building and the presence of hazardous materials. The building would require a seismic retrofit prior to re-use, due primarily to its age and inadequate upkeep since it was vacated. In addition, the Asbestos, Lead and Polychlorinated Biphenyl (PCB) Inspection Report prepared for the building indicates that the structure contains asbestos, and is thought to contain lead-containing paint and PCB-containing light ballasts.[6] As described on pages 145-148 of the Initial Study included in Appendix A, the San Francisco Building Code and Mitigation Measure M-HZ-1d would require containment and remediation measures to be implemented that would reduce or eliminate these hazardous materials risks.

Eastern Neighborhoods Planning and MUR District. A primary policy objective of the Eastern Neighborhoods planning process was to allow for the continued viability of PDR uses while reducing land use conflicts between PDR and other uses. To accomplish this objective, the rezoning and area plans concentrate PDR uses in designated areas and establish transition areas between PDR and non-PDR uses (through establishment of Mixed-Use (MU), Residential Service (RSD), Residential Enclave (RED) or Urban Mixed-Use (UMU) districts. In addition, prohibitions on housing, office and large retail development in PDR districts are intended to discourage the type of incompatible residential, office and large retail development that has occurred throughout much of the Eastern Neighborhoods, reducing potential land use conflicts. However, the EIR for the planning effort identified the cumulative loss of PDR space in the Eastern Neighborhoods as a significant unavoidable land use impact.

Under all land use options analyzed in that EIR, the adopted Eastern Neighborhoods Rezoning legislation was found to result in less land available for PDR uses than is currently the case. However, under the rezoning and planning effort, land designated for PDR uses would be available almost

[6] *Asbestos, Lead and PCB Inspection Report, 935 Folsom Street*, VBA Inc. 2010. This document is available at the Planning Department in Case File No. 2009.0291E.

exclusively to PDR uses, and housing, office, and large retail uses would not be permitted. Thus, the Eastern Neighborhoods initiative was intended to provide clearer definition between PDR land uses in PDR zones and residential and commercial uses in Mixed-Use and Residential zones. Nevertheless, because the planning effort was found to reduce the land supply for PDR uses in parts of the Eastern Neighborhoods, it followed that there would also be the eventual displacement of some existing PDR business activity and employment from those areas established as MU, RSD, RED and UMU to accommodate housing and/or commercial uses as permitted by the Planning Code. While some existing PDR businesses on future non-PDR land (particularly those that own their buildings) are permitted to remain, many existing PDR businesses on land not zoned for PDR in the future will likely be displaced from these areas due to competition from residential, office, large retail, and other higher-value uses.

The proposed Fire Station Relocation and Housing Project would be consistent with the intent of the MUR District, which is to result in the development of an area that: "serves as a significant housing opportunity area between the higher-density Yerba Buena area and the low-scale, light industrial area of Western SoMa" and that will "continue to emphasize residential [uses] as a required component of all new development." The proposed project would result in the development of housing and a community-serving fire station on the site that would capitalize on the proximity of the site to transit infrastructure and high-volume roadways such as Folsom Street, Fifth Street, and Sixth Street.

<u>Neighborhood Character</u>. Long-term land use patterns in the vicinity of the site indicate a continuing predominance of multi-family residential and mixed uses (residential over commercial). This trend is likely to be reinforced by MUR zoning in the area. The planned 900 Folsom Street project, for instance, would result in the development of a mixed use project containing 448 residential units and 9,560 square feet of retail space, just to the northeast of the site. Residential uses are located across Shipley Street to the south of the site, and beyond Falmouth Street, to the west of the site. Residential uses in the general two-block area around the project site are predominantly multi-family flats or medium-density buildings, including the 50-foot-tall 249 Shipley Street lofts (14 residential units) directly to the south of the project site at the intersection of Shipley and Falmouth Streets.

In the context of the anticipated expansion of residential land uses around the site, the poor quality of the existing building space at 935 Folsom Street, the general long-term decline of laundry and garment PDR uses in the area, and the policy directives that emerged from the Eastern Neighborhoods planning process (which established discrete areas for PDR uses and areas where mixed-use residential uses are encouraged and permitted), the demolition, removal, or alteration of 18,210 gross square feet of PDR space on the site would not be considered a significant contribution to the cumulative loss of PDR space in San Francisco.

In summary, the SFMOMA Expansion and Fire Station Relocation and Housing Project would be developed in a district projected to change substantially by 2025, with substantial office development projected in the vicinity of the SFMOMA Expansion site and mixed-use infill development expected in the vicinity of the Fire Station Relocation and Housing Project. On an area-wide level, implementation of the projects would result in the development of a more dense urban fabric and increase the number of visitors, employees, and residents within or in proximity to downtown San Francisco. As described above, the proposed projects would not individually result in significant land use impacts and, in combination with past, present, and reasonably foreseeable future projects, would not result in adverse cumulative land use impacts. The SFMOMA Expansion would foster the availability of cultural amenities in the vicinity of a more dense downtown, and the proposed Fire Station Relocation and Housing Project would allow for the provision of an essential community service to nearby neighborhoods expected to grow and intensify with new infill development.

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B. AESTHETICS

This section discusses the potential effects of the proposed SFMOMA Expansion and Fire Station Relocation and Housing Project on aesthetics. Much of the aesthetics analysis for the proposed projects was scoped out of detailed analysis in this EIR, based on the analysis in the Initial Study (included as Appendix A). Based on the Initial Study, the SFMOMA Expansion would result in less-than-significant impacts in the following topical areas: scenic resources and light and glare. Similarly, the Fire Station Relocation and Housing Project would result in less-than-significant impacts in the following topical areas: scenic vistas; scenic resources; visual character; and light and glare. Therefore, this Aesthetics section focuses on an analysis of the effects of the SFMOMA Expansion on scenic vistas and visual character, and the cumulative effects of the SFMOMA Expansion and Fire Station Relocation and Housing Project on all aesthetics subtopics. Some of the aesthetics analysis in the Initial Study is presented in this section for informational purposes.

Setting

The following section describes scenic vistas and visual character in the vicinity of the SFMOMA Expansion site.

Scenic Vistas. This subsection describes scenic vistas around the SFMOMA Expansion site, including views of the project site. View corridors comprise the total field of vision from a specific point and are defined by physical elements of the landscape, such as trees, buildings, and hillsides. In addition, topography influences the availability and character of views; points at the top of a hill often have more expansive views than locations at the foot of a hill. Public view corridors, which are available from publicly-accessible viewpoints, such as City streets, sidewalks, and parks, are the focus of this analysis (although certain private viewpoints, such as those from the W Hotel and Pacific Telephone Building (134-40 New Montgomery Street), also provide views of the site). Within the vicinity of the project site, primary view corridors include: Minna Street; Natoma Street; Howard Street; Third Street; and Yerba Buena Gardens (looking east).

Views of the site are limited from Mission Street (other than the intersection with Third Street), due to intervening buildings. For example, views of SFMOMA from Jessie Square (adjacent to the Contemporary Jewish Museum) are obstructed by buildings in Yerba Buena Gardens. Long-range views of the site from public viewpoints are also limited due to the flat topography of the area, the lower scale of buildings within the project site, and the presence of taller surrounding buildings.

The flat topography and concentration of skyscrapers around the SFMOMA Expansion site limit view corridors and associated scenic views in the vicinity of the site. In general, the vicinity of the site contains limited views of the San Francisco Bay or open space areas. Therefore, this analysis focuses on short-range views of the site (generally less than 0.25 mile), although references are made to long-range views (generally over 0.25 mile).

Minna Street. Views to the east down Minna Street from the SFMOMA Expansion site (which are not categorized in the Urban Design Element of the General Plan) are constrained by the relatively narrow width of the street (the right-of-way is 35 feet, including 7-foot sidewalks on either side) and buildings adjacent to the street that generally extend to the lot line. (One of these structures is the existing SFMOMA building.) High-rise buildings are visible in the distance to the east, but no views of San Francisco Bay or open space areas are available. Views to the west down Minna Street in the vicinity of the site terminate at the approximately 2-story Yerba Buena Center for the Arts structure and adjacent fountain and trees.

Natoma Street. Similar to Minna Street, views to the east and west down Natoma Street (which are not categorized in the Urban Design Element of the General Plan) in the vicinity of the site are constrained by the narrow width of the street (the right-of-way is 35 feet, including 7-foot sidewalks on either side) and buildings that generally extend to their lot lines. High-rise buildings terminate the view to the east; the eastern brick façade of SFMOMA terminates the view to the west.

Howard Street. Howard Street in the vicinity of the site is identified as a street having a “Good” quality of street views (the middle of the three rankings) in the Urban Design Element of the General Plan. With four traffic and two parking lanes, Howard Street is 47.5 feet wider than Minna Street or

Natoma Street (the right-of-way is 82.5 feet, including 12-foot sidewalks on either side), and thus offers more expansive views to the east and west. Yerba Buena Island is partially visible in the distance in an easterly direction along Howard Street. Views to the west include the Moscone Convention Center in the foreground and the hillsides comprising Dolores Heights and surrounding neighborhoods.

Third Street. Third Street in the vicinity of the site is identified as having a "Good" quality of street views (the middle of three rankings) in the Urban Design Element. SFMOMA is directly visible from points along Third Street. With five traffic lanes and one parking lane (the right-of-way is 82.5 feet, including 10-foot sidewalks on either side), Third Street is 47.5 feet wider than Minna or Natoma Streets, and views along the corridor are thus more extensive. Due to the off-set grid north of Market Street, northerly views along Third Street culminate at Market Street. Views to the south extend towards China Basin and South Beach, but no water views are available.

Yerba Buena Gardens. SFMOMA is visible directly from Yerba Buena Gardens, where it functions as a noted visual feature. A pedestrian walkway links Third Street (and SFMOMA) to the turf-covered portion of Yerba Buena Gardens, which is frequently used by tourists, area employees, and residents. The pedestrian walkway offers an unobstructed view of the museum. Views of the museum from other locations in Yerba Buena Gardens are generally obstructed by landscaping and buildings, including the Yerba Buena Center for the Arts. From within Yerba Buena Gardens, views to the west terminate at the Metreon building.

The existing SFMOMA was developed pursuant to a San Francisco Redevelopment Agency Disposition and Development Agreement (DDA) that remains in effect, and that limits the maximum building height to 147 feet, in part to protect views of the upper portions of the Pacific Telephone Building located at 134-40 New Montgomery Street from viewpoints in Yerba Buena Gardens. The DDA specifies: "The maximum height of any building between the southerly line of Minna Street and the extension of the northerly line of Natoma Street shall not breach a plane defined as though extending from the north-south center line of CB-2 [a point shown on an attached diagram] at street level through a line 80 feet above the easterly line of Third Street. The objective of this requirement is to allow increased development away from the street while maintaining a substantial view of the Telephone Company [Pacific Telephone Building] tower beyond."

Yerba Buena Gardens is the only open space in the vicinity of the project site (other than the SFMOMA sculpture garden) that offers direct views of the project site (including the street level). The view towards the museum from Jessie Square, the plaza in front of the Contemporary Jewish Museum (736 Mission Street), is partially obstructed by the structure housing the Yerba Buena Center for the Arts/Novellus Theater. In addition, views of the site are available from private property. Views of the site that generally are not accessible to the public would include, for example, views from hotel rooms in the St. Regis and W Hotels.

Visual Character. This subsection describes the visual character of the project site and surrounding areas.

Project Site. The visual character of the project site (including the 151 Third Street, 676 and 676 Howard Street, and Hunt Street properties) is dominated by the existing blocky, geometric SFMOMA building, a 5-story, 145-foot-tall brick building designed by Mario Botta and completed in 1995 (see Figures II-4 and II-5 in Chapter II, Project Description). The building façade is patterned brick, which steps back in sections. A cylindrical oculus (an eye-like opening), which is designed with alternating, zebra-like bands of black and white stone, tops the building. This oculus is a key visual element of the existing structure and is recognizable from surrounding public viewpoints, including Yerba Buena Gardens (see Photo 14 on Figure II-5). The oculus also contains a skylight that provides natural light to the interior of the museum. A portion of the first floor of the Third Street façade is set back and is glass-enclosed, allowing views into the museum interior, including the gift shop. A colonnade with black and white striped columns lines this portion of the building, and provides a visual connection to the oculus. The patterned brick extends around the north, east, and south facades of the museum. Windows punctuate the façade to allow natural light into the galleries and other parts of the museum, and to increase visual interest from the street.

An approximately 17,250-square-foot sculpture garden, designed by Jensen Architects and CMG Landscape Architecture, is located on the roof of a parking garage, adjacent to the main museum building at 147-151 Minna Street. The sculpture garden, which is accessed from the museum's fifth-floor galleries via a glass-enclosed bridge, provides expansive views of the surrounding San Francisco skyline. The garden contains sculptures by artists such as Ellsworth Kelly and Alexander Calder, landscaping in planters, and benches for seating, and functions as a publicly-accessible viewpoint (although one that is open only to visitors who pay for admission to the museum).

There are two undeveloped areas at the northeast and southeast corners of the museum: the 5,800 square-foot Minna Street surface parking pad and the 8,500 square-foot Natoma Street surface parking pad, which are located over the museum basement area that fills the entire rectilinear museum lot. These surface lots are paved, have a utilitarian appearance, and are occasionally filled with motor vehicles. Street trees are located along the Third and Howard Streets frontages of the site, but not along the frontages of the site on Hunt and Minna Streets (although street trees are located on the north side of Minna Street, adjacent to the site).

Minna Street is designated as a "Walkthrough Alley" in the Downtown Plan. Walkthrough Alleys are defined as: "An alley that provides a linkage between pedestrian destinations. These destinations are usually visually connected to the alley. Building frontages tend to have smaller, historic scale with some architectural detailing. There are some service facilities as well as pedestrian-serving retail uses."

Hunt Street is designated as a "Destination Alley" in the Downtown Plan. A Destination Alley is defined as: "An alley that serves as an open space activity area generally located in close proximity to an area with considerable critical mass of pedestrian activity: most Destination Alleys are also Walkthrough Alleys. Building frontages tend to be small, pedestrian scale with unique historic and architectural detailing and significant glazing at street level creating a "front door" atmosphere. There are a variety of pedestrian-serving commercial uses, many of which are food services. The short length of the Destination Alley lends a sense of enclosure and distinctive "sense of place." This sense of enclosure is also a function of adjacent multi-story buildings.

One of the multi-story buildings adjacent to Hunt Street is 161 Natoma Street (adjacent to 670 Howard Street), which is a two-story, rectangular-plan building designed in the Commercial style[1] and built in 1918. The building is individually eligible for the National Register of Historic Places and California Register of Historical Resources due to its association with the Emerson Flag Company (the oldest flag company in San Francisco and the second oldest flag company in the United States) and for its architecture, and for being a contributor to a historic district. The east elevation of the building (facing Hunt Street) has a painted sign that reads "FLAG MAKERS."[2] This sign is visible from Hunt Street within the SFMOMA Expansion site.

In addition to the Mario Botta-designed museum, the SFMOMA Expansion site includes two other buildings located at 676 and 670 Howard Street (see Figure II-3 in Chapter II, Project Description). The 676 Howard Street building, which was constructed in 1958, is Fire Station No. 1. The structure is 2 stories in height, is painted red, and contains two fire truck bays on the ground level, fronting Howard Street. The structure extends to the Howard Street lot line and features International Style or European Bauhaus architecture (see Photo 1 on Figure II-3). The 670 Howard Street building (Heald Building) is a 4-story building and basement, and was constructed in 1906. The façade of the structure consists of brick, brick veneer, and concrete that is scored in a brick pattern (see Photo 2 on Figure II-3). The original ground-level façade was removed in 1982, creating an outdoor vestibule supported by concrete piers and three concrete arches. The restrained design of the lower-rise 670 and 676 Howard Street buildings stand in contrast to the colorful and intricate Botta-designed SFMOMA structure and the 29-story W Hotel, which dominates the view of the corner of Howard and Third Street. Street trees are located adjacent to 670 Howard Street, but not adjacent to Fire Station No. 1 (676 Howard Street).

<u>Surrounding Area</u>. The SFMOMA Expansion site is located in a neighborhood that contains numerous museums, performance space, galleries and other cultural facilities. The visual character of the neighborhood is influenced primarily by the juxtaposition of these cultural facilities with the high-rise,

[1] The Commercial style is a commercial and office form that was popular between 1895 and 1930 and developed in response to new technologies, such as elevators, that permitted greater physical height and larger expanses of open floor space.

[2] *State of California Department of Parks and Recreation Primary Record, 161 Natoma Street*, Carey and Co., Inc., March 11, 2010. This document is available at the Planning Department in Case File No. 2010.0275E.

predominantly office buildings of San Francisco's Financial District, and the presence of older structures side-by-side with modern buildings. The visual quality of the neighborhood around the site is also influenced by building form and design. In general, buildings extend to the sidewalk and range greatly in height, from the Heald Building (4 stories) and SFMOMA building (5 stories) to the W Hotel (29 stories), and St. Regis Hotel (42 stories). The architecture of the area is varied, with modern skyscrapers adjacent to lower-scale buildings (many with ground-floor retail uses and offices on upper floors) post-dating the 1906 earthquake. Third and Howard Streets are busy with pedestrian activity and vehicle traffic during business hours, which also contribute to the area's dynamic urban aesthetic character.

The intensity of urban development generally increases to the north and east of the project site and diminishes to the west and south. The 42-story St. Regis Hotel, which was completed in 2005, dominates the area immediately to the north of the site. Beyond the St. Regis Hotel are other hotels, including the Palace Hotel and Westin San Francisco, which reinforce the cultural and tourism-oriented aesthetic of the area. The Paramount, a 40-story apartment tower, is located north of the St. Regis Hotel, on the south side of Mission Street. Market Street, a major east/west boulevard, demarcates the northern edge of the cultural district surrounding the SFMOMA Expansion site. Smaller, 2- to 6-story brick and masonry buildings line the north side of Minna Street, north and east of the SFMOMA Expansion site.

The site is bordered to the east by an 8-story concrete parking garage and the Pacific Telephone Building (134-140 New Montgomery Street). The building, which is also known as the Pflueger Building, the Pacific Telephone and Telegraph Building, and the PacBell Building was designed by Timothy L. Pflueger and James R. Miller as the headquarters of the Pacific Telephone and Telegraph Company, and was the tallest building in San Francisco when first constructed. The Pacific Telephone Building, which is 26 stories tall, was completed in 1925 and features neo-gothic architecture and light-colored terra cotta cladding. The upper portions of the tower are set back. The base of the building and ornamental bands feature Asian and telephone motifs, and eight 13-foot-high eagle sculptures are located on the crown of the building. The building is illuminated at night.

The height of the Pacific Telephone Building, along with its ornate, arched entryway, stands in contrast to the design of other buildings in the immediate vicinity, which are generally older and characterized by less elaborate design, and range from 6 to 8 stories in height. The arts-oriented nature of the area east of SFMOMA is also influenced by the presence of the Academy of Art University (79 and 180 New Montgomery Street), and numerous smaller-scale gallery, design, and arts supply spaces, which have opened up in ground-level retail spaces in many of the mixed-use buildings in the neighborhood. These smaller retail spaces create nodes of activity during school and business hours. Buildings east of Fire Station No. 1 and the Heald Building are 3- and 4-stories in height office and retail uses and typically feature a strong ground-floor visual presence.

The area to the south of SFMOMA is dominated by the contemporary-style 29-story W Hotel, which was completed in 1999 and features a concrete and glass tower over a podium. Across Howard Street, the visual character of the area is characterized by a mixture of building types, including early 20th Century 2-story brick buildings and a more modern 12-story office building with a 2-story restaurant.

Yerba Buena Gardens, to the west of the SFMOMA Expansion site, is the largest and most important open space area in the vicinity of the site, and is a visual focal point of the convention and cultural district surrounding SFMOMA. Yerba Buena Gardens consists of two blocks of open space and cultural institutions sited atop the underground halls of the Moscone Center convention facilities within an area bounded by Mission Street on the north; Third Street on the east; Folsom Street on the south; and Fourth Street on the west. The visual character of the area is influenced by the configuration of buildings around the open space component of Yerba Buena Gardens, an adjoining water feature, and the bowl-shaped garden, which is frequently used by tourists, area residents, and employees. The juxtaposition of the turf-covered bowl; the diverse plantings and fountains on its perimeter; the water feature; the glass, steel, and concrete-heavy modernist architecture of the nearby cultural and commercial structures; and historic St. Patrick's Church immediately to the north make Yerba Buena Gardens one of the visual icons of San Francisco. The Metreon building (on the west side of the park) and the Moscone Center (a convention center located on the west side of Third Street) generate substantial pedestrian activity, adding to the visual character of the area.

The most prominent stretch of sidewalk around the SFMOMA Expansion site is the one on Third Street, adjacent to the museum's main entrance. In this location, the sidewalk is 10 feet wide and is lined with trees. A portion of the first floor of the Third Street façade of the museum is set back and is glass-enclosed, and striped columns create an arcade-like area that provides a transition between the public realm and the museum. The sidewalk on Minna Street is 7 feet wide and, on the side of the street immediately adjacent to SFMOMA, does not contain street trees (although street trees are found on the north side of Minna Street). Natoma Street is also lined with 7-foot-wide sidewalks. Street trees are found only on the north side of the street, adjacent to the SFMOMA parking garage. Under the Transit Center District Plan, the western two-thirds of the segment of Natoma Street between First and Second Streets would be converted to a pedestrian-only street, with intensified ground-floor retail space and design features to improve the pedestrian experience (in addition, a new park is proposed at the northeast corner of Howard and Second Streets). The Howard Street frontage of the site contains a 12-foot-wide sidewalk. Street trees are located in front of 670 Howard Street, but not 676 Howard Street (so as not to impede emergency vehicle ingress and egress).

Impacts

This section analyzes the impacts related to aesthetics that could result from implementation of the proposed projects. The section begins with the significance criteria, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the proposed projects. Project and cumulative impacts are considered, and mitigation measures are identified, as appropriate.

Significance Criteria. The proposed projects would have a significant effect on aesthetics if they would:

- Have a substantial adverse effect on a scenic vista; or
- Substantially degrade the existing visual character or quality of the site and its surroundings.

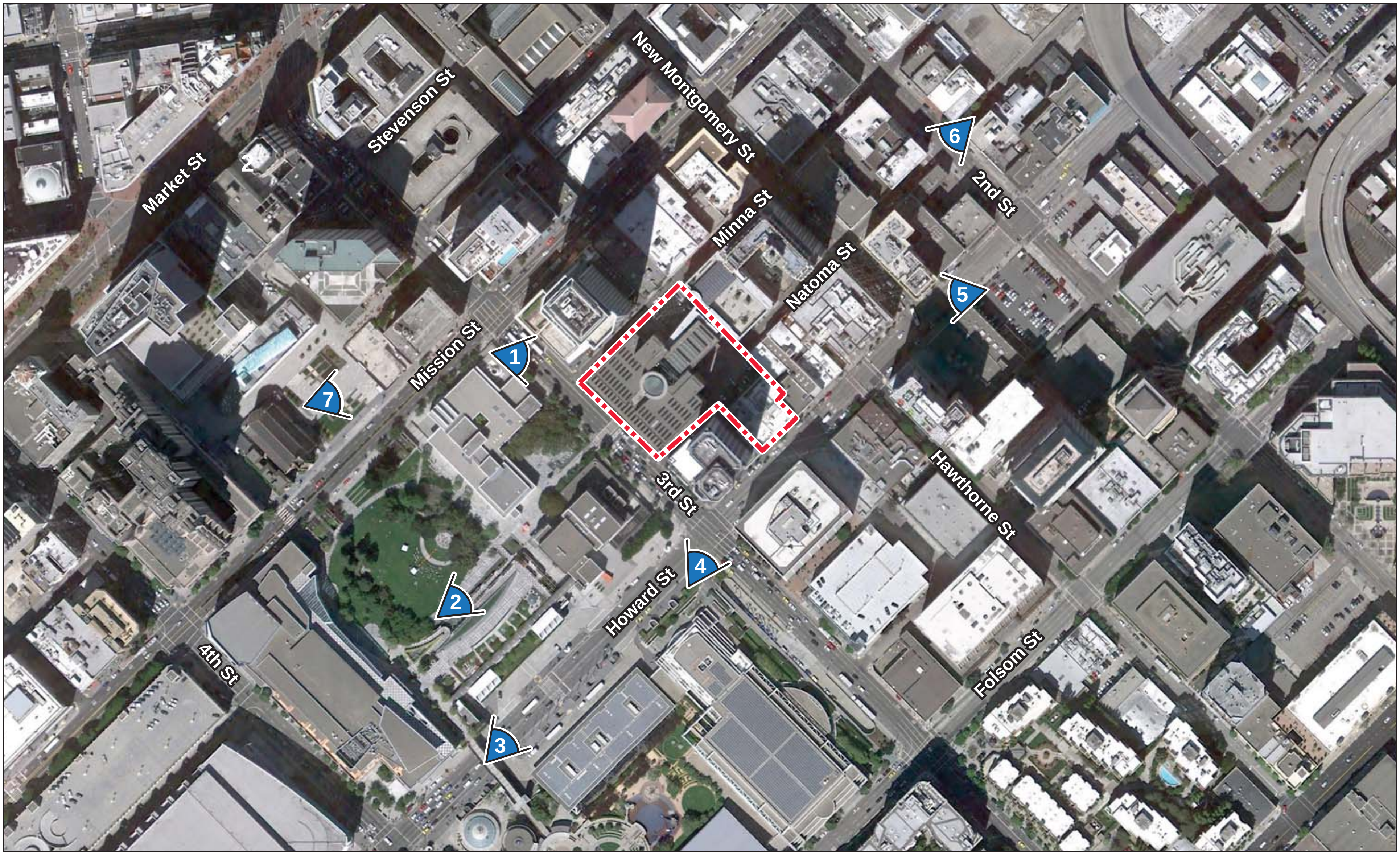
As noted at the beginning of this section, based on the Initial Study, the SFMOMA Expansion would result in less-than-significant impacts in the following topical areas: scenic resources and light and glare. The Fire Station Relocation and Housing Project would result in less-than-significant impacts in the following topical areas: scenic vistas; scenic resources; visual character; and light and glare. Therefore, this impact evaluation focuses on an analysis of the effects of the SFMOMA Expansion on scenic vistas and visual character, and the cumulative effects of the SFMOMA Expansion and Fire Station Relocation and Housing Project on all aesthetics subtopics.

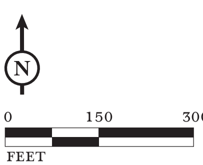
Impacts. This section discusses the impacts associated with implementation of the proposed projects. The following analysis is based in part on visual simulations prepared for the proposed projects. Figure IV.B-1 shows the seven viewpoints surrounding the SFMOMA Expansion site for which visual simulations of the project were prepared. Figures IV.B-2 through IV.B-8 show the visual simulations for each of the identified viewpoints. Figure IV.B-9 shows the three viewpoints surrounding the Fire Station Relocation and Housing Project site for which visual simulations of the project were prepared. Figures IV.B-10 through IV.B-12 show the visual simulations for each of the identified viewpoints.

As noted at the introduction to this section, based on the analysis in the Initial Study (included as Appendix A), the Fire Station Relocation and Housing Project was found to not result in significant project-level aesthetics impacts. Therefore, the photos included in this section that depict the vicinity of the Fire Station Relocation and Housing Project site and visual simulations of the project are included to provide context to the discussion of cumulative impacts to aesthetic resources.

<u>Impact AE-1</u>: The proposed SFMOMA Expansion would not have a substantial adverse effect on a scenic vista. (Less Than Significant)

As noted in the setting section, views of the SFMOMA Expansion site that are not accessible to the public would include, for example, views from dwelling units in the One Hawthorne development and the St. Regis Residences, hotel rooms in the St. Regis and W Hotels, and the Pacific Telephone Building (134-40 New Montgomery Street). While the expanded museum would be visible from some of these buildings, effects on private views to a small number of persons do not constitute a significant impact under CEQA.





SFMOMA Expansion Project Site

Viewpoint Locations

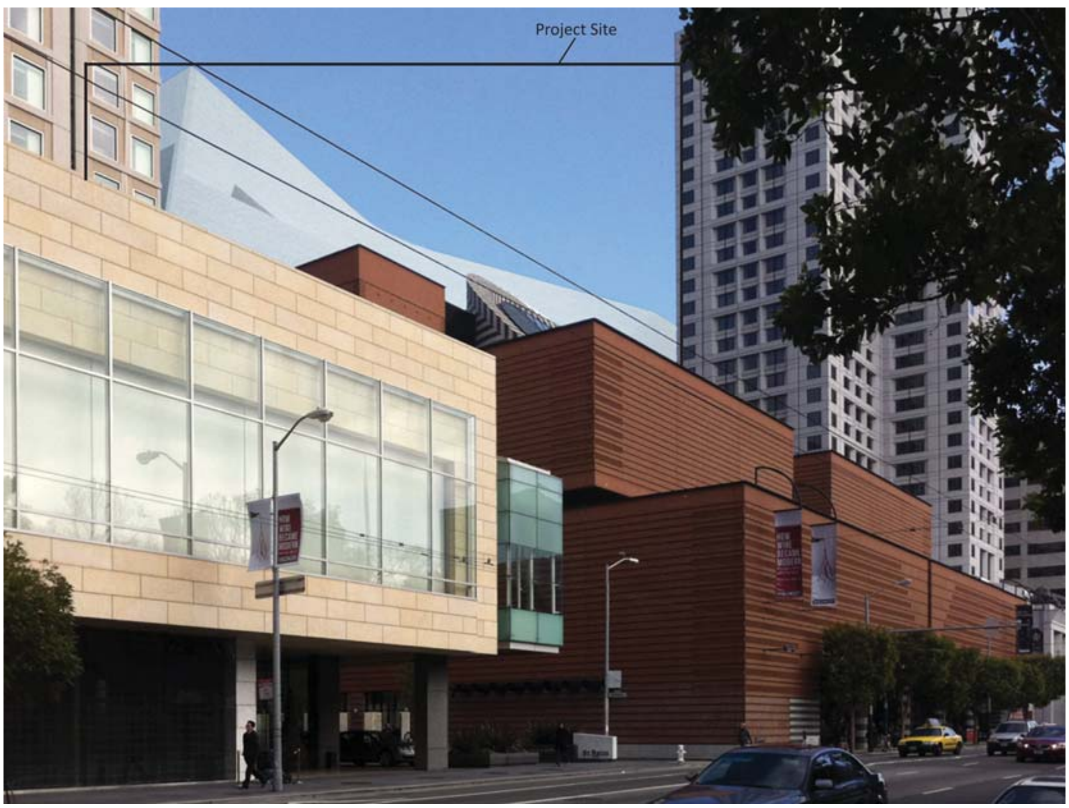
SOURCES: GOOGLE EARTH, 2010; LSA ASSOCIATES, INC., 2011.

FIGURE IV.B-1

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

SFMOMA Expansion Viewpoint Map

Existing



Visual Simulation

FIGURE IV.B-2

Illustration describes a preliminary building design

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Visual Simulation - SFMOMA Expansion Site
Viewpoint 1 (Mission and Third Streets)

SOURCE: EHDD ARCHITECTURE, 2011.

Existing

Visual Simulation

FIGURE IV.B-3

Illustration describes a preliminary building design

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Visual Simulation - SFMOMA Expansion Site
Viewpoint 2 (Yerba Buena Gardens)

SOURCE: EHDD ARCHITECTURE, 2011.

Existing

Visual Simulation

FIGURE IV.B-4

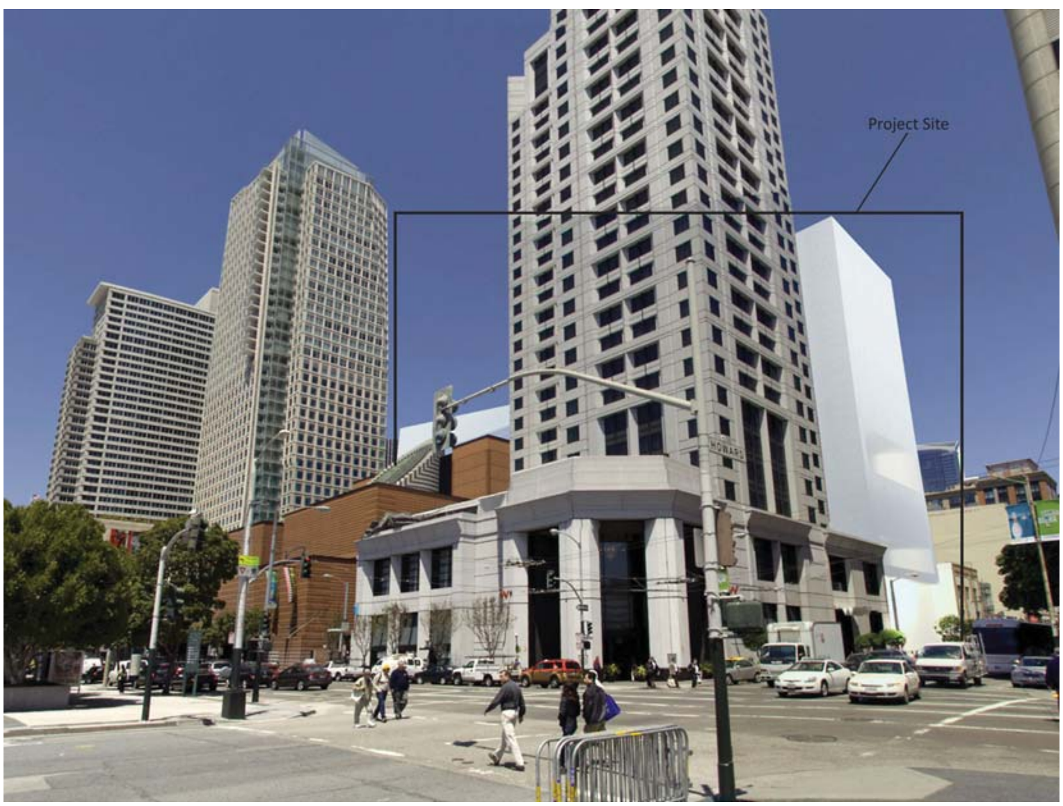
Illustration describes a preliminary building design

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Visual Simulation - SFMOMA Expansion Site Viewpoint 3 (Howard Street Pedestrian Overpass)

SOURCE: EHDD ARCHITECTURE, 2011.

Existing



Visual Simulation

FIGURE IV.B-5

Illustration describes a preliminary building design

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Visual Simulation - SFMOMA Expansion Site Viewpoint 4 (Howard and Third Streets)

SOURCE: EHDD ARCHITECTURE, 2011.

Existing

Visual Simulation

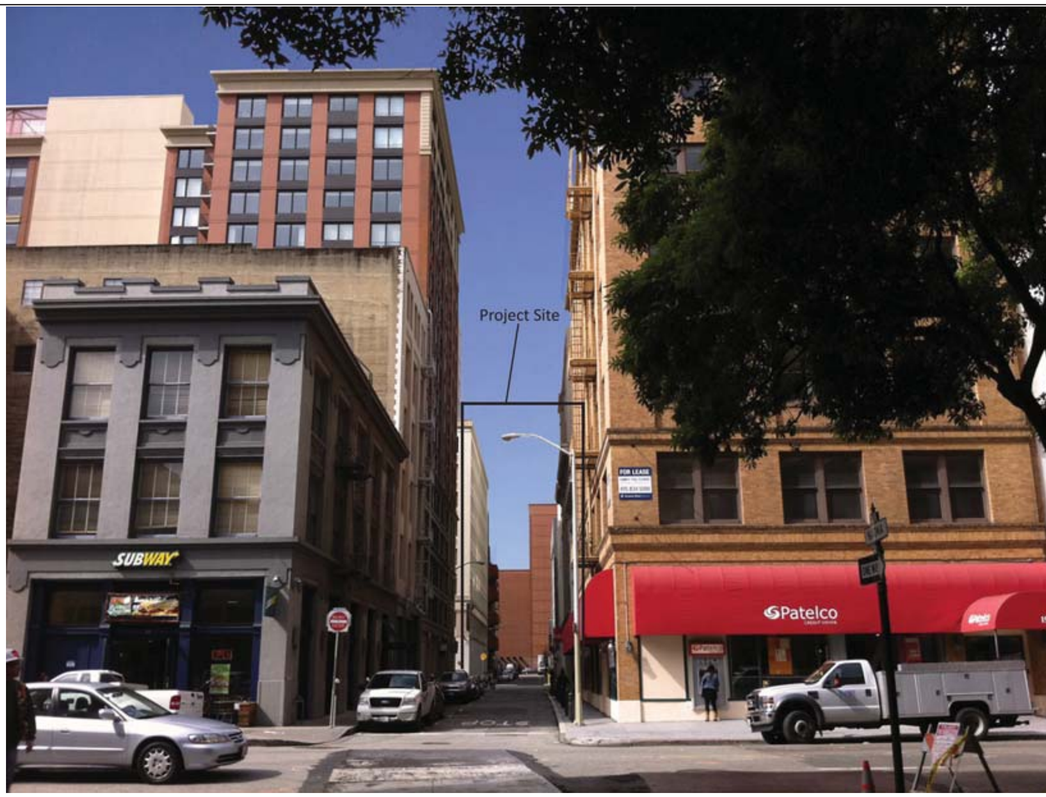
FIGURE IV.B-6

Illustration describes a preliminary building design

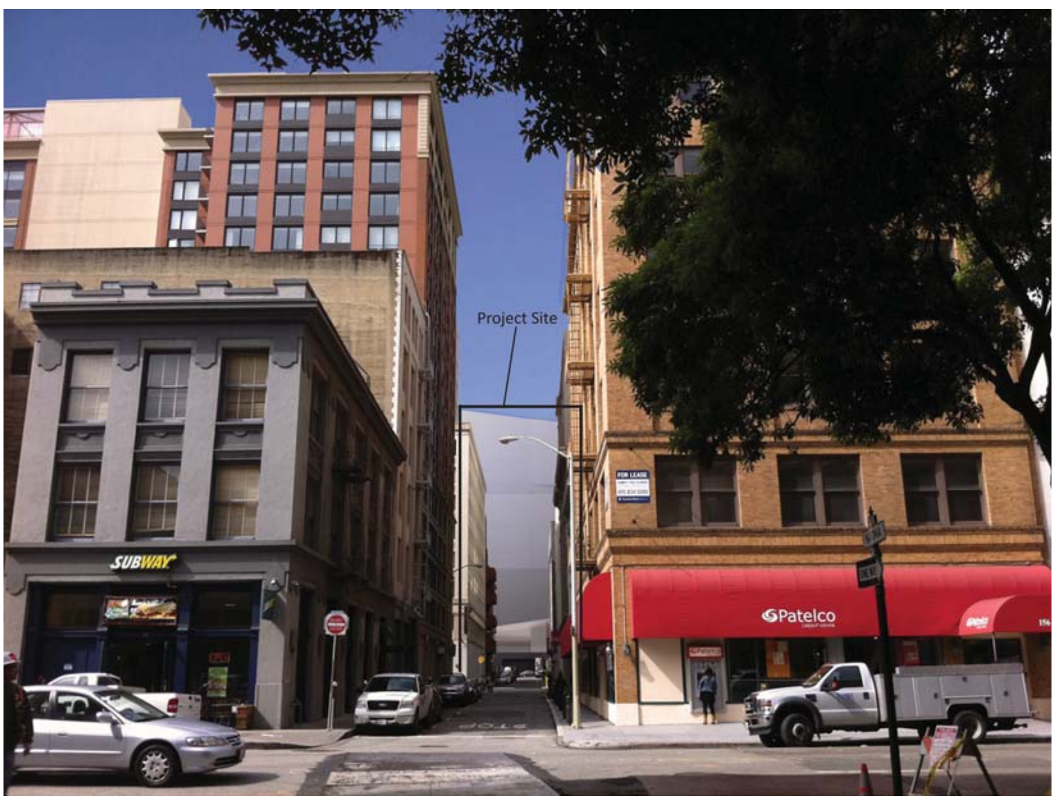
SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Visual Simulation - SFMOMA Expansion Site Viewpoint 5 (Howard and New Montgomery Streets)

SOURCE: EHDD ARCHITECTURE, 2011.



Existing



Visual Simulation

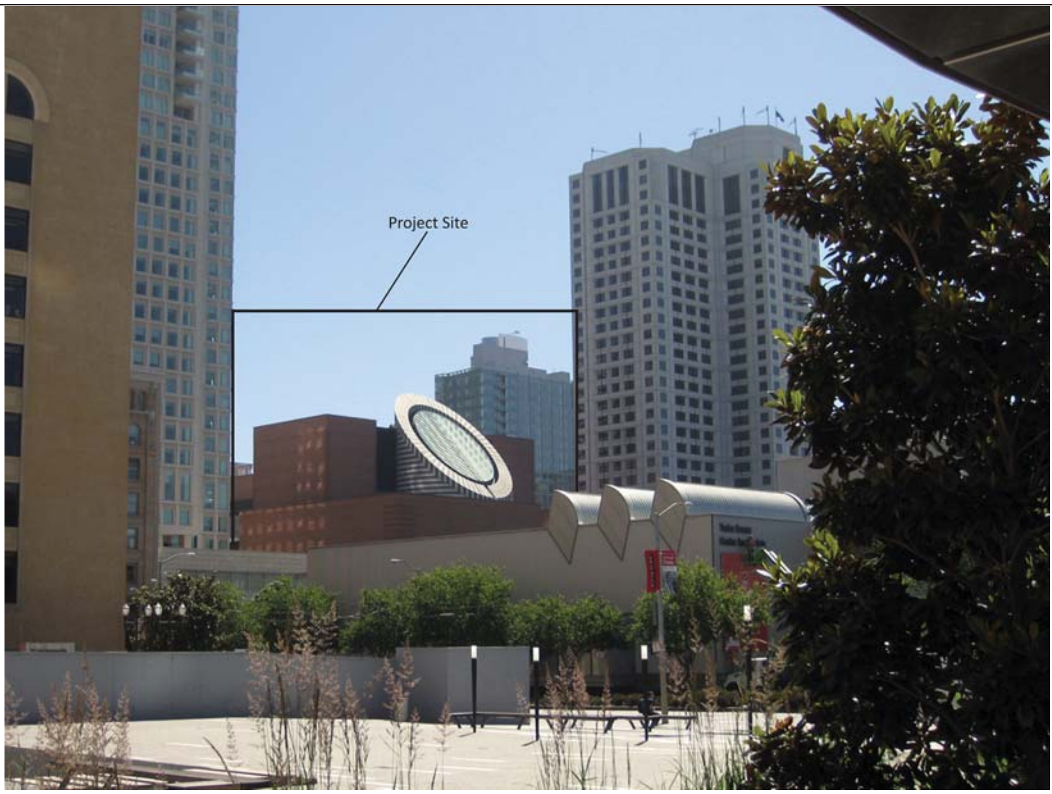
FIGURE IV.B-7

Illustration describes a preliminary building design

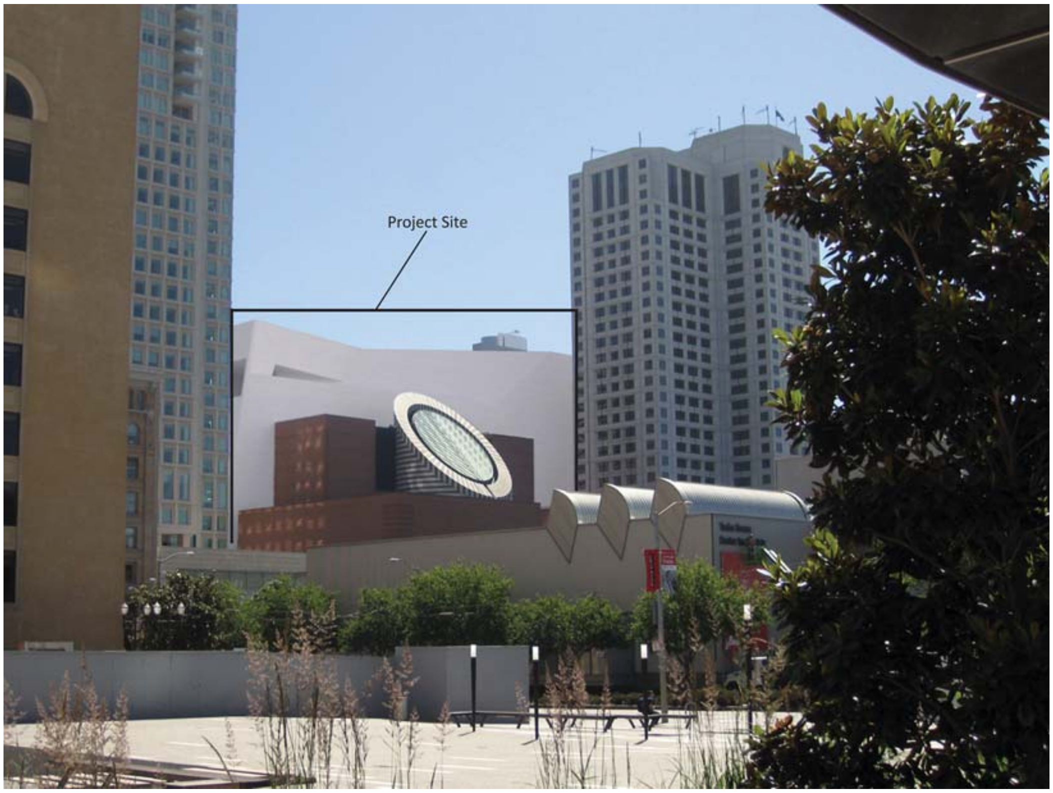
SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Visual Simulation – SFMOMA Expansion Site Viewpoint 6 (Natoma and Second Streets)

SOURCE: EHDD ARCHITECTURE, 2011.



Existing



Visual Simulation

FIGURE IV.B-8

Illustration describes a preliminary building design

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Visual Simulation - SFMOMA Expansion Site Viewpoint 7 (Jessie Square)

SOURCE: EHDD ARCHITECTURE, 2011.

Viewpoint 1 (Mission and Third Streets). As shown in Figure IV.B-2, long-distance views are limited from the southwest quadrant of Mission and Third Streets. From this location, the view is dominated by the brick-faced SFMOMA and the two hotels adjacent to the museum: the St. Regis Hotel and W Hotel. Because the existing museum is 145 feet tall (substantially lower in height than the adjacent hotels), it provides a visual break in the skyline, allowing for open views of the sky. Development of a new wing that extends up to approximately 200 feet in height (plus rooftop mechanical, elevator, and stair penthouses up to 20 feet in height) would elevate the City skyline. However, this change in skyline would not be considered a significant impact because no scenic views (of San Francisco Bay or surrounding hillsides, for instance) would be obstructed from this publicly accessible location.

Viewpoint 2 (Yerba Buena Gardens). Figure IV.B-3 depicts a scenic view of the site from Yerba Buena Gardens. Besides the SFMOMA sculpture garden, Yerba Buena Gardens is the only formal open space area from which the SFMOMA Expansion site is visible. As shown in Figure IV.B-3, the iconic Botta-designed cylindrical oculus on the museum is directly visible from this location in the foreground and is a scenic feature in its own right. The 26-story, neo-gothic Pacific Telephone Building (134-140 New Montgomery Street) rises up in the background and also contributes to the view from Yerba Buena Gardens. The proposed project would not affect the Third Street façade of the existing museum, including the oculus. However, the new structure in the eastern portion of the site would extend up to approximately 200 feet in height (plus rooftop mechanical, elevator, and stair penthouses up to 20 feet high) and would block a portion of the Pacific Telephone Building from Viewpoint 2.

However, the design of the SFMOMA Expansion would generally be sensitive to the existing view of the Pacific Telephone Building from Yerba Buena Gardens and would maintain a connection between the foreground museum view and background Pacific Telephone Building view. By narrowing the width of the expansion, the perceived height of the museum would diminish in line with the Pacific Telephone Building (and the museum oculus), allowing for a more extensive view of the building than would be available without the narrowing. This narrowing of the roofline would also reveal the stepped massing of the Pacific Telephone Building. The approximately top 7 to 9 stories of the northern and central towers of the Pacific Telephone Building would continue to be visible after implementation of the project due to this design feature.

Therefore, although the proposed SFMOMA Expansion would obstruct a portion of the Pacific Telephone Building, this change to a scenic vista would not be considered significant because the decorative upper floors and architectural features (including the varied massing) of the Pacific Telephone Building would remain highly visible. The visual relationship between the foreground view of the museum, the background view of the Pacific Telephone Building, and Yerba Buena Gardens would be retained. In addition, the project would not violate the view plane provisions in the DDA that were crafted primarily to protect view of the Pacific Telephone Building. The project would change the existing skyline by extending it higher, but in the context of an urban environment characterized by tall buildings, this change to a scenic vista would not be considered significant. Therefore, the proposed SFMOMA expansion would not result in a significant adverse change to the scenic vista at Yerba Buena Gardens.

Viewpoint 3 (Howard Street Pedestrian Overpass). Figure IV.B-4 shows the view of the SFMOMA Expansion site from the Howard Street overpass. The Howard Street overpass, which links Yerba Buena Gardens and the rooftop open spaces and recreational facilities above Moscone Center South, is one of the few places in the vicinity of SFMOMA where an above-street level view of the site is available. This location thus yields a broader view of the City skyline, but only the uppermost portion of SFMOMA's cylindrical oculus (as almost the entire museum is blocked by the Yerba Buena Center for the Arts/Novellus Theater). The Pacific Telephone Building is directly visible behind the project site, as are other adjoining skyscrapers, such as the W Hotel and St. Regis Hotels. Yerba Buena Island is visible as part of a long-range view looking east along Howard Street. The proposed SFMOMA Expansion would change this view, but not substantially and adversely. After project implementation, the approximately 200-foot-tall expansion would rise east of the existing museum, partially obscuring a portion of the Pacific Telephone Building and an office building to the northeast of the Pacific Telephone Building. The uppermost portion of the Pacific Telephone Building would remain visible, and the St. Regis Hotel and W Hotel would continue to dominate the horizon. As noted in the discussion of changes to Viewpoint 2, the design of the museum features a narrowing roofline intended to preserve the view of the Pacific Telephone Building. This design feature would be sensitive to the view of the Pacific Telephone Building from Viewpoint 3. The long-distance view down Howard Street and out to Yerba Buena Island would remain unchanged. Thus although the view from Viewpoint 3 would change with implementation of the SFMOMA Expansion, the City skyline would remain intact (a view of the Pacific Telephone Building would continue to be available) and longer-distance scenic resources would be unobstructed. Therefore, changes to the scenic vista would not be considered adverse.

Viewpoint 4 (Howard and Third Streets). Figure IV.B-5 shows the view from the southwest quadrant of Howard and Third Streets. This view is dominated by the 29-story W Hotel, on the northeast corner. However, the Third Street frontage of SFMOMA (and cylindrical oculus) and the 670 and 676 Howard Street buildings are also visible. The proposed SFMOMA Expansion would be visible from this location, but approximately 30 percent of the expanded wing would be obstructed by the W Hotel. The project would raise the height of the visible skyline to the east of the W Hotel, but this new skyline would not be out of character with its surroundings. In general, the skyline is heightened to the east of Yerba Buena Gardens, as one progresses further into the Financial District. No scenic views, such as views of San Francisco Bay, the Pacific Telephone Building, or other surrounding land masses are directly visible from the perspective of Viewpoint 4. Therefore, the proposed SFMOMA Expansion would not adversely affect a scenic vista from this location.

Viewpoint 5 (Howard and New Montgomery Streets). Figure IV.B-6 shows the view just east of the intersection of Howard and New Montgomery Streets. The 7-story structure at 180 Montgomery Street (currently occupied by the Academy of Art University) and the 29-story W Hotel are dominant features within this view. The buildings located at 670 and 676 Howard Street are visible from this located, but are overshadowed by surrounding taller buildings, particularly the W Hotel. The existing SFMOMA is not visible from this location. After project implementation, the proposed Howard Street wing of the museum would be directly visible against the backdrop of the W Hotel, and only the uppermost portion of the hotel would be visible. Although the project would replace 2- and 4-story buildings with a structure extending up to 10 stories (or approximately 200 feet, plus rooftop mechanical, elevator, and stair penthouses up to 20 feet high) in height, the taller building in this location would not appear out-of-place, due to the proximity to the 29-story W Hotel and 7-story building at 180 Montgomery Street. The taller structure would not compromise longer-range views, or substantially change the appearance of the City skyline. Therefore, this change in view would be considered less than significant.

Viewpoint 6 (Natoma and Second Streets). Figure IV.B-7 shows the westward-looking view from the intersection of Natoma and Second Streets. The view from this location terminates abruptly at the brick-faced east façade of the existing museum. No long-range vistas are available from this location, and existing views are characterized by a high degree of enclosure as well as the historic buildings that line the street. After construction of the SFMOMA Expansion, the view would terminate in the public plaza adjacent to the expanded museum, and the eastern façade of the museum. The height of the museum would increase from 145 feet to approximately 200 feet (plus rooftop mechanical, elevator, and stair penthouses up to 20 feet high); therefore, the project would obstruct more of the sky compared to existing conditions. However, due to the design of the museum and the adjacent public plaza, changes to the view from Natoma and Second Streets would not be considered adverse. The proposed museum addition would function as a focal point that would support the plans in the Transit Center District Plan to enliven Natoma Street and improve the overall pedestrian experience. The new structure at the terminus of Viewpoint 6 would likely attract pedestrians viewing the museum from the east.

Viewpoint 7 (Jessie Square). Figure IV.B-8 shows the view southeast from Jessie Square, the plaza in front of the Contemporary Jewish Museum (located at 736 Mission Street). Direct views of the existing museum are partially blocked by the Yerba Buena Center for the Arts Forum. The St. Regis Hotel and W Hotel are visible in the foreground and a tower of modern construction is visible in the background. No long-distance views are available from this location. After project implementation, the visible height of the museum would increase, blocking the modern tower currently visible in the background. However, this change in view would not be considered adverse because the tower is not a notable landmark and is typical of other recently-constructed buildings in the vicinity. A taller museum in this location would not appear out-of-place, due to the proximity to the 29-story W Hotel and 42-story St. Regis Hotel. The taller structure would not compromise longer-range views or substantially change the appearance of the City skyline, and therefore this change in view would be considered less than significant. In addition, it should be noted that the planned project at 706 Mission Street (which would include a 550-foot residential tower with the Mexican Museum in the lower floors) would obscure much of this view.

In summary, the proposed SFMOMA Expansion would not have an adverse effect on a scenic vista. The iconic appearance of the existing museum, including the cylindrical oculus, black and white columns, and patterned brick would remain after implementation of the project, and views of the middle to uppermost portion of the Pacific Telephone Building would be preserved. Therefore, the key architectural elements of the museum and the Pacific Telephone Building would continue to be integral parts of the view towards the SFMOMA Expansion site from Yerba Buena Gardens. Although the museum would be extended in height, additional building mass would not compromise the look and feel of the City skyline. In addition, longer-distance views out to Yerba Buena Island along Howard Street would not be compromised.

Views from the sculpture garden to the north, east, and south would remain unaffected by the proposed project. Views to the west are somewhat obstructed by the existing SFMOMA building, W Hotel, and St. Regis Hotel, and would be obstructed somewhat further by the proposed SFMOMA Expansion. Therefore, expansive views of the City skyline would continue to be available, and no adverse effects to scenic vistas would occur.

<u>Impact AE-2</u>: The proposed SFMOMA Expansion would not substantially degrade the existing visual character or quality of the site and its surroundings. (Less Than Significant)

The proposed SFMOMA Expansion, which would expand an existing museum on a site containing the existing SFMOMA, a fire station, and a former commercial building, would not substantially degrade the visual character or quality of the site and its surroundings. The project site is located in a neighborhood that is visually characterized by the juxtaposition of old and new buildings, Yerba Buena Gardens and the surrounding dense urban fabric, and a high concentration of arts-related spaces. The expansion of SFMOMA would enforce the existing visual character of the area and add a new iconic building to the existing mix of old and new structures. Although visual quality is subjective, it can be reasonably concluded that the proposed SFMOMA Expansion would not result in a substantial, demonstrative negative aesthetic effect on the visual character or quality of the project site or its surroundings.

The visual character of an area is primarily experienced at the street level. Within the project site, the defining street-level features include the glass-enclosed portion of the museum's Third Street façade and its distinctive banded stone colonnade; the International Style façade of Fire Station No. 1; and the outdoor vestibule supported by concrete piers and three concrete arches that is part of the adjacent 670 Howard Street building. The Minna and Natoma Street parking pads also are a part of the visual character of the site along the other two site frontages.

As part of the proposed SFMOMA Expansion, the distinctive Third Street façade of the museum would remain intact, and would continue to serve as the primary entrance to SFMOMA. The expanded portion of the museum would not be directly visible along the Third Street segment of the SFMOMA Expansion site and thus the visual character of the area would not change substantially from this perspective.

Changes would, however, be more substantial along the Howard Street frontage of the site, as two older, smaller-scale buildings would be replaced by a new building extending up to 10 stories (approximately 200 feet) in height, plus rooftop mechanical, elevator, and stair penthouses up to 20 feet tall. The existing 676 and 670 Howard Street buildings have a high degree of street-level visual interest associated with the clean-cut lines of the International Style fire station and the outdoor vestibule that is a part of the 670 Howard Street building. Although the project would result in demolition of these buildings, they would be replaced with a structure containing a new visible ground-floor gallery and a secondary entryway to the museum. This entryway would be active with pedestrians and would generate additional activity and interest along this segment of Howard Street. The ground floor of the Howard Street frontage of the expansion would contain a gallery with a large expanse of windows, adding transparency and pedestrian-level visual interest to the streetscape. Therefore, although the SFMOMA Expansion would result in the removal of existing structures with interesting architectural details, the structures would be replaced with a structure that also generates street-level interest. In addition, the parking pads on Minna and Natoma Street would be replaced with the expanded museum structure. Because these parking pads do not contribute a high degree of visual interest, physical changes associated with the elimination of parking on the site would be neither substantial nor adverse.

The proposed project includes an up to 18-foot-wide promenade along the eastern boundary of the site. This promenade would connect to Natoma Street and the proposed public plaza adjacent to the museum. The public plaza would offer views into the art court and gallery areas of the museum. As discussed in the setting section, under the Transit Center District Plan, the western two-thirds of the segment of Natoma Street between First and Second Streets would be converted to a pedestrian-only street, with intensified ground-floor retail space and design features to improve the pedestrian experience. A new iconic museum structure that terminates the segment of Natoma Street west of New Montgomery Street and a connector promenade to Howard Street (with adjacent public outdoor spaces) would support the aesthetic vision for Natoma Street outlined in the Transit Center District Plan by creating a distinct destination and drawing increased pedestrian traffic through the area.

In addition, the east-facing elevation of the building located at 161 Hunt Street (containing a painted sign that reads "FLAG MAKERS") would be visible from the promenade proposed along the site's eastern boundary and adjacent public outdoor spaces. Therefore, the SFMOMA Expansion would not have an adverse impact on the visual character of the area around Natoma Street and the western boundary of the project site.

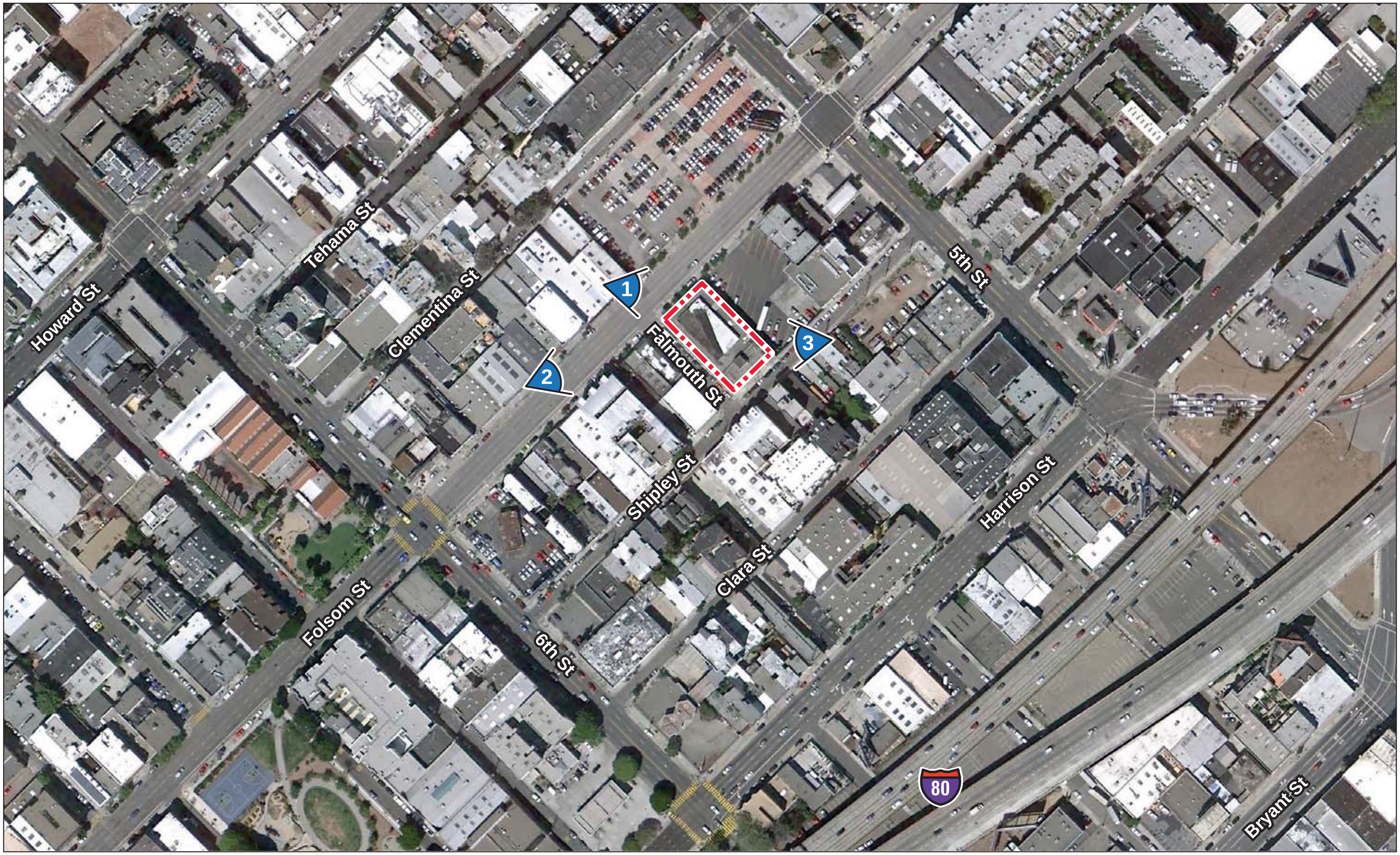
Impact AE-3: The proposed SFMOMA Expansion and Fire Station and Relocation Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the sites would not contribute, in a considerable manner, to substantial or adverse aesthetics impacts. (Less Than Significant)

This discussion evaluates the aesthetics-related effects of the proposed SFMOMA Expansion and Fire Station Relocation Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the sites. Although visual quality is subjective, it can be reasonably concluded that the proposed projects would not result in a substantial, demonstrative negative aesthetic effect on the visual character or quality of the project sites or their surroundings. As discussed in this section of the EIR and the Initial Study (included as Appendix A), the proposed projects would not individually result in any significant aesthetics-related impacts, including impacts to scenic vistas, scenic resources, visual character, and light and glare. Figures IV.B-2 through IV.B-8 illustrate changes to aesthetic conditions associated with the SFMOMA Expansion. Figure IV.B-9 identifies the viewpoints around the Fire Station Relocation and Housing Project site for which visual simulations (taking into account major proposed projects in the vicinity) were prepared, and Figures IV.B-10 through IV.B-12 include these visual simulations.

As part of the SFMOMA Expansion, the five existing trees along the Third Street frontage would be retained, and five trees would be planted along the Howard Street frontage. As discussed above, the proposed project includes an up to 18-foot-wide promenade along the eastern boundary of the site that would connect to Natoma Street and the public plaza adjacent to the museum. The public plaza would offer views into the art court and gallery areas of the museum, and, combined with the promenade connecting Natoma and Howard Streets, would support the aesthetic vision for Natoma Street outlined in the Transit Center District Plan. Therefore, the proposed SFMOMA Expansion would contribute positively to aesthetic changes in the cumulative condition, particularly those associated with the City's planned alleyway improvements. In addition, the project would add another contemporary building to an existing mix of old and new buildings that will be subject to continued change in the future condition.

The visual simulations of the Fire Station Relocation and Housing Project supplement the discussion on pages 54 through 56 of the Initial Study, which concludes that that project would not result in adverse effects on scenic vistas.

In particular, the relocated fire station and multi-family residential structure would be located entirely within the existing lot line of the site and would not protrude into the view corridor of the public rights-of-way. The fire station would be set back from the property line by 5 feet to accommodate a bioswale along Falmouth Street (which would enhance the visual character of this segment of Falmouth Street). In addition, four trees would be planted along the Shipley Street frontage of the site.



N

0 150 300
FEET

Fire Station Relocation and Housing Project Site

Viewpoint Locations

SOURCES: GOOGLE EARTH, 2010; LSA ASSOCIATES, INC., 2011.

FIGURE IV.B-9

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Fire Station Relocation and Housing Project Viewpoint Map

Existing

Visual simulation with proposed project

LSA

FIGURE IV.B-10

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Visual Simulation – Fire Station Relocation and Housing Project
Viewpoint 1 (Folsom Street)

SOURCE: LEDDY MAYTUM STACY ARCHITECTS, 2011.

Existing

Visual simulation with proposed project

LSA

FIGURE IV.B-11

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Visual Simulation – Fire Station Relocation and Housing Project
Viewpoint 2 (Folsom Street)

SOURCE: LEDDY MAYTUM STACY ARCHITECTS, 2011.

Existing

Visual simulation with proposed project

LSA

FIGURE IV.B-12

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Visual Simulation – Fire Station Relocation and Housing Project
Viewpoint 3 (Shipley Street)

SOURCE: LEDDY MAYTUM STACY ARCHITECTS, 2011.

Although the proposed buildings would be taller than the existing industrial/commercial structure they would replace, no scenic views would be blocked since limited views are only available along an east/west transect on Folsom Street (views to the north and south are not available through the project site). The two proposed structures would be visible from the South of Market Recreation Center, and from streets in the vicinity of the project site, but the change in view associated with the Fire Station Relocation and Housing Project would not be considered substantial or adverse because the change would not degrade a view corridor or scenic vista.

Of the reasonably foreseeable development projects in the vicinity of the project sites, the ones that would have the greatest potential to result in cumulative changes to aesthetic conditions are: 1) the 550-foot residential tower at 706 Mission Street (which would include 220 residential units and the Mexican Museum), just northwest of the SFMOMA Expansion site and 2) the 900 Folsom Street/260 Fifth Street mixed-use project, located just east of the Fire Station Relocation and Housing Project site, which would contain 448 residential units, 9,560 square feet of retail space, and 323 parking spaces. These projects would change the skyline of the area by replacing lower-rise buildings with taller buildings and would introduce new ground floor-level treatments to the streetscape. However, these projects would not be expected to result in significant adverse aesthetics impacts that would combine with the less-than-significant aesthetics impacts associated with the proposed project to result in greater adverse impacts.

These reasonably foreseeable projects, in combination with the proposed projects, would result in intermittent aesthetics impacts due to construction activities. Construction activities that could have temporary effects on visual quality include ground disturbance, the use of heavy machinery, and the installation of safety fencing. Such changes to the visual environment are an unavoidable temporary outcome of development projects. However, such conditions would exist only for a limited duration. The construction period for the SFMOMA Expansion would extend up to 2 years and the construction period for the Fire Station Relocation and Housing Project would extend up to 1 year each. Following construction of Fire Station No. 1 at 935 Folsom Street, the southern portion of that property (designated for the multi-family residential project) would be seeded with a wildflower mix, reducing the visual impact of the future construction site. Because construction-related changes to visual character would be short-lived, they would not be considered significant.

The reasonably foreseeable projects would change the City's skyline in addition to the character and feel of the streetscape. They would contribute to incremental change in visual character, but this change would be consistent with that anticipated for the area as part of area plans, including the East SoMa Area Plan and the Transit Center District Plan. In addition, like the proposed projects, these pipeline projects would contribute minor amounts of new light and glare to the area, but such light and glare would not be significant with adherence to applicable provisions of the City's Building Code.

In the context of the less-than-significant impacts of the proposed projects on aesthetic resources and the anticipated less-than-significant effects on aesthetic resources of nearby planned projects, the proposed projects would not be expected to make a significant cumulative contribution to the degradation of visual resources in the area.

C. CULTURAL RESOURCES

This section discusses the potential of the proposed SFMOMA Expansion and Fire Station Relocation and Housing Project to adversely affect cultural resources, which are buildings, structures, objects, and districts over 50 years old[1] that may have traditional or cultural value for the historical significance they possess. The potential for the proposed projects to result in adverse impacts to archaeological deposits, paleontological resources, and human remains was addressed in the Initial Study (see pages 67 to 79 of the Initial Study, included as Appendix A) and are not discussed in this section.

This section begins with a summary of the cultural resources setting of the project sites. Following the setting, the section presents the significance criteria used to determine whether an impact to historic resources would be considered significant. Finally, potential impacts to cultural resources are assessed, and, where necessary, mitigation measures are identified.

Setting

This subsection describes the cultural resources setting of the project sites. The setting consists of: 1) the regulatory setting for cultural resources; 2) a brief summary of the historical background of the project sites; and 3) a description of known historical architectural cultural resources in the project sites.

This setting draws upon background information and historical resource evaluations including: *Historic Resource Evaluation, 676 Howard Street* (Page & Turnbull, 2010); *Historic Resource Study, 15 Hunt Street (670 Howard Street)* (Page & Turnbull, 2009); *Historic Resource Evaluation Response for 670 Howard Street/15 Hunt Street and 676 Howard Street (Case No.: 2009-0291E)* (San Francisco Planning Department, 2009); and the *Historic Resource Evaluation Response for 935 Folsom Street (Case No.: 2006.0241E)* (San Francisco Planning Department, 2008). The Historic Resource Evaluation Responses are provided in Appendix B to this EIR. A records search (File No. 10-0603) was conducted on

[1] Fifty years is used as a general estimate of the time needed to understand the historical importance of a resource (California Office of Historic Preservation 2006; CCR Title 14(11.5) Section 4852 (d)(2)).

December 22, 2010 at the Northwest Information Center (NWIC) of the California Historic Resources Information System at Sonoma State University in Rohnert Park.

Regulatory Setting. This subsection describes the environmental statutes, State and local codes, and registration programs that apply to cultural resources within and around the project sites.

California Environmental Quality Act (CEQA). CEQA applies to all discretionary projects undertaken or subject to approval by the State's public agencies.[2] CEQA states that it is the policy of the State of California to "take all action necessary to provide the people of this state with… historic environmental qualities . . . and preserve for future generations examples of the major periods of California history."[3] Under the provisions of CEQA, "A project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment."[4]

CEQA Guidelines Section 15064.5(a) defines a "historical resource" as a resource which meets one or more of the following criteria:

- Listed in, or eligible for listing in, the California Register;
- Listed in a local register of historical resources (as defined at Public Resources Code (PRC) Section 5020.1(k));
- Identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or
- Determined to be a historical resource by a project's lead agency.[5]

A historical resource consists of: "Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the

[2] California Code of Regulations [CCR] 14(3) Section 15002(i).

[3] Public Resources Code [PRC] Section 21001(b), (c).

[4] CCR 14(3) Section 15064.5(b).

[5] CCR 14(3) Section 15064.5(a).

architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California … Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the California Register of Historical Resources."[6]

CEQA requires that historical resources be taken into consideration during the planning process.[7] If feasible, adverse effects to the significance of historical resources must be avoided, or the effects mitigated.[8] The significance of a historical resource is impaired when a project demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for the California Register of Historical Resources. If there is a substantial adverse change in the significance of a historical resource, the preparation of an environmental impact report may be required.[9]

Because the potential for impacts to archaeological deposits and paleontological resources was addressed in the Initial Study prepared for the proposed projects (see Appendix A, pages 70 to 79), the regulations pertaining to unique archaeological and paleontological resources under CEQA are not discussed in this section.

<u>California Register of Historical Resources</u>. The California Register of Historical Resources (California Register) is a guide to cultural resources that must be considered when a government agency undertakes a discretionary action subject to CEQA. The California Register helps government agencies identify and evaluate California's historical resources, and indicates which properties are to be protected, to the extent prudent and feasible, from substantial adverse change.[10] Any resource

[6] CCR 14(3) Section 15064.5(a)(3).

[7] CCR 14(3) Section 15064.5; PRC Section 21083.2.

[8] CCR 14(3) Section 15064.5(b)(4).

[9] CCR 14(3) Section 15065(a).

[10] PRC Section 5024.1(a).

listed in, or eligible for listing in, the California Register is to be considered during the CEQA process.[11]

A cultural resource is evaluated under four California Register criteria to determine its historical significance. A resource must be significant in accordance with one or more of the following criteria:

- Criterion 1 (Events): Is associated with events that have made a significant contribution to the broad pattern of California's history and cultural heritage;
- Criterion 2 (Persons): Is associated with the lives of persons important in our past;
- Criterion 3 (Architecture): Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Criterion 4 (Information Potential): Has yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting one or more of the above criteria, the California Register requires that sufficient time must have passed to allow a "scholarly perspective on the events or individuals associated with the resource." Fifty years is used as a general estimate of the time needed to understand the historical importance of a resource.[12] In order to protect potential resources, the State of California Office of Historic Preservation recommends documenting, and taking into consideration in the planning process, any cultural resource that is 45 years or older.[13]

The California Register also requires a resource to possess integrity, which is defined as "the authenticity of a historical resource's physical identity evidenced by the survival of characteristics

[11] California Office of Historic Preservation, 2001.

[12] CCR 14(11.5) Section 4852 (d)(2).

[13] *Instructions for Recording Historical Resources*, California Office of Historic Preservation, March 1995. Website: www.ohp.parks.ca.gov/pages/1054/files/manual95.pdf. The 45-year criterion is in place to account for a projected 5-year interval between resource identification and planning decisions. The criterion ensures that resources that will reach the age requirement in the interim are fully considered during the environmental review and decision-making processes.

that existed during the resource's period of significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association."[14]

Resources that are significant, meet the age guidelines, and possess integrity will generally be considered eligible for listing in the California Register.

Multiple Property Listings.[15] Both the National Register of Historic Places and California Register allow for nomination of a Multiple Property Listing (MPL) for "related properties." According to the National Park Service, an MPL application may be used to nominate and register thematically-related historic properties concurrently or establish the registration requirements for as-yet unknown properties that may be nominated in the future. The theme(s) underlying the historic context may be based on specific events and activities or patterns of physical or cultural development related to one or several areas of significance. Related properties may have significance related to their history, architecture, engineering, archaeology, or culture, or a combination of thematic characteristics, and may meet one or more of the National or California Register criteria. The MPL streamlines the method for organizing information collected via surveys and background research for use in resource nomination and preservation planning.

Local Registers of Historical Resources. The Planning Department considers a listing of historical resources approved by ordinance or via resolution of the Board of Supervisors or the Planning Commission to be a local register of historical resources for the purposes of CEQA.

Here Today. *Here Today* was the earliest survey completed by the Junior League of San Francisco. Adopted by the Board of Supervisors under Resolution No. 268-70, *Here Today* documents approximately 2,500 properties within the City and County of San Francisco. The survey files are located in the History Center at the Main Branch of the San Francisco Public Library. Generally, *Here Today*

[14] *California Register and National Register: A Comparison (for purposes of determining eligibility for the California Register)*, California Office of Historic Preservation, Technical Assistance Series #6, N.D. Website: www.parks.ca.gov/pages/1069/files/Technical%20Assistance%20Bulletin%206%202011%20Update.pdf

[15] *National Register Bulletin 16B: How to Complete the National Register Multiple Property Designation Form, 19914*, U.S. Department of the Interior, 1991, revised 1999. Website: www.nps.gov/nr/publications/bulletins/nrb16b/.

focuses on buildings and structures of conspicuous architectural quality – primarily public buildings and notable private properties. *Here Today* contains a brief section pertaining to SoMa, consisting of the waterfront area from Market Street to the San Mateo County Line. No properties in the immediate vicinity of the project sites were identified in *Here Today*. Along Folsom Street, *Here Today* identified two properties, 2533 Folsom Street (built ca. 1885) and 3340 Folsom Street (built ca. 1880). These properties are both houses located on the sites of former farms and located well to the south of the project sites in the Mission District and Bernal Heights, respectively.

1976 Citywide Architectural Survey. In 1974, as the American Bicentennial was approaching, the San Francisco Planning Department began conducting a City-wide survey of architecturally significant buildings. The survey generated an inventory, which grew to over 10,000 properties. This survey was primarily a visual inventory of urban design quality and did not consider cultural or historical significance. The unpublished survey, consisting of sixty volumes of data, is on file at the Planning Department. When completed, the 1976 Architectural Survey was considered to represent 10 percent of the City's building inventory. The survey was adopted by the Board of Supervisors under Resolution No. 7831 in 1977, and the Planning Department has been directed to use it, although the methodology is inconsistent with current *CEQA Guidelines* PRC 5024.1(g). The survey did not assign a rating to the properties at 676 Howard Street, 670 Howard Street, or 935 Folsom Street.[16]

San Francisco Architectural Heritage. San Francisco Architectural Heritage (Heritage) is the oldest non-profit organization in San Francisco dedicated to educating the public about historic resources and advocating for their preservation. Heritage has sponsored several historic resource inventories of various neighborhoods throughout the City. The earliest of these was the *Downtown Survey*, completed in 1978 by Michael Corbett, and subsequently published in 1979 as *Splendid Survivors*. The *Downtown Survey* consisted of a survey of the Financial District, the Union Square Retail District, and the Market Street Corridor areas. These districts comprise the primary survey area. A small portion of the South of Market Area falls within this primary survey area, encompassing the area bounded on

[16] *Historic Resource Evaluation Response, 935 Folsom Street*, San Francisco Planning Department, April 24, 2009; *Historic Resource Evaluation Response: 670 Howard Street aka 15 Hunt Street [&] 676 Howard Street*, San Francisco Planning Department, June 30, 2010. These documents are available as Appendix B of this EIR and at the Planning Department in Case File No. 2006.0241E.

the north by Market Street, on the east by Beale Street, on the south by Mission Street, and on the west by Fourth Street. In addition, the primary survey area also included a narrow, one-property-deep strip along New Montgomery Street that extended as far south as Howard Street.[17]

The background research in *Splendid Survivors* for the most part augmented the findings of the 1976 Citywide Architectural Survey. The *Splendid Survivors* survey lists 670 Howard Street (15 Hunt Street) on the SFMOMA Expansion site as a 'C**' in Heritage's Downtown Survey. C-rated buildings are of contextual importance and provide a "backdrop" for higher-rated 'A' and 'B' properties. The 670 Howard Street building is located within a group of similarly-rated 'C' buildings located on the 600 block of Howard Street adjacent to the SFMOMA Expansion site. The two asterisks following the C rating indicate that the building would be considered for a higher 'B' classification (indicating "Major Importance") if alterations to the structure made in 1982 were reversed. 676 Howard Street is not listed in *Splendid Survivors*.

The Downtown Area Plan. The Downtown Area Plan, a component of the San Francisco General Plan, contains policies and guidance for the development of the downtown area, an important part of the City which is known for a "compact mix of activities, historical values, and distinctive architecture and urban forms that engender a special excitement reflective of a world city."[18] Please refer to Chapter III, Plans and Policies, for a discussion of the Downtown Area Plan. The Downtown Area Plan encompasses the SFMOMA Expansion site. To preserve tangible connections with the City's past, Objective 12 of the Downtown Area Plan calls for conservation of those resources that provide connections with the various eras of the City's historical development. Pursuant to this objective, the Downtown Area Plan contains a ratings method for evaluating potential historical resources. Outlined in Article 11 of the San Francisco Planning Code, these categories are numbered via Roman numerals (I-V), where Category "I" buildings are of the highest importance and are considered "excellent" in terms of architectural design and qualities. Category "II" buildings are considered to be in virtually the same category as Category "I" buildings, except provisions are made for structural

[17] Ibid.

[18] *Downtown Area Plan*, San Francisco Planning Department, August 4, 2009. Website: www.sf-planning.org/ftp/general_plan/Downtown.htm.

additions. Category "III" and "IV" structures are considered contributory or "contextual" buildings that provide a historical milieu for the higher-rated Category "I" and "II" structures. Category "V" buildings are either unrated due to lack of sufficient age or due to extensive modifications.[19]
670 Howard Street and 676 Howard Street were assigned a Category "V" rating, meaning they are either unrated or are considered non-contributory.

Unreinforced Masonry Building (UMB) Survey. Following the 1989 Loma Prieta earthquake, the then San Francisco Landmarks Advisory Board commenced a survey of all identified UMBs within San Francisco. Anticipating the demolition of many structurally compromised UMBs as a result of seismic activity, the San Francisco Department of City Planning (precursor to the Planning Department) developed background data about UMBs for use in significance evaluations. The completed report, *A Context Statement and Architectural/Historical Survey of Unreinforced Masonry Building (UMB) Construction in San Francisco from 1850 to 1940*, was published in 1990. A copy is located in the History Center of the San Francisco Public Library. The UMB survey does not assign specific ratings, but rather inventories ratings compiled from previous survey efforts. The building within the SFMOMA Expansion site located at 670 Howard Street is included in the survey.

San Francisco Planning Department Preservation Bulletin 16.[20] The San Francisco Planning Department has issued a Preservation Bulletin (No. 16), titled *San Francisco Planning Department CEQA Review Procedures for Historic Resources*, which integrates the *CEQA Guidelines* into the City's existing regulatory framework. As a certified local government and CEQA lead agency for the City and County of San Francisco, the San Francisco Planning Department has instituted guidelines and a system for CEQA review of historic resources. The following categories have been established for use in determining the significance of historic resources, based upon their evaluation and inclusion in specific registers or surveys:

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[19] *San Francisco Preservation Bulletin No. 11: Historic Resource Surveys*, San Francisco Planning Department, January 2003. Website: sfpsociety.org/historicresource.html.

[20] *San Francisco Preservation Bulletin No. 16: CEQA Review Procedures for Historic Resources*, San Francisco Planning Department, March 31, 2008. Website: www.sfplanning.org/Modules/ShowDocument.aspx?documentid=5340.

Category A: Historic resources (divided into two sub-categories):

Category A.1: Resources listed on or formally determined to be eligible for the California Register. These properties will be evaluated as historic resources for the purposes of CEQA. Only a change in the property's status as listed in, or determined to be eligible for listing in, the California Register of Historical Resources by the California Historic Resources Commission will preclude evaluation of the property as a historical resource under CEQA.

Category A.2: Adopted local registers, and properties that have been determined to appear or may become eligible, for the California Register. These properties will be evaluated as historical resources for purposes of CEQA. Only a preponderance of the evidence demonstrating that the resource is not historically or culturally significant will preclude evaluation of the property as a historical resource. In the case of Category A.2, resources included in an adopted survey or local register, the "preponderance of the evidence" must generally consist of evidence that the appropriate decision-maker has determined that the resource should no longer be included in the adopted survey or register. Substantiated and uncontroverted evidence of an error in professional judgment or a clear mistake, or destruction of the property may also be considered a "preponderance of the evidence that the property is not an historic resource."

Category B: *Properties requiring further consultation and review.* Category B includes properties that do not meet the criteria for listing in Categories A.1 or A.2, but for which the City has information indicating that further consultation and review will be required to evaluate whether a property is a historical resource for the purposes of CEQA.

Category C: Category C includes properties that have been affirmatively determined not to be historical resources, properties less than 50 years of age, and properties for which the City has no information.

San Francisco City Landmarks. San Francisco City Landmarks are buildings, properties, structures, sites, districts, and objects that possess "special character or special historical, architectural or aesthetic interest or value and that are an important part of the City's historical and architectural heritage."[21] City Landmarks are important to San Francisco's history and are significant and unique examples of the past. Adopted in 1967 as Article 10 of the City Planning Code, City Landmarks are protected from inappropriate alterations and demolitions, with all significant alterations reviewed by the Historic Preservation Commission. As of January 2011, there are 261 landmark sites and eleven historic districts in San Francisco subject to Article 10. There are no Article 10 landmarks or historic districts on or adjacent to the project sites.

San Francisco Downtown Significant and Contributory Buildings and Conservation Districts. Article 11 of the City Planning Code (*Preservation of Buildings and Districts of Architectural, Historical, and Aesthetic Importance in the C-3 Districts*) contains procedures for the designation of important buildings (Significant Buildings, Category I and II; Contributory Buildings, Category III and IV; and Unrated Buildings, Category V) and conservation districts, as well as for the review of changes to, or removal of, such properties in the Downtown Area. There are no Article 11 Significant or Contributory Buildings on or adjacent to the SFMOMA Expansion site (the Fire Station Relocation and Housing Project site is outside the Downtown Area). The New Montgomery-Second Street Conservation District is approximately 340 feet east of the SFMOMA Expansion site. Figure IV.C-1 shows the existing New Montgomery-Second Street Conservation District in relation to the Second and Howard Streets National Register Historic District as well as changes to the District boundaries proposed as part of the Planning Department's draft Transit Center District Plan.

Transit Center District Plan Survey. The draft Transit Center District Plan is a comprehensive plan for the southern portion of the downtown Financial District, roughly bounded on the north by Market Street, on the east by the Embarcadero, on the south by Folsom Street, and on the west by Third Street (Plan Area). The Transit Center District Plan would result in new planning policies and controls for land use, urban form, and building design, as well as impact fees and other funding mechanisms to direct funding to the Transit Center and Caltrain Downtown Expansion projects and other public infrastructure in the area. The Plan includes a comprehensive program for improvements and

[21] *San Francisco Preservation Bulletins Numbers 1-21*, San Francisco Planning Department, May, 2004. Website: www.sfgov.org/site/planning_index.asp?id=24996.

changes to streets, circulation patterns, and open space in the area to support intensified office and residential uses in the area.[22]

The Transit Center District Plan Survey Area encompasses both the New Montgomery-Second Street Conservation District and the Second and Howard Streets National Register Historic District, two districts that partially overlap (see Figure IV.C-1). The Transit Center District Plan includes an approach to protection of the districts that retains the majority of the resources of the partially overlapping New Montgomery-Second Street Conservation District and the Second and Howard Streets National Register Historic District and combines them into a New Montgomery and Mission Conservation District. The new proposed district would consist of 123 parcels and contain 89 contributing elements (thus 72 percent of parcels would contain contributing elements), and would be potentially eligible for listing in the California Register under Criteria 1 (Events) and 3 (Architecture).[23] No buildings on the SFMOMA Expansion site are proposed to be included in the expanded Conservation District.

South of Market Area Survey. In 2007, the Planning Department initiated the Eastern Neighborhoods SoMa Area Plan and Western SoMa Community Plan Historic Resource Survey (SoMa Survey). The purpose of the SoMa Survey was to assemble historic information about the built environment within the study area (bounded by Mission Street on the north, First Street on the east, Townsend Street on the south, and Thirteenth Street on the west) and determine the significance of identified resources, including potential eligibility for inclusion in the National and California Registers. The SoMa Survey resulted in the identification and documentation of over 1,400 properties constructed before 1962. Of these properties, only one property on the project sites was identified as a resource. The industrial/commercial building located at 935 Folsom Street (within the Eastern SoMa Plan Area), built in 1923, was assigned a California Historic Resource Data Code[24] of "3CS," meaning that it "Appears Eligible

[22] *Transit Center District Plan, Draft for Public Review, San Francisco, California.* November 2009. Website: www.sf-planning.org/ftp/CDG/docs/transit_center/Transit_Center_District_Plan_Public_Draft_WEB.pdf.

[23] Ibid.

[24] *California Historic Resource Data Code*, California Office of Historic Preservation, December 8, 2003. Website: sf-planning.org/ftp/files/gis/SouthSoMa/CHRSC_Status_Codes.pdf.

for [the] CR [California Register] as an individual property through survey evaluation."[25] No other buildings or structures within the project sites were identified in the SoMa Survey.

Potential Western SoMa Light Industrial and Residential Historic District. The potential Western SoMa Light Industrial and Residential Historic District (District) is located in an urban area located in the western part of the SoMa Area Historic Resource Survey. The District is bounded on the north by Mission Street, on the east by Fifth Street, on the south by Harrison and Bryant Streets, and on the west by Twelfth Street – the area containing the most concentrated collection of resources representing development between 1906 and 1936. The potential District includes a total of 721 properties, 478 of which are identified as contributing elements. The selected properties possess a cohesiveness of building scale, typology, materials, architectural style, and relationship to the street.[26] The District was initially based on a 2007 context statement prepared by Kelley & VerPlanck, which was adopted by the then-named Landmarks Preservation Advisory Board as part of the South of Market Area Survey in 2009.[27] Subsequent to a preliminary assessment of the building located at 935 Folsom Street (on the Fire Station Relocation and Housing Project site), the Planning Department in 2009 determined that "while the exact boundaries of a district are yet to be determined, the subject property currently lies outside this potential district."[28] On February 16, 2011, the Historic Preservation Commission unanimously approved and adopted the SoMa Historic Resources Survey, an element of which is the potential Western SoMa Light Industrial and Residential Historic District.[29]

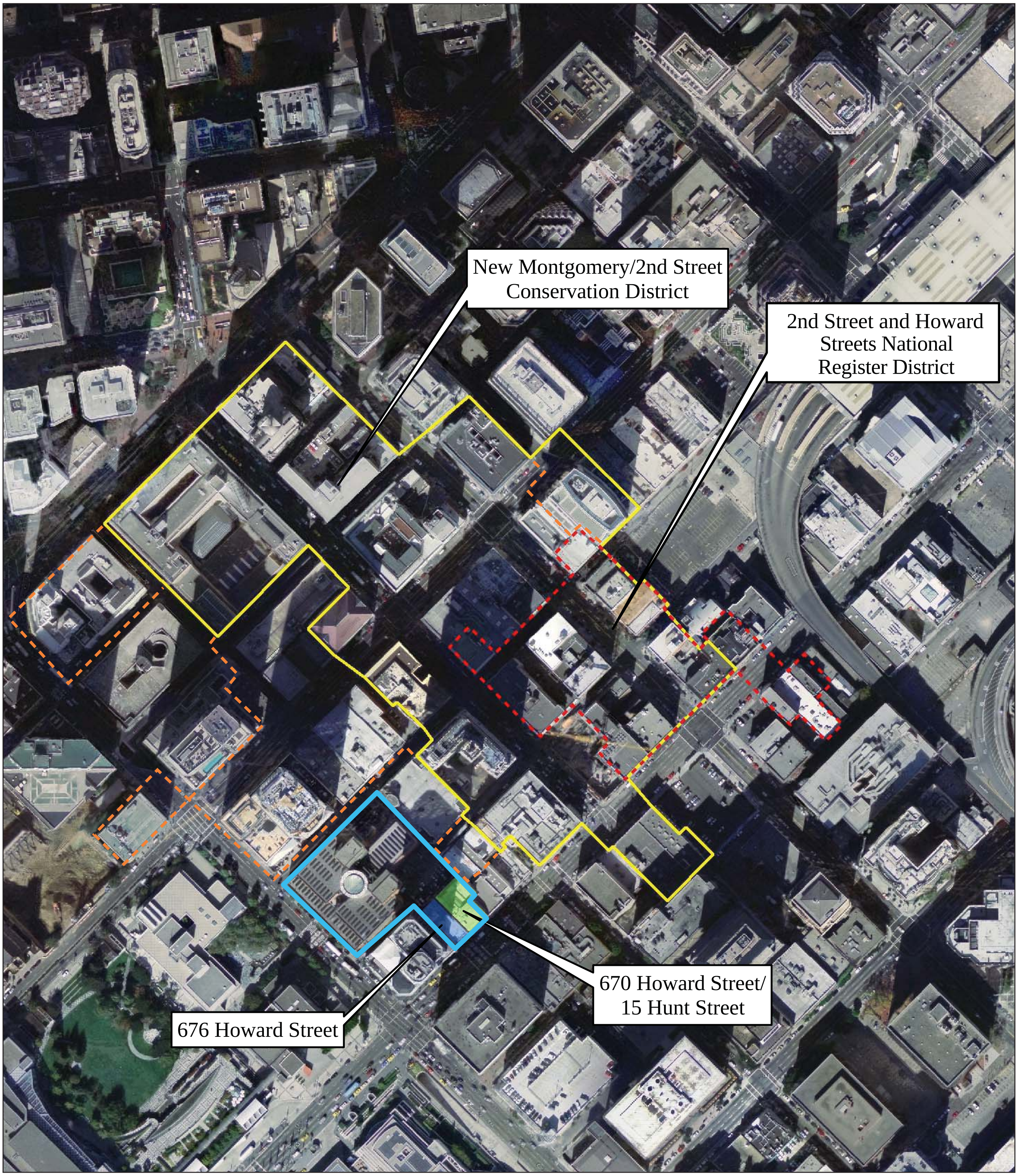
[25] *South of Market Historic Resource Survey*, San Francisco Planning Department, 2007. Survey results by address. Website: www.sf-planning.org/ftp/files/Preservation/soma_survey/ALL_SOMA_SurveyData_by_address.pdf.

[26] *Memorandum: Regarding 935 Folsom Street Eligibility for Listing in the California Register*, Page & Turnbull, November 18, 2009, Memorandum to Joel Roos, Pacific Union Development Company. This document is available at the Planning Department in Case File No. 2009.0291E.

[27] *Motion 0103*, *Adoption of SoMa Historic Resources Survey*, Historic Preservation Commission, February 16, 2011. Website: http://commissions.sfplanning.org/hpcmotions/M0103.pdf.

[28] *Historic Resource Evaluation Response, 935 Folsom Street*, San Francisco Planning Department, April 24, 2009. This document is available as Appendix B of this EIR and at the Planning Department in Case File No. 2006.0241E.

[29] *Motion 0103, Adoption of SoMa Historic Resources Survey*, Historic Preservation Commission, February 16, 2011. Website: http://commissions.sfplanning.org/hpcmotions/M0103.pdf.



2nd and Howard Streets National Register District
New Montgomery/2nd Street Conservation District
670 Howard Street/15 Hunt Street
676 Howards Street
SFMOMA Expansion Site
Proposed Boundary Amendment - New Montgomery, 2nd and Mission Streets Conservation District

N

0 150 300
FEET

SOURCES: CASIL ; LSA ASSOCIATES, INC., 2011.

FIGURE IV.C-1

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Historic Districts in the Vicinity of SFMOMA Expansion Site

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Project Area Historical Background.[30] This section presents the historical context of the project sites as well as property-specific information for 670 Howard Street (Heald Building; 15 Hunt Street), 676 Howard Street (Fire Station No. 1), and 935 Folsom Street.

Early San Francisco History. European settlement of what is now San Francisco took place in 1776, with the simultaneous establishment of the Presidio of San Francisco by the Spanish Army, and the establishment of Mission Dolores by Franciscan missionaries. The era of Spanish colonial rule was relatively brief. In 1821, Mexico declared independence, taking with it the former Spanish colony of Alta California. During the Mexican period a small village grew up along a sheltered cove at the tip of the San Francisco peninsula. This village, which was called Yerba Buena, served as a minor trading center inhabited by a few hundred people of diverse nationalities. In 1839 a few streets were laid out around a central plaza (now called Portsmouth Square), which was ringed by commercial and civic buildings. Not long after the American takeover of California in 1846, a surveyor named Jasper O'Farrell laid out Market Street from what is now the Ferry Building to Twin Peaks. Blocks north of the survey line were laid out in 50 vara[31] square blocks, whereas blocks south of Market Street were laid out in larger 100 vara blocks. In 1847, the name Yerba Buena was changed to San Francisco.

The discovery of gold at Sutter's Mill in 1848 unleashed a massive wave of immigration, as thousands of would-be gold-seekers made their way to San Francisco. Between 1846 and 1852, the population of San Francisco mushroomed from less than 1,000 people to almost 35,000. Development of early San Francisco was concentrated around downtown and Mission Dolores, and the outlying portions of the San Francisco Peninsula remained unsettled throughout most of the City's early history.

With the decline of gold production in 1855, San Francisco's business community began to embrace other economic opportunities such as agriculture, construction, and banking. In the following decades, San Francisco's population continued to grow owing to its position as the foremost financial,

[30] This section and the following historical background discussion are adapted from: *Historic Context Statement, South of Market Area, San Francisco, California*, Page and Turnbull, June 30, 2009. Website: www.sf-planning.org/Modules/ShowDocument.aspx?documentid=372.

[31] A *vara* is a Spanish unit of linear measurement equivalent to 2.77 feet. 50 varas equals 138.5 feet.

industrial, and shipping center of the West. By 1870 the population had reached 150,000, and just 20 years later the population had doubled to almost 300,000.

South of Market Neighborhood. The South of Market neighborhood (also known as SoMa) is located in the northeastern part of San Francisco. As the name suggests, the northern border of the neighbor-hood is Market Street, while the area is also roughly bounded by San Francisco Bay and the Embarcadero to the east, Mission Creek and Thirteenth Street to the south, and South Van Ness Avenue to the west. The northeastern part of SoMa (which is within the 2008 Transit Center District Survey Area), and contains the SFMOMA Expansion site, is bounded by Market Street to the north, Main Street to the east, Folsom Street to the south, and Third Street to the west. Historically, the northeastern part of SoMa has contained somewhat different building types and uses than the rest of the neighborhood because it has long been considered an extension of Downtown, combining commercial high-rises with working class light industrial and residential uses. It also developed earlier than the rest of the neighborhood, and was reconstructed at a faster pace following the 1906 earthquake and fire.

Prior to the Gold Rush of 1849, the easternmost part of SoMa was submerged under water, while the rest of the northeastern area was occupied by sand dunes and narrow wooded valleys. A protected area amidst the sand dunes, bounded by Market, Howard, First, and Second Streets, was first settled by squatters in 1849. The settlement was called “Happy Valley” by the Forty-niners, who erected tents and temporary wood houses there. This northeastern part of SoMa developed earlier than the rest of the neighborhood because it was located closest to Downtown. Market Street was not extended west of Ninth Street until 1860. Beginning in the 1850s, the 100-vara blocks were also subdivided into smaller, more easily-developable units through the creation of many narrow back alleys, including Minna, Natoma, and Hunt Streets.[32]

Northeastern SoMa continued to develop in the nineteenth century, and the residential settlement of inexpensive frame cottages and tenements was interspersed with a burgeoning iron foundry

[32] A vara is a Spanish unit of linear measurement equivalent to 2.77 feet. 100 varas equals 277 feet.

industry. By 1875, there were 42 foundries operating in SoMa, as well as lumber mills, flour mills, machine shops, carriage makers, and tool makers. The 1859 Comstock boom increased land prices in the neighborhood, and multi-story brick and stone buildings began to take the place of the simple Gold Rush-era frame dwellings. New Montgomery and Mission Streets, and First and Howard Streets included hundreds of saloons, groceries, dry goods stores, bakeries, butchers, shoemakers, seamstresses, public bathhouses, doctors and dentists, social organizations, houses of prostitution, and undertakers. Overcrowding became the norm as workers who needed to live within walking distance to their jobs doubled and tripled-up in apartments and flats. Areas south of Market Street that were once considered elite sectors, such as Rincon Hill and South Park, were converted from large single-family houses to rooming houses.

Beginning in 1869, residents atop Rincon Hill began to leave Rincon Hill for other residential areas north of Market Street when the Second Street Cut left a giant gash in Rincon Hill. The Second Street Cut was made in anticipation of the Central Pacific Railroad's construction of a transcontinental railroad terminus at Market and Second Streets. The former single-family properties were converted to apartments or boarding houses and formed the nucleus of a Greek immigrant community. At the same time, a dichotomy emerged as New Montgomery Street was constructed in the early 1870s to extend Montgomery Street south of Market Street. Though much of the area was working class and industrial in nature, New Montgomery Street was planned as an extension of Downtown, and became an upscale office, banking, retail, and hospitality district.

By 1900, the northeastern part of SoMa was completely built-out. However, on April 18, 1906, the neighborhood was nearly completely destroyed by a massive earthquake and the ensuing fires that erupted as a result of broken gas mains. The fires grew out of control as they were fed by the densely-packed wood-frame buildings. The entire neighborhood was consumed within 6 hours of the tremblor, and only a small handful of steel-frame, brick, and stone-clad buildings remained standing.

SoMa took at least a decade to recover. As the Transit Center District Plan Survey explains, "wrecked buildings had to be demolished and the ruins carted away, insurance claims settled, title questions resolved, land surveyed, building permits acquired, and materials and contractors secured. In many ways, the [SoMa] area was uniquely affected by the disaster due to uncertainty over whether pre-quake land uses, in particular wood-frame residential construction, would be allowed to be rebuilt." The Board of Supervisors dithered and associated uncertainty compelled many residential property owners to sell to real estate syndicates who assembled residential lots into larger commercial and industrial lots.

An initial flurry of building activity occurred between 1906 and 1913, and was largely characterized by new and reconstructed steel and heavy timber-frame industrial loft buildings housing light manufacturing, paper companies, printers and binderies, and wholesale warehouses. This building boom was followed by a recession that coincided with World War I. The market picked up again in the early 1920s, and many new reinforced concrete light industrial and commercial buildings were constructed during this time. Cafeterias, saloons, gambling parlors and pool halls, public baths, and other retail and service shops were established on Third Street between Market and Folsom Streets, while employment offices, missions, and other social service agencies were clustered on Howard and Folsom Streets.

Major changes to the northeastern part of SoMa occurred in the 1930s and the 1960s. Large public works projects in the 1930s altered the neighborhood, including construction of the San Francisco-Oakland Bay Bridge approach and the Transbay Terminal in 1936. In 1966, the San Francisco Redevelopment Agency approved the Yerba Buena Redevelopment Area (see discussion in Chapter III, Plans and Policies), which was created to counter the supposed "skid row" that had existed in northeastern SoMa. The urban renewal plan focused on an area bounded by Mission, Third, Harrison, and Fifth Streets, with the vision of replacing commercial, light industrial, and residential buildings with a civic arena, convention center, and parking garage. Though local working class residents vehemently opposed the plan, it was eventually carried out. Construction projects associated with redevelopment efforts included Moscone South (1981), Moscone North (1992), Yerba Buena Gardens (1994), the San Francisco Museum of Modern Art (1995), the Children's Center (1998), and Moscone West (2003). The two-square block Yerba Buena Center and Moscone Convention Center displaced approximately 4,000 residents and 700 businesses.

In addition, other parts of northeastern SoMa have been redeveloped, beginning in the 1970s, through the construction of many Corporate Modern, Brutalist, and Post-Modern style skyscrapers. Though clusters of earlier post-quake buildings remain, the population, building stock, and functional characteristics of northeastern SoMa have greatly changed since the mid-1900s.

After the 1906 earthquake and fire, the area around 935 Folsom Street was initially used by salvage companies, wrecking yards, and junk yards for post-quake clean up and materials salvage operations. Following this initial post-quake flurry of development, the area was gradually rebuilt and filled-in to provide manufacturing and warehousing space to support Downtown service industries, such as laundries, wholesalers, and offices. Designed by industrialists and developers, these buildings were of general light industrial design, typically with rectangular facades, multi-storied, and constructed of reinforced concrete. As a building type, this design peaked as a between 1923 and 1926. Alongside the primarily light industrial land use, the surrounding neighborhood also contained numerous multi-unit residential buildings that provided housing for local service and manufacturing workers. East SoMa has been the focus of increased residential construction in the last few decades.

Historical Architectural Resources Within and Adjacent to the Project Sites. The baseline conditions for historical architectural cultural resources within and adjacent to the project sites were identified from previous studies conducted by the historic architecture firm Page & Turnbull. The Page & Turnbull studies describe background research, including an archival records search and literature review, research at government offices, contacts with potentially interested parties, historical archival research, internet research, and field reviews (for a description of Page & Turnbull's methods, please see *Historic Resource Evaluation, 676 Howard Street* (Page & Turnbull, 2010) and *Historic Resource Study, 15 Hunt Street (670 Howard Street)* (Page & Turnbull, 2009).

Three potential cultural resources were identified within the project sites: 670 Howard Street; Fire Station No. 1. at 676 Howard Street; and a commercial/industrial building at 935 Folsom Street. Two conservation or historic districts (the New Montgomery-Second Street Conservation District and the Second and Howard Streets National Register Historic District) are in the vicinity of the SFMOMA

Expansion site (although neither district encompasses the site; see Figure IV-C-1). A brief summary of each resource and its status under CEQA is provided below.

670 Howard Street.[33] The 670 Howard Street site (located in the SFMOMA Expansion site, photo at right) appears to have been occupied by previous buildings as early as 1852. By 1859, the block of Howard Street between Second and Third Streets was completely lined with buildings. The 1887 and 1899 Sanborn Fire Insurance Maps reveal that the site was occupied in the late-nineteenth century by three attached single-family dwellings facing Howard Street and two duplexes and a detached single-family dwelling facing Hunt Street. All of the buildings were of wood-frame construction. Most had flat fronts, but two of the dwellings facing Howard Street featured angled bay windows. Most of the buildings on the surrounding block were also single-family dwellings and duplexes, though there were also flats, storage buildings, lodging houses, stores, and saloons. The commercial buildings primarily faced Third and New Montgomery Streets. All of these buildings were destroyed in the 1906 earthquake and fire.

670 Howard Street

The building at 670 Howard Street is located on the north side of Howard Street and is the neighbor to the east of 676 Howard Street (Fire Station No. 1) and was constructed just after the 1906 earthquake. A large number of other nearby buildings were also constructed in 1906. However, the entire block was not yet completely developed in 1915, and a large open lot still existed on the northeast end by New Montgomery Street. Open lots also existed on the block north of 670 Howard Street, bounded by Minna Street to the north, New Montgomery Street to the east, Hunt and Natoma Streets to the south, and Third Street to the west. However, buildings on the same block as 670 Howard Street, immediately to the east, contained a bicycle sundries shop, a store, and headquarters for the

[33] *Historic Resource Study, 15 Hunt Street (670 Howard Street), San Francisco, California*, Page & Turnbull, July 24, 2009. This document is available at the Planning Department in Case File No. 2010.0275E.

Underwriters Fire Patrol. Buildings to the west contained Fire Department Engine No. 4 and Water Tower No. 1, stores with lodgings above, and a print shop. The Salvation Army Hall, saloons and a restaurant, and the Hotel Albany faced Third Street between Hunt and Howard Streets. Other residential hotels in the vicinity included the Hotel Alta, Occidental Hotel, and Hotel Argus on Third, Hunt, and Minna Streets.

By 1950, the block was fully developed. The building at 670 Howard Street continued to have a commercial use, and most of the other buildings contained the same uses that had been operating 36 years earlier. The large open space toward New Montgomery Street now contained the 8-story New Montgomery Building, which was built in 1920 at 170-180 New Montgomery Street. On the block immediately north of the New Montgomery Building, the Pacific Telephone and Telegraph Co. constructed a 26-story neo-gothic building and garage in 1924 at 134-140 New Montgomery Street, between Minna and Natoma Streets (this building is called the Pacific Telephone Building in this EIR, but is also known as the Pfleuger Building and Pacific Telephone and Telegraph Building). These and other high-rise buildings exemplified the extension of Downtown San Francisco south of Market Street.

The urban renewal zone that allowed for development of the Yerba Buena Center and Moscone Center encompassed 670 Howard Street. Between the 1960s and 1990s, the character of the surrounding area changed as a result of that large-scale urban renewal project and further development of high-rise buildings. Immediately north of 670 Howard Street, SFMOMA was constructed in 1995 where several stores, the Hotel Argus, Occidental Hotel and Hotel Alta (residential hotels), and an alley called Sherwood Place had existed, according to the 1950 Sanborn Map. West of 670 Howard Street on the same block, the W Hotel, a 29-story, 410-room luxury boutique hotel, was constructed in 1999 where previously there had been several stores and the Hotel Albany. The W Hotel was the tallest concrete-frame structure in San Francisco for 3 years after its construction. 670 Howard Street was significantly altered in 1982 by its prior owner, Heald College, when the ground floor of the Howard Street façade was replaced and the fourth floor added.

The 670 Howard Street structure is a 4-story heavy timber-frame brick-clad industrial building. It was identified on the Unreinforced Masonry Buildings (UMB) Survey, was rated a "C**" (Contextual Importance) on the Heritage Downtown Survey (1976), and was designated a Category V (Unrated, or Non-Contributory) building as part of the Downtown Area Plan (Planning Code Article 11) in 1985. Since construction, the 670 Howard Street structure has undergone many alterations. In 1973, a replacement aluminum and glass storefront with rolling grilles was installed in place of the original aluminum and glass storefront. Beginning in 1982, significant alterations to the building included replacement exterior doors, hardware, and windows. The ground floor façade was completely altered to include scored concrete arches and a recessed outdoor entry vestibule with contemporary fixed glazing and fully-glazed double doors. The original massing was altered by a fourth floor roof penthouse addition in the same year, and the stepped brick parapets that terminate the third floor have been enlarged and fronted with concrete. Consequently, the integrity of materials, design and association has been compromised by the alterations and changes in function. The integrity of setting has also been somewhat compromised because contemporary offices, a high-rise hotel, the SFMOMA, and other small commercial buildings were constructed adjacent to the property and across Hunt and Howard Streets.

The Planning Department, based on a Page & Turnbull analysis, found that the 670 Howard Street structure does not appear to be individually eligible for the California Register or a contributor to a potential historic district. The alterations to the building coupled with the changes in setting have resulted in a resource that no longer retains sufficient integrity to be eligible for inclusion in the National or California Registers as a historical resource and does not retain enough integrity as a potential contributing element to a historic district. Therefore, 670 Howard Street does not qualify as a historical resource under CEQA.[34]

[34] Historic Resource Evaluation Response: 670 Howard Street aka 15 Hunt Street [&] 676 Howard Street, San Francisco Planning Department, June 30, 2010. This document is available as Appendix B of this EIR and at the Planning Department in Case File No. 2006.0241E.

676 Howard Street

676 Howard Street (Fire Station No. 1).[35] Prior to 1906, the site of 676 Howard Street (located in the SFMOMA Expansion site, photo at right) was occupied by a covered coal and wood yard and a stable with lodgings above. At the time, the building was located in a primarily residential neighborhood. Following the 1906 earthquake and fire, the northeast area was rebuilt with a new light industrial and commercial focus. A temporary firehouse was constructed on the site after the disaster, and contained Engine Co. No. 4 and Water Tower No. 1. The building was intended to be temporary, but continued to be used until sometime between 1913 and 1950. The 1913 Sanborn Fire Insurance Map shows that there was a 2-story rectangular building with a shallow setback from Howard Street and a slightly larger setback on Hunt Street. In addition to containing an engine and water tower, the building housed one steamer, one hose wagon, 1,550 feet of hose, and a total of 19 men and 11 horses.

The original building permit for the present firehouse was approved on April 11, 1957. The building was completed in 1958. The architect for the project was the firm of Blanchard & Maher, and the general contractor was Clovis Construction Co. The engineering firm was Wildman & Morris. The original plans by Blanchard & Maher, which are dated November 28, 1955, reveal a design nearly identical to the present exterior appearance of the building. The elevation drawings show 2 stories, a recessed penthouse floor partially concealed by the parapet, and a hose tower toward the rear of the building. The upper stories were to be clad in stucco, while the ground story was to be clad in granite. The rear elevation shows one pedestrian door to the west and two bands of windows on each of three floors. Ultimately, 676 Howard Street was constructed as a box-shaped building that occupied the entire parcel, and was of fireproof construction with reinforced concrete walls, stucco, and red-brown granite. The building currently functions as an active San Francisco Fire Department fire station.

[35] *Historic Resource Evaluation*, 676 Howard Street, San Francisco, Page and Turnbull, May 10, 2010. This document is available at the Planning Department in Case File No. 2010.0275E.

Between the completion of construction in 1958 and 1990, no major alterations appear to have occurred to the building. On July 30, 1991, a building permit was approved for alterations that included seismic reinforcement (including placing rebar, concrete, and bolts in concrete), adding a women's restroom, removing asbestos-containing material in selected locations, and removing the existing hose tower. On June 1, 1992, a permit was approved to install a fire sprinkler system for the basement area. On March 1, 1999, a permit was approved for repainting, reinstalling linoleum flooring, patching cement plaster cracks on the roof, and installing new modified bitumen roofing. Most recently, on November 6, 2003, structural and interior finish repairs were approved.

International Style Firehouses in San Francisco. The building at 676 Howard Street follows the firehouse design trend of the 1950s that is based on "the simple, more restrained European Bauhaus or International Style architecture, with thin walls and large ribbon windows characteristic of curtain-frame construction…Architects of fire stations in the 1950s sought to embody the light, boxy look even in buildings with traditional load-bearing walls." According to University of Michigan professor and author Rebecca Zurier, the box form achieved its popularity in the 1950s for two primary reasons: a perceived need for economy when constructing municipal buildings, and simply because the massing, materials and features were considered modern.[36]

1952 Firehouse Bond Act. The building at 676 Howard Street was constructed with funds from the 1952 Firehouse Bond Act (Proposition H, File No. 9395-3; Ordinance No. 7493) that provided $4.75 million for the construction and rehabilitation of firehouses throughout the City. The bond act evolved as part of a post-World War II nation-wide movement, under which cities began to analyze their needs systematically and make comprehensive plans to meet them. The 1952 Firehouse Bond Act was the San Francisco Fire Department's largest building program since the reconstruction effort following the 1906 earthquake and fire. Over the previous 80 years, San Francisco's firehouse system, including specific facilities, had become outdated and was in poor condition. For example, 12 firehouses were over 50 years old in 1952, and 28 were built to accommodate horse-drawn equipment.

[36] Ibid.

The bond issue was put before the San Francisco Board of Supervisors on August 15, 1952, endorsed on August 20, and the funds were approved on August 28. The Board of Supervisors approved funds to construct 19 new firehouses and reconstruct 23 existing firehouses, for a total of 42 firehouses. Following passage of the bond act, Fire Chief Walsh stated that he hoped for a 3-year program to complete construction and rebuilding of firehouses.

Ultimately, 17 new stations were constructed (11 totally new and six rebuilt) and 10 others were renovated to varying degrees. A handful of other firehouses also underwent minor repair. The building program lasted from 1953 to 1961. Seventeen of the 27 new and renovated firehouses feature similar International Style designs with aluminum-sash awning windows (sometimes in ribbons), and stucco, ceramic tile, and/or Roman brick wall cladding. From the 1950s through the early 1990s, the buildings were not substantially altered. Starting in 1992, and primarily occurring between 1994 and 1996, the stations were upgraded with seismic strengthening (including shear walls), new mechanical and electrical systems, access for disabled persons on the ground floors, remodeling of dormitories to include female bathrooms and locker rooms, and removal of hose towers.

The building at 676 Howard Street is not individually distinguished and is not individually eligible for listing in the California Register, but is a contributor to a potential California Register-eligible district. Fire Station No. 1 is a contributing element to the potential San Francisco 1952 Firehouse Bond Act Thematic Historic District,[37] a potential discontiguous historic district significant for its strong collection of International Style firehouses and as the largest firehouse building effort undertaken by the City. Fire Station No. 1 was found to be a contributor to this potential historic district. This potential historic district comprising 14 properties was identified by Page & Turnbull as part of the evaluation of Fire Station No.1. With the removal of one potentially contributing property (Station No. 41, 1325 Leavenworth), the San Francisco Planning Department concurred with Page & Turnbull's findings and determined that the San Francisco 1952 Firehouse Bond Act Thematic

[37] Ibid.

Historic District is eligible under Criteria 1 (significant events) and 3 (architectural qualities).[38] Figure IV-C.2 depicts the locations of the contributing elements of the Thematic Historic District.

The New Montgomery-Second Street Conservation District. The New Montgomery-Second Street Conservation District, which is an Article 11 District (a historical resource under CEQA) established as part of the Downtown Area Plan, extends southward from Market Street, generally encompassing both sides of Second and New Montgomery Streets, as far south as Howard Street. The Planning Department's draft Transit Center District Plan proposes extending the boundaries of the New Montgomery-Second Street Conservation District westward along Mission and Natoma Streets and renaming it the New Montgomery, Second and Mission Streets Conservation District, but the expanded boundaries would not encompass any of the properties in the SFMOMA Expansion site. The proposed expanded District would encompass areas along both sides of Mission Street between New Montgomery and Third Streets (except the northeast corner of Third and Mission Streets) and would cross Third Street to include the Aronson Building (700 Mission Street) on the northwest corner of Third and Mission Streets. The District would also extend westward on Natoma Street to Hunt Street (see Figure IV.C-1).

Exterior architectural features of this district include building massing that occupies the entire lot. Many structures on New Montgomery Street, built on large lots, have a horizontal width that exceeds their height (the Pacific Telephone Building at 134-140 New Montgomery Street being the primary exception), while buildings on Second Street tend to be more vertical in orientation and narrower. Masonry cladding on multi-dimensional wall surfaces expresses the mass and weight of the structure, simulating load-bearing walls, although many structures have steel frames. Almost all buildings have a two- or three-part compositional arrangement, with a base and shaft, and a capital for three-part buildings. Horizontal composition frequently includes a series of bays and a rhythmic pattern of windows. The scale of development varies; as noted, buildings on New Montgomery Street

[38] *Historic Resource Evaluation Response: 670 Howard Street aka 15 Hunt Street [&] 676 Howard Street*, San Francisco Planning Department, June 30, 2010. This document is available as Appendix B of this EIR and at the Planning Department in Case File No. 2006.0241E.

*NOTE: Fire Station #1 is also part of the SFMOMA Expansion Site

FIGURE IV.C-2

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Contributing Elements to the San Francisco 1952 Firehouse Bond Act Thematic Historic District

SOURCE: LSA ASSOCIATES, INC., 2011.

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are generally larger. Masonry predominates as exterior cladding. Terra cotta is also used, frequently glazed to resemble granite or other stones.

On Second Street, many buildings are faced in stucco. Treatment of the masonry at the lower levels expresses mass and weight. The color palettes tend towards light or medium earth tones. Detailing and ornamentation ranges from utilitarian, in the case of industrial brick and stucco office/warehouses, to ornately decorated office buildings. The details on the latter buildings are generally of Classical/Renaissance derivation and include projecting cornices and belt courses, masonry treatment, columns and colonnades, and arches. According to the Planning Code, the District, despite being located near the financial district and adjacent to a downtown growth area, is nevertheless "one of the few architecturally significant areas remaining largely intact in the South of Market area."

Among the buildings in this conservation district are five that are also individually listed in the California Register by virtue of having been found to be individually eligible for the National Register (buildings need not be actually listed on the National Register to be listed in the California Register, they need only be considered eligible for listing on the National Register). In addition to 631 Howard Street, these buildings include 20 Second Street, 609 Market Street, 170-180 New Montgomery Street, and 617 Mission Street. However, these buildings are not listed on the National Register. The conservation district is located to the east of the SFMOMA Expansion site. Between the closest conservation district contributor and the 670 Howard Street structure (moving from west to east along Howard Street) are 660 Howard Street, 658 Howard Street, and 648 Howard Street. The Planning Department determined that these properties, which are not located within the SFMOMA Expansion site, "do not possess sufficient integrity to be considered eligible individually or as contributors to a potential district."[39]

<u>Second and Howard Streets National Register District</u>. This district, which is generally contained within the New Montgomery-Second Street Conservation District (except that the National Register

[39] *Historic Resource Evaluation Response*: 670 Howard aka 15 Hunt and 676 Howard Street, San Francisco Planning Department, June 30, 2010. This document is available as Appendix B of this EIR and at the Planning Department in Case File No. 2006.0241E.

district extends eastward the distance of a few lots' width along both sides of Howard Street, to the east of the local district), is also associated with reconstruction after the 1906 earthquake and fire, and is united by buildings designed in the Commercial Style with limited Renaissance-Baroque ornament. The District was listed in the National Register of Historic Places in 1999 and is generally bounded by properties bordering Minna Street on the north; properties bordering Second Street and Malden Alley on the east; Tehama Street and Howard Street on the south; and New Montgomery Street on the west (see Figure IV.C-1). The District is also listed on the California Register.

This district contains 22 buildings, of which 19 were identified as contributors at the time the District was nominated in 1999. (The three non-contributors include two heavily-altered buildings and a vacant lot.) The contributory buildings are 3 to 7 stories in height, and all were built between 1906 and 1912, which corresponds to the District's "period of significance." According to the nomination form for this district, by 1910, the District was home to a plumbing supply house, nine electrical businesses, a terra cotta works, several engineers, metallurgists, a blueprint service, an asbestos supplier, and a sheet metal works, along with chemists and printers. As a result, "The scale and modesty of the buildings demonstrate their intended uses as different from the city's main office sector to the north crossing Mission and Market Streets and to the west along New Montgomery Street. They are also different from the industrial sector to the east and south."

The Second and Howard Streets National Register District and the New Montgomery-Second Street Conservation District share some degree of architectural character (particularly with regard to the buildings on Second Street in the local district, which, as noted above, are generally smaller in scale than those on New Montgomery Street) and have a common history in that almost all their buildings were constructed as part of the rapid rebuilding of downtown San Francisco in the aftermath of the 1906 earthquake and fire. The buildings in the Second and Howard Streets National Register District are generally smaller than those in the local district, because the buildings in the National Register district were typically constructed for what would today be identified as "production, distribution, and repair" (PDR) —that is, light industrial uses, whereas New Montgomery Street housed more office uses.

The Second and Howard Streets District was listed in the National Register under Criterion C, Architecture, in the context of San Francisco's rebuilding after the 1906 earthquake and fire. According to the nomination, "The district has a remarkable continuity of building type, scale, and style … All are masonry structures, half of them clad in brick, two in terra cotta (now painted), and the rest in stucco. All are Commercial Style with limited Renaissance-Baroque ornament. Ground floors are commercial and therefore, by design and practice, frequently altered to suit commercial needs. Upper floors most often are lofts." None of the buildings on the SFMOMA Expansion site are located within the Second and Howard Streets National Register District.

935 Folsom Street

935 Folsom Street.[40] The building located at 935 Folsom Street (within the Fire Station Relocation and Housing Project site; photo at right) was designed in 1923 by the San Francisco architectural firm of Meyer & Johnson (Frederick H. Meyer and Albin R. Johnson) for the Hotel Owners Laundry Company. The steam laundry company was previously located at 710 York Street. The business operated out of 935 Folsom Street from 1924 to 1982. The company's owners, Henry Fourcade, Jean Barbe, and Jean Capdeville, owned the building from 1923 to 1964. At that time, the building was transferred to the Hotel Owners Laundry Company's new president, John W. Flanagan, and others. After 1982, the building was sold to a couple from Hong Kong. It was vacant from 1982 to at least 1984, and for eight months in 1984 was occupied by about thirty squatter activists who converted the ground floor to a skateboard rink and used the mezzanine floor for living space. The property changed hands between several owners, who operated sewing businesses that vacated the building in about 2003, following reports of illegal sweatshop operations. The building has been vacant since that time.

[40] *Historic Resource Evaluation Response, 935 Folsom Street*, San Francisco Planning Department, April 24, 2009. This document is available as Appendix B of this EIR and at the Planning Department in Case File No. 2006.0241E.

Light Industrial Building Type. Light industrial buildings in SoMa are characterized by multi-purpose loft spaces that are used for light manufacturing, warehousing, and wholesale distribution. During the immediate post-quake period of 1906 to 1910, insurance settlements led to the construction of new, and in some cases, reconstructed light industrial buildings. These buildings were often constructed of brick masonry. Another building boom occurred in the early-to-mid-1920s. During this period, industrialists and developers constructed concrete 2-story and 3-story industrial loft structures on the plentiful empty lots, largely building out SoMa by 1929. Light industrial and warehouse buildings are most often rectangular in plan, and nearly all fill their entire parcels with the primary facades facing the street. Some 1-story buildings feature a second story office loft at the front of the building. Light industrial and warehouse buildings feature open interiors, large steel-sash industrial windows, and roll-up metal garage doors located on the primary or secondary façades. Ornamentation on these buildings is minimal and rendered in the Classical Revival, Spanish Colonial Revival, Art Deco, Art Moderne, or the 20th Century Industrial styles.

The Laundry Industry South of Market. When the Hotel Owners Laundry Company was first established in the new building, there were 186 laundry businesses in San Francisco, nine of which were located in SoMa. This number rose to 34 laundries in SoMa in 1930. By 1977, there were a total of 106 laundries and dry cleaners listed in the San Francisco City Directory, but only four were located in SoMa. In 1982, only two of those nine companies listed in 1924 remained in their original locations (Jim Bruce Laundry at 145 Eighth Street and Hotel Owners Laundry at 935 Folsom Street). There were a handful of other long-running laundry businesses in the neighborhood, including La Grande Laundry (located at 250 Twelfth Street from before 1875 to 1963), the Metropolitan Laundry (located at 1148 Harrison Street from 1907 to 1949), and the Galland Linen Service (also known as Galland Mercantile Laundry, located on Jessie Street from approximately 1894 to 1903 and at 335 Eighth Street from 1903 to 1969). The Hotel Owners Laundry Company outlasted most of its competitors in the steam laundry business in SoMa.

The building at 935 Folsom Street is a 1-story plus mezzanine reinforced concrete building designed with a Renaissance style with Spanish influences for a light industrial use. The property appears individually eligible for the California Register under Criterion 1 (Events) for association with the post-1906 reconstruction of SoMa, and under Criterion 3 (Architecture) for its architectural qualities and as a representative work of a master architect. The property would have been included as a contributing property in the potential Western SoMa Light Industrial and Residential Historic District based upon this context, but the south side of this block on Folsom Street where the building is located was excluded from the district as it does not sufficiently contribute to the District.[41] Because it is individually eligible for the California Register, 935 Folsom Street is considered a historical resource under CEQA.

Impacts

This section analyzes the impacts related to architectural cultural resources that could result from implementation of the projects. The section begins with the significance criteria, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the proposed projects. Mitigation measures are identified, as appropriate.

As noted above, the potential impacts of the projects on archaeological deposits, paleontological resources, and human remains are discussed on pages 67 to 79 of the Initial Study, included as Appendix A.

As discussed on page 68 of the Initial Study, the existing SFMOMA building was constructed in 1995 and designed by Mario Botta. Although the architecture of the building is distinguished, it is not considered a historic resource, based on its age. In addition, an expansion of the eastern side of the SFMOMA building was contemplated as part of the original design. The proposed SFMOMA Expansion would not be incompatible with the existing building and, as discussed in Section IV.B, Aesthetics, would not substantially or adversely affect the visual quality of the area.

Significance Criteria. A project would have a significant effect on the environment if it would cause a substantial adverse change in the significance of an historic resource. Public Resources Code Section

[41] *Historic Resource Evaluation Response, 935 Folsom Street*, San Francisco Planning Department, April 24, 2009. This document is available as Appendix B of this EIR and at the Planning Department in Case File No. 2006.0241E.

21084.1 states that "a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Implementation of the proposed projects would have a significant effect on architectural cultural resources if they would cause a substantial adverse change in the significance of a historic resource as defined in *CEQA Guidelines* Section 154064.5, including those resources listed in Article 10 or Article 11 of the San Francisco Planning Code.

A "substantial adverse change" is defined by *CEQA Guidelines* Section 15064.5 as "demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired." The significance of a historic resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics of a historic resource that convey its historical significance and that justify its inclusion in or eligibility for inclusion in the California Register, certain local registers, or certain historic resource surveys.

In general, project alterations that are consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (including the Standards for Rehabilitation) are presumed to not result in significant adverse affects to architectural cultural resources.[42]

Impact CP-1: The SFMOMA Expansion would result in the demolition of the building at 670 Howard Street, which is not considered a historic resource. (Less Than Significant)

The building at 670 Howard, also known as the Heald Building, is located on the north side of Howard Street and is the neighbor to the east of 676 Howard Street (Fire Station No. 1). The building is a 4-story heavy-timber frame, brick-clad, industrial building. It was identified on the Unreinforced Masonry Buildings (UMB) Survey, was rated a "C**" on the Heritage Downtown Survey, and was designated a Category V (Unrated, or Non-Contributory) building as part of the Downtown Area Plan. The building was significantly altered in 1982 when the ground floor of the Howard Street

[42] PRC 14(3) Section 15064.5(b)(3)

façade was replaced and the fourth floor added. The building at 670 Howard Street retains integrity of *location* and *association* with the rebuilding of the South of Market Area following the 1906 earthquake and fire. Although the building is associated with the reconstruction of the South of Market Area, it is one of many industrial/commercial buildings built at the time. Research failed to uncover a particularly specific or significant association with this transformative event in San Francisco history.

Integrity of *feeling*, *design*, *materials*, and *workmanship* are compromised for the building at 670 Howard Street due to extensive alterations to the main façade, the addition of a roof-top penthouse, replacement windows with new fenestration design, a recessed entrance, and the gradual transformation of the surrounding area from an industrial area to a service-oriented commercial and hospitality sector due to the construction of Yerba Buena Center beginning in the 1960s. The Planning Department determined that the 670 Howard Street structure lacks sufficient integrity to qualify as a historic resource.

The Planning Department has also determined that the structure is not located within a known or potential historic district eligible for inclusion in the California Register, due to a lack of sufficient integrity along the north side of Howard Street to convey potential significance as part of a historic district[43] (see Figure IV.C-1).

Therefore, the building at 670 Howard Street does not appear eligible for listing in the National or California Registers either individually or as a contributor to a district. The proposed demolition of the building would thus not materially impair the significance of a historical resource because the building does not qualify as such under CEQA. Therefore, the demolition of the building would be a less-than-significant impact under CEQA.

[43] *Historic Resource Evaluation Response: 670 Howard Street aka 15 Hunt Street [&] 676Howard Street*, San Francisco Planning Department, June 30, 2010. This document is available as Appendix B of this EIR and at the Planning Department in Case File No. 2006.0241E.

<u>Impact CP-2</u>: The SFMOMA Expansion would result in new construction adjacent to but not within the New Montgomery-Second Street Conservation District and the Second and Howard Streets National Register Historic District, but would not result in adverse impacts to the visual cohesion of the districts. (Less Than Significant)

As shown in Figure IV.C-1, there are two historic districts in the vicinity of the SFMOMA Expansion site, but neither encompasses the site. The two nearby districts, the New Montgomery-Second Street Conservation District and the Second and Howard Streets National Register Historic District, are located to the east and southeast of the site, respectively. With regard to the New Montgomery-Second Street Conservation District, the nearest District boundary to the SFMOMA Expansion site encompasses the parcel at 180 New Montgomery Street, located on the northwest corner of New Montgomery Street and Howard Street, currently occupied by a branch campus of the Academy of Art University. Moving west along Howard Street, there are three parcels on the north side of Howard Street (660 Howard Street, 658 Howard Street, and 648 Howard Street) that separate 180 New Montgomery Street from 670 Howard Street. The Planning Department has found that these properties do not possess sufficient integrity to be considered eligible individually or as contributors to a potential district.[44]

The westernmost boundary of the Second and Howard Streets National Register Historic District is the Merritt Building, a 6-story historic loft/office building constructed in 1907 located at 612 Howard Street, approximately 460 feet east of 670 Howard Street.[45] The distance between the westernmost contributing element to the Second and Howard Streets Historic District is further from 670 Howard Street than the New Montgomery Street-Second Street Conservation District (which is approximately 160 feet east of 670 Howard Street). Therefore, since the intervening parcels between 670 Howard Street and the Montgomery Street-Second Street Conservation District do not hold “sufficient integrity to be considered eligible individually or as contributors to a potential district,” then the same conclusion applies for the Second and Howard Streets National Register Historic District.

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[44] Ibid.

[45] *Directory of Properties in the Historic Property Data File for San Francisco County*, California Office of Historic Preservation October 10, 2010. On file at Northwest Information Center, Sonoma State University, Rohnert Park, California.

Figure IV.C-1 depicts the spatial relationship between the existing historic districts, the proposed changes to the New Montgomery-Second Street Conservation District boundaries included in the draft Transit Center District Plan, and the 670 Howard Street and 676 Howard Street buildings.

The expanded boundaries of the proposed New Montgomery, Second and Mission Streets Conservation District (comprising the New Montgomery-Second Street Conservation District and the Second and Howard Streets National Register Historic District) would not encompass the buildings at 670 Howard Street or 676 Howard Street.[46] The proposed SFMOMA Expansion would not modify or remove any historic fabric associated with either existing or expanded district. Since the two buildings within the SFMOMA Expansion site are not included within or adjacent to any formal district, impacts to the 670 Howard Street or 676 Howard Street buildings would not materially affect the significance of the New Montgomery-Second Street Conservation District and the Second and Howard Streets National Register Historic District (or the significance of a future New Montgomery, Second and Mission Streets Conservation District). Due to the visual cohesion of the districts and the varied massing, scale, and rhythm of buildings that surround the district boundaries, the type of construction proposed as part of the proposed SFMOMA Expansion would enable the districts to continue to convey their eligibility. Because the eligibility of the districts would remain intact, the proposed SFMOMA Expansion would not impair the districts' eligibility for listing, and the impact would be less than significant.

Impact CP-3: The SFMOMA Expansion would result in the demolition of the existing Fire Station No. 1 (676 Howard Street), a contributor to the potential San Francisco 1952 Firehouse Bond Act Thematic Historic District, a potential historical resource under CEQA. In combination with past, present, and reasonably foreseeable future projects, the SFMOMA Expansion would not contribute to a cumulatively considerable impact to the potential District. (Less Than Significant)

As previously discussed, Fire Station No. 1 at 676 Howard Street is considered a contributor to the potential San Francisco 1952 Firehouse Bond Act Thematic Historic District (District), which is a

[46] *Transit Center District Plan, Draft for Public Review, San Francisco, California*. November 2009. Website: http://www.sf-planning.org/ftp/CDG/docs/transit_center/Transit_Center_District_Plan_Public_Draft_WEB.pdf.

potential historical resource under CEQA. The District is a discontiguous property with 13 contributors, and appears eligible for listing in the California Register under Criterion 1 (Events) for its association with the Fire Station Bond Act of 1952, the first coordinated and comprehensive fire house building program in San Francisco's history, and under Criterion 3 (Architecture) as a collection of representative examples of the International Style, an aesthetic reflective of a mid-20th Century desire for economy in public building design and construction.[47] An evaluation of 676 Howard Street by Page & Turnbull concluded that the structure retains "nearly all its original features…very few alterations have been made…and [the building] retains integrity of *location*, *design*, *setting*, *materials*, *workmanship*, and *feeling*." Integrity of *association* is retained because the 676 Howard Street building is the third firehouse located at the site.[48] The Planning Department concurred with Page & Turnbull's evaluation of the 676 Howard Street building and noted the building type as a "representative example of International Style firehouses in San Francisco."[49] The contributing properties of the potential District that retain integrity are listed in Table IV.C-1 (see Figure IV.C-2 for a map of contributors).

These contributors can be organized according to three basic types of design and material use (however, these categorizations are intended for descriptive purposes, and not to identify impact pursuant to CEQA): Group 1 buildings are typified by structures with a large footprint that are stucco-clad, some with Roman brick accents, aluminum sash (ribbon) windows, several vehicular bays, and locations on street corners. Group 2 buildings are characterized by partial stucco cladding, aluminum sash (ribbon) windows, one to three vehicular bays, and mid-block sites. Group 3 buildings have design features that are different from Group 1 and 2 buildings.[50] The building at 676 Howard Street is a Group 2 building, one of a total of four Group 2 buildings that retain integrity

[47] *Historic Resource Evaluation Response, 670 Howard Street aka 15 Hunt Street and 676 Howard Street*, San Francisco Planning Department, June 30, 2010. This document is available as Appendix B of this EIR and at the Planning Department in Case File No. 2006.0241E.

[48] *Historic Resource Evaluation, 676 Howard Street, San Francisco,* Page and Turnbull, May 10, 2010. This document is available at the Planning Department in Case File No. 2010.0275E.

[49] *Historic Resource Evaluation Response, 670 Howard Street aka 15 Hunt Street and 676 Howard Street*, San Francisco Planning Department, June 30, 2010. This document is available as Appendix B of this EIR and at the Planning Department in Case File No. 2006.0241E.

[50] *Historic Resource Evaluation, 676 Howard Street, San Francisco, California*. Page and Turnbull. May 10, 2010. This document is available at the Planning Department in Case No. 2010.0275E.

(676 Howard Street, 1443 Grove Street, 1348 45th Avenue, and 109 Oak Street). The character-defining features of Group 2 buildings are: relatively small size; partial stucco cladding; aluminum-sash (ribbon) windows; one to three vehicular bays; and a mid-block location. The demolition of the 676 Howard Street building would leave three International Style Firehouses that fit within the Group 2 building design and materials description (and retain integrity).

Table IV.C-1: Contributing Properties to Potential 1952 Firehouse Bond Act Thematic Historic District

Fire Station	Group 1	Group 2	Group 3
2300 Folsom Street (Station No. 7)	X		
390 Buckingham Way (Station No. 19)	X		
1301 Turk Street (Station No.5)	X		
655 Presidio Avenue (Station No. 10)	X		
1145 Stanyan Street (Station No. 12)	X		
1295 Shafter Street (Station No. 17)	X		
1000 Ocean Avenue (Station No. 15)	X		
3880 26th Street (Station No. 11)	X		
676 Howard Street (Station No. 1)		X	
1443 Grove Street (Station No. 21)		X	
1348 45th Avenue (Station No. 23)		X	
109 Oak Street (Station No. 36)		X	
2150 California Street (Station No. 38)			X

Source: *Historic Resource Evaluation*, 676 Howard Street, San Francisco, California, Page and Turnbull, May 10, 2010.

The building at 676 Howard Street retains nearly all its original features and continues to be used as a firehouse. Aside from the addition of a women's restroom, the removal of the hose drying tower, and routine maintenance, no major alterations have been made. The building retains all aspects of *integrity, location*, *design*, *materials*, *workmanship*, *feeling*, *and association*. Integrity of *setting* has been compromised somewhat due to the gradual transformation of the surrounding area from an industrial area to a service-oriented commercial and hospitality sector due to the construction of Yerba Buena Center beginning in the 1960s.

Because the Fire Station No. 1 building is a contributor to the potential District, its demolition could affect the potential District. However, the Fire Station No. 1 building is not itself individually significant, and the 12 other contributors to the potential District would continue to possess and convey enough of the potential District's character-defining features to the degree that the potential District's significance would not be materially impaired as defined in *CEQA Guidelines* Section 15064.5(b)(2)(A). After demolition of Fire Station No. 1, the potential District would still possess the ability to justify its tentative eligibility for the California Register. In particular, the 12 other contributors to the potential District would adequately convey the potential District's association with the Fire Station Bond Act of 1952 and would comprise a representative collection of International Style public buildings built around the same time in San Francisco for a similar purpose. Therefore, the project-level impact would be less than significant.

No past, present, or reasonably foreseeable future projects have been identified that directly involve substantial physical changes to the 12 contributors to the potential District that would remain after demolition of Fire Station No. 1. Because no changes to the 12 contributors are anticipated, and the 12 contributors would be sufficient to maintain the integrity of the potential District even after demolition of Fire Station No. 1, the demolition of Fire Station No. 1 as part of the SFMOMA Expansion would not contribute to a cumulatively considerable impact to the potential District.

Impact CP-4: The Fire Station Relocation and Housing Project would result in the demolition of the industrial building at 935 Folsom Street, considered a historical resource. (Significant and Unavoidable)

The existing building on the Fire Station Relocation and Housing Project site (935 Folsom Street), which was constructed in 1923 and was previously used as a commercial laundry primarily serving area hotels and later as an apparel sewing factory, is identified as a historical resource. The Planning Department has determined that the building may be individually eligible for listing in the California Register based on its association with the redevelopment of SoMa following the 1906 earthquake and fire (Criterion 1), as well as for its representation of industrial architecture designed by a notable local architect (Criterion 3). As currently drawn, the potential Western SoMa Light Industrial and Residential Historic District does not include the section of the south side of Folsom Street where the 935 Folsom Street building is located. In a Historic Resource Evaluation Response dated April 24, 2009, the Planning Department determined that due to the overall loss of historical cohesiveness surrounding 935 Folsom Street, the width of Folsom Street, and the relative distance between the 935 Folsom Street building and the Western SoMa Light Industrial and Residential Historic District, the proposed Fire Station Relocation and Housing Project would not have an adverse effect on off-site historical resources, and, thus a boundary extension to encompass the building was not justified.[51]

While the demolition of the building located at 935 Folsom Street would have no material impact on the Western SoMa Light Industrial and Residential Historic District or to any potential historic resources nearby, it would result in a significant impact to a historical resource. The demolition of the building would result in the material impairment of its significance through the loss of historic fabric that conveys its significance and justifies its California Register eligibility under Criteria 1 (Events) and 3 (Architecture). Therefore, the demolition of the building would be considered a significant impact under CEQA. Mitigation Measure CP-4 would reduce the severity of this impact, but not to a less-than-significant level.

> Mitigation Measure CP-4: To partially offset the demolition of the building at 935 Folsom Street, the project sponsor shall retain an architectural historian to complete architectural documentation that meets Historic American Building Survey (HABS) standards prior to demolition. The survey shall be done in accordance with HABS level II documentation standards and shall include the following measures:
>
> - Prior to demolition, the project sponsor shall provide adequate documentation of the existing building. The documentation shall be submitted to the San Francisco Planning Department and approved prior to the authorization of demolition. The sponsor shall prepare and transmit the photographs and descriptions of the property to the Northwest Information Center of the California Historical Resources Information System and the History Room of the San Francisco Public Library. The documentation shall include:

[51] *Historic Resource Evaluation Response, 935 Folsom Street.* San Francisco Planning Department, April 24, 2009. This document is available as Appendix B of this EIR and at the Planning Department in Case File No. 2006.0241E.

- Digital videography of the building to document its exterior character-defining features, as determined by a qualified architectural historian.
- Photo-documentation of the buildings to HABS Standards.

Completing a historical resources survey to HABS level II documentation standards would reduce Impact CP-4, but not to a less-than-significant level. Therefore, the impact would be significant and unavoidable.

Impact CP-5: The SFMOMA Expansion would not obscure a wall-painted advertisement on the west façade of the building at 161 Natoma Street, a structure that is a historical resource under CEQA. (Less Than Significant)

The structure located at 161 Natoma Street is a light industrial building type constructed in 1918 in SoMa, and is adjacent to the eastern boundary of the SFMOMA Expansion site. The character-defining features of the light industrial building type are brick masonry, finished in concrete scored to resemble ashlar masonry. The building is rectangular in plan with 100 percent parcel coverage, minimally decorated primary façades facing the street, large and open interiors with timber or steel truss framing, large metal (steel) sashed windows with sky lights, and large rollup garage doors. The west elevation of the building (facing Hunt Street) has a painted sign that reads "FLAG MAKERS." This painted sign is visible from Hunt Street within the SFMOMA Expansion site.

According to a 2007 evaluation by Christopher VerPlanck, the building at 161 Natoma Street appears eligible for listing in the California Register under Criterion 1 (Events) for its association with the Emerson Flag Company, the oldest flag maker in San Francisco and the second oldest in the United States; and under Criterion 3 (Architecture) as a representative example of an early 20th century light industrial building.[52] According to the Directory of Properties in the Historic Property Data File for San Francisco County, 161 Natoma Street has not been assigned a California Historical Resource

[52] *161 Natoma Street, California State Department of Parks and Recreation DPR 523 Forms*, Christopher VerPlanck, November 2, 2007. This document is available at the Planning Department in Case File No. 2010.0275E.

Status Code. It received a rating of "V" in the City's Downtown Area Plan and a rating of "B" in the San Francisco Architectural Heritage Survey. It was also surveyed as part of the 1990 Unreinforced Masonry Building Survey. In 2007, the building was surveyed by VerPlanck and assigned a California Historical Resource Status Code of "3CD," indicating that it appears to be eligible for listing in the California Register as a contributor to a California Register-eligible historic district. The proposed SFMOMA Expansion would not physically affect the building at 161 Natoma Street. As part of the project, an up to 18-foot-wide promenade would be established along the eastern boundary of the project site, along with an adjoining plaza area. The painted sign along the side of 161 Natoma Street would continue to be visible from these publicly-accessible areas. Therefore, passersby would still be able to view the sign, along with its design and aesthetic qualities.

Impact CP-6: The Fire Station Relocation and Housing Project, in combination with past, present, and reasonably foreseeable future projects, would not contribute considerably to cumulative impacts to other similar light industrial building resource types in SoMa. (Less Than Significant)

The structure located at 935 Folsom Street is a light industrial building type constructed in SoMa following the 1906 earthquake. The character-defining features of the light industrial building type are brick masonry construction, rectangular plan, 100 percent parcel coverage, minimally decorated primary façades facing the street, large and open interiors with timber or steel truss framing, large metal (steel) sashed windows with sky lights, and large rollup garage doors. The building at 935 Folsom Street appears eligible for listing in the California Register under Criterion 1 (Events) for its association with the post-earthquake reconstruction of SoMa, and under Criterion 3 (Architecture) as a unique example of an early 20th century industrial building designed by a notable architect.[53]

The redevelopment potential associated with implementation of area plans, including the East SoMa Area Plan, was used to assess the potential for demolition of the 935 Folsom Street structure to result in a significant cumulative impact to historic light industrial buildings in the area. The cumulative analysis for demolition of the 935 Folsom Street building considers past, present, and reasonably

[53] *Historic Resource Evaluation Response*, 935 Folsom Street. San Francisco Planning Department, April 24, 2009. This document is available as Appendix B of this EIR and at the Planning Department in Case File No. 2006.0241E.

foreseeable projects within the general viewshed of the site (or within approximately 1,000 feet of the site).

No reasonably foreseeable projects that are within 1,000 feet of the Fire Station Relocation and Housing Project site would result in the demolition or alteration of a light industrial building type that is similar to 935 Folsom Street. Based on the review of reasonably foreseeable projects, the locations of the cumulative projects contain empty lots, multi-story residential properties, two-story commercial properties, or parking lots (such as at 900 Folsom Street); none of the projects appears to involve historic light industrial buildings. Therefore, the demolition of 935 Folsom Street would not result in a cumulatively considerable contribution to the loss of historic light industrial buildings in the vicinity of the Fire Station Relocation and Housing Project site.

D. TRANSPORTATION AND CIRCULATION

This section discusses the anticipated effects of the proposed SFMOMA Expansion and Fire Station Relocation and Housing Project on the transportation and circulation system and is based on the Transportation Impact Analysis prepared for the projects.[1] As discussed in the Transportation and Circulation section of the Initial Study (see pages 80 to 83), the proposed projects would not result in a change in air traffic patterns that would result in substantial safety risks.

Setting

This section provides a description of the existing transportation conditions in the vicinity of the project sites. Included in this section are descriptions of existing roadway, transit, pedestrian, bicycle, and parking conditions. Figure IV.D-1 presents the roadway network in the vicinity of the projects.

Roadway Network. Appendix C of the Transportation Impact Analysis contains definitions and regulatory requirements for the various San Francisco General Plan roadway classifications, plus the roadway levels of service for those streets in the Congestion Management Program (CMP) Network.

Regional Access. This section provides a discussion of the existing regional roadway network in the vicinity of the two project sites, including the location of the nearest on-ramps and off-ramps.

Interstate 80 (I-80) provides the primary regional access to the project sites. The San Francisco-Oakland Bay Bridge is part of I-80 and connects San Francisco with the East Bay and points east. I-80 runs to the south of the project sites. Access to the project sites from I-80 westbound is via the Fremont Street off-ramp or the Harrison/Fifth Streets off-ramp, and access to I-80 westbound is via the on-ramp at Harrison/Fourth Streets. Access from I-80 eastbound is via the Bryant/Fourth Streets off-ramp, and access to I-80 eastbound is via the on-ramps at Harrison/Essex, Harrison/First, Bryant/Sterling, and Bryant/Fifth Streets.

[1] *SFMOMA Expansion and Fire Station Relocation and Housing Project Transportation Impact Analysis*, LCW Consulting, June 2011. This document is available for review at the Planning Department in Case File No. 2009.0291E.

U.S. Highway 101 (U.S. 101) provides access to both the north and south of the study area surrounding the project sites (study area). I-80 joins U.S. 101 to the southwest of the project sites 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 and Fifth Streets. 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 (i.e., Van Ness Avenue and Lombard 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 to the south of downtown San Francisco. Nearby access points to I-280 are located at King Street (near Fifth Street) and Sixth Street (at Brannan Street).

Local Access. This section provides a discussion of the existing local roadway system in the vicinity of the project sites, including the roadway designation, number of travel lanes, and traffic flow directions. In the South of Market area, streets that run in the northwest/southeast direction are considered north-south streets, whereas streets that run in the southwest/northeast direction are considered east-west streets.

Market Street is a two-way arterial that runs between Steuart Street and Portola Drive. Market Street runs in an east-west direction. In the vicinity of the project sites, Market Street has two lanes in each direction, and on-street parking is prohibited, although there are loading zones on most blocks. Numerous bus lines and the F-Market historic streetcar line run on Market Street between Steuart Street and Castro Street. In the San Francisco General Plan, Market Street is designated as a Transit Conflict Street in the CMP Network, a Transit Preferential Street (transit-oriented), a Citywide Pedestrian Network Street and a Neighborhood Commercial Street. In addition, Market Street between Castro Street and Steuart Street is part of Bicycle Route 50.

Mission Street is a four-lane arterial that runs in an east-west direction between The Embarcadero and Van Ness Avenue, and continues in a north-south direction west of Van Ness Avenue. One of Mission Street's two lanes in the eastbound and westbound directions, between Eleventh Street and

Beale Street, is dedicated as a right-turn/bus-only lane on weekdays between 7:00 a.m. and 6:00 p.m. On-street, metered parking is generally provided along both curbs, but is prohibited during the AM and PM peak periods. The *General Plan* designates Mission Street as a Transit Conflict Street in the CMP Network, as a Transit Preferential Street (primary transit-oriented) within the downtown core, a Neighborhood Pedestrian Street (Neighborhood Commercial), and as a Citywide Pedestrian Network Street.

Minna Street is an east-west alley that runs discontinuously between Fifteenth Street and First Street. Between Third Street and New Montgomery Street, it is a one-way eastbound street. Between New Montgomery Street and Second Street, it is a one-way westbound street. Minna Street generally has one travel lane and on-street parking on one side of the street (between Third Street and New Montgomery Street, parking is permitted on the north side of the street).

Natoma Street is an east-west alley that runs discontinuously between Fifteenth Street and First Street. Between New Montgomery Street and Second Street, Natoma Street is a one-way eastbound street. West of New Montgomery Street, it is a two-way street, which terminates east of Third Street. Natoma Street generally has one travel lane and on-street parking on one side of the street (west of New Montgomery Street, parking is permitted on the south side of the street).

Hunt Street is landlocked City-owned right-of-way that is located between 151 Third Street and 676 and 670 Howard Street (see Project Description, Figure II-2). The portion of Hunt Street extending west to Third Street was previously vacated by the City and conveyed to the developer of the W Hotel, such that the remaining right-of-way does not connect to any other public street.

Howard Street runs between The Embarcadero and South Van Ness Avenue. It is a two-way arterial with two travel lanes in each direction between The Embarcadero and Fremont Street, and a one-way arterial west of Fremont Street with four to three travel lanes in the westbound direction. In the vicinity of the project sites, Howard Street has on-street parking on both sides of the street; however, parking is prohibited along the north curb during the PM peak period (4:00 to 6:00 p.m.). The San Francisco General Plan identifies Howard Street as a Major Arterial in the CMP Network, as a

Metropolitan Transportation System (MTS) street and a Transit Preferential Street (transit-important) between Main and Beale Streets. Howard Street is part of Bicycle Route 30, and a bicycle lane is provided on the north side of Howard Street between Fremont and Eleventh Streets.

Folsom Street runs between The Embarcadero and Ripley Street (south of Cesar Chavez Street). Folsom Street is a four-lane eastbound one-way arterial from Eleventh Street to Main Street, and is a two-way arterial with three eastbound lanes and one westbound lane between Main Street and The Embarcadero. The San Francisco General Plan identifies Folsom Street as a Major Arterial in the CMP Network and as an MTS Street. Folsom Street is part of Bicycle Route 30, and has a bicycle lane on the south side of the street.

Shipley Street is an east-west roadway between Fourth and Sixth Streets. Shipley Street has one westbound travel lane, and on-street parking on the north side of the street (including adjacent to the Fire Station Relocation and Housing Project site (935 Folsom Street)).

Harrison Street runs between The Embarcadero and Norwich Street (south of Cesar Chavez Street). Harrison Street operates two ways between The Embarcadero and Third Street, one-way westbound between Third and Tenth Streets, and two-way between Tenth and Norwich Streets. Between Beale and First Streets, Harrison Street has one eastbound and three westbound travel lanes, and curb parking on both sides of the street. The San Francisco General Plan identifies Harrison Street as a Major Arterial in the CMP Network, an MTS Street, a Transit Preferential Street (transit-important), and a Neighborhood Commercial Street.

Bryant Street runs between The Embarcadero and Precita Avenue (south of Cesar Chavez Street). Between Second Street and Eleventh Street, Bryant Street is a one-way eastbound arterial with four travel lanes. East of Second Street, Bryant Street operates one-way eastbound to the Sterling Street on-ramp to I-80, and operates both eastbound and westbound (one lane in each direction) between Sterling Street and The Embarcadero. Bryant Street provides the primary access to and from I-80 eastbound, including on-ramps at Fifth Street and Sterling Street, and off-ramps at Seventh Street and Fourth Street. The San Francisco General Plan identifies Bryant Street as a Major Arterial in the CMP

Network, an MTS Street, a Transit Preferential Street (transit-important), and a Neighborhood Commercial Street.

Second Street is a two-way street between Market Street and King Street, with two lanes in both the northbound and southbound directions. Between Mission Street and Market Street, only one northbound lane is provided and all northbound traffic must turn right at Market Street. On-street parking is generally provided along both side of the street. Second Street is designated as a Neighborhood Commercial Street in the San Francisco General Plan. In addition, Second Street is part of Bicycle Route 11.

New Montgomery Street is one-way southbound arterial that extends between Montgomery Street (at Market Street) and Howard Street. New Montgomery Street has two to three lanes, with on-street parking provided along both sides of the street. During the PM peak period (3:00 to 7:00 p.m.), there is a tow-away curb regulation on the east curb.

Third Street is a north-south arterial between Bayshore Boulevard and Market Street. North of Market Street, Third Street connects with Kearny Street and Geary Street. North of Townsend Street, Third Street is a one-way northbound roadway. In the vicinity of the SFMOMA Expansion site, Third Street has five travel lanes during peak periods, and the east curb lane is reserved for transit vehicles. On-street parking is generally provided along both sides of the street, but is prohibited during the morning and afternoon commute periods (7:00 to 9:00 a.m., and 4:00 to 6:00 p.m.). In the San Francisco General Plan, Third Street is designated as a Major Arterial in the CMP Network, a MTS street, a Transit Preferential Street (transit important), a Citywide Pedestrian Network Street, and a Neighborhood Commercial Street.

Fourth Street is a north-south roadway between Market Street and 16th Street. North of Market Street, Fourth Street connects with Stockton Street and Ellis Street. Between Market and Townsend Streets, Fourth Street is a one-way southbound roadway with four travel lanes during peak periods. In the vicinity of the project sites, Fourth Street has on-street metered parking and sidewalks on both sides of the street. In the San Francisco General Plan, Fourth Street is designated as a Major Arterial in the

CMP Network, an MTS Street, a Transit Preferential Street (transit important) and a Neighborhood Commercial Street.

Fifth Street is a north-south roadway between Market Street and Townsend Street. North of Market Street, Fifth Street becomes Cyril Magnin Street. Fifth Street is a two-way street, with two travel lanes in each direction. In the vicinity of the project sites, Fifth Street has on-street metered parking and sidewalks on both sides of the street. In the San Francisco General Plan, Fifth Street is designated as a Major Arterial in the CMP Network, an MTS Street, and a transit Preferential Street (transit important). Fifth Street is part of Bicycle Route 19.

Falmouth Street is a north-south roadway between Shipley Street and Folsom Street. Falmouth Street has one northbound travel lane, and on-street parking on the east side of the street (adjacent to the Fire Station Relocation and Housing Project site).

Sixth Street is a two-way roadway that extends from Market Street to the I-280 on- and off-ramps at Brannan Street. It contains two lanes in each direction, plus parking on both sides of the street, subject to tow-away regulations. On-street parking on the east side of Sixth Street between Brannan and Market Streets and on the west side between Howard and Brannan Streets is subject to tow-away regulations between 7:00 and 9:00 a.m. as well as between 3:00 and 7:00 p.m. Sixth Street is designated as a Major Arterial in the General Plan. It is part of the CMP Network and is an MTS street.

Study Scope and Approach. The following transportation scenarios were examined in this transportation analysis:

- Existing
- Existing plus Project
- 2030 Cumulative

The following intersections in the vicinity of the project sites were analyzed for intersection Level of Service (LOS) during the weekday PM peak hour (generally between 5:00 and 6:00 p.m.) of the PM peak period (generally between 4:00 and 6:00 p.m.), when traffic volumes are generally the greatest.

1. Third/Market Streets
2. Third/Mission Streets
3. Third/Howard Streets
4. New Montgomery/Market Streets
5. New Montgomery/Mission Streets
6. New Montgomery/Minna Streets
7. New Montgomery/Natoma Streets
8. New Montgomery/Howard Streets
9. Fifth/Howard Streets
10. Fifth/Folsom Streets
11. Fifth/Harrison Streets
12. Sixth/Howard Streets
13. Sixth/Folsom Streets
14. Sixth/Shipley Streets
15. Sixth/Harrison Streets

In addition, intersection LOS analysis was conducted during the Saturday midday peak hour of the midday peak period (12:00 to 2:00 p.m.) for the intersections of Third/Market, Third/Mission, and Third/Howard Streets. Figure IV.D-1 presents the analysis intersections and the parking and transit study areas for the project sites.

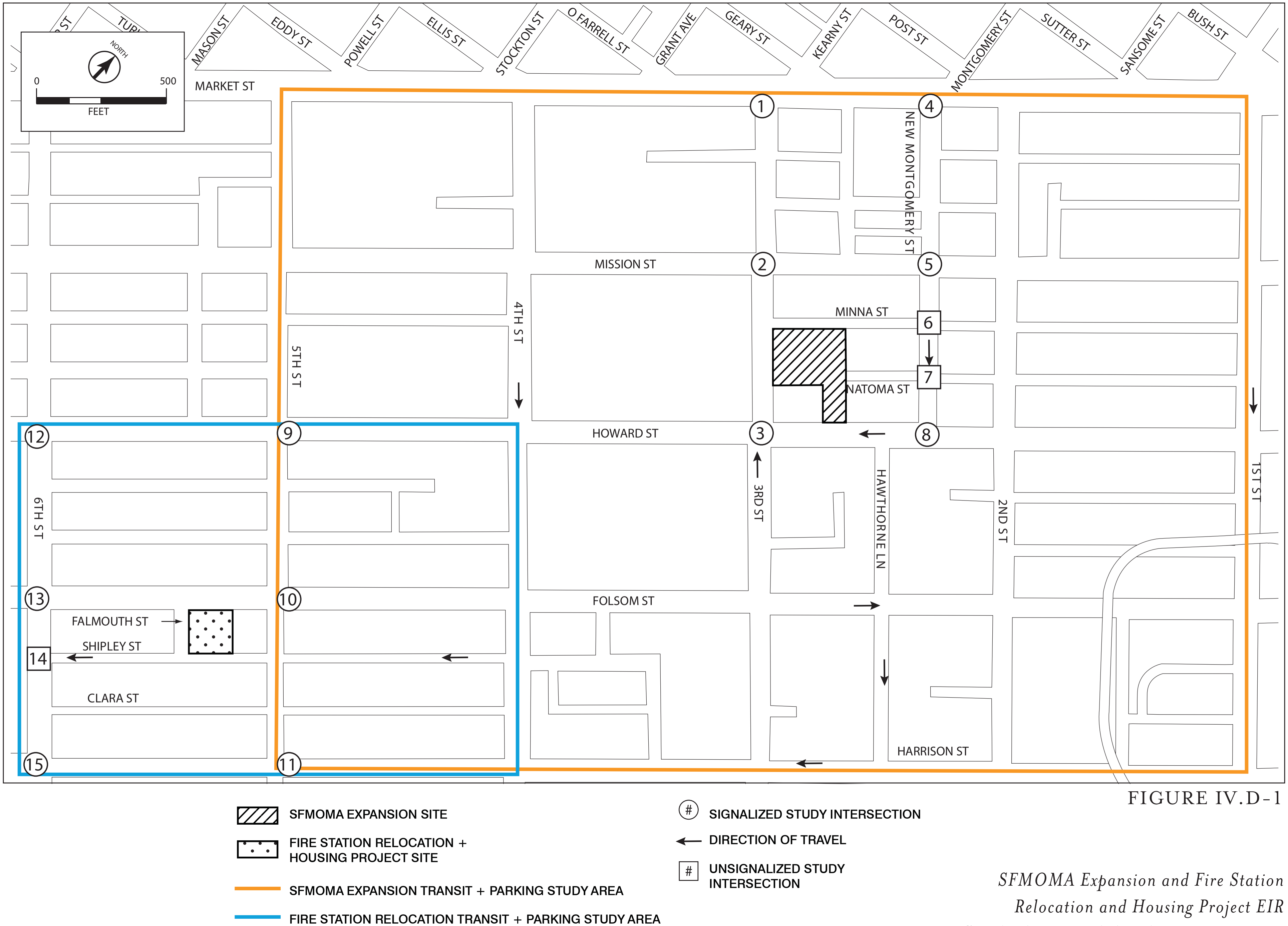
Intersection Operating Conditions. Figure IV.D-2 presents the existing weekday PM peak hour traffic volumes at the study intersections in the vicinity of the SFMOMA Expansion site, while Figure IV.D-3 presents the weekday PM peak hour traffic volumes in the vicinity of the Fire Station Relocation and Housing Project site. Figure IV.D-4 presents the Saturday midday peak hour volumes at the three intersections along Third Street analyzed for Saturday conditions. Intersection turning movement counts were obtained from existing data and new counts conducted for the proposed projects.

Twelve of the 15 study intersections are signalized; the intersections of New Montgomery/Minna, New Montgomery/Natoma, and Shipley/Sixth Streets are unsignalized. The operating characteristics of intersections are described by the concept of Level of Service (LOS). LOS is a qualitative description of an intersection's performance 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 D are considered excellent to satisfactory service levels, LOS E is undesirable, and LOS F conditions are unacceptable. Appendix D of the Transportation Impact Analysis presents level of service descriptions for signalized and unsignalized intersections.

The intersections were evaluated using the *2000 Highway Capacity Manual* methodology.[2] For signalized intersections, this methodology 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 is presented for the intersection. For unsignalized intersections, average delay and LOS operating conditions are calculated by approach (e.g., northbound) and movement (e.g., northbound left-turn), for those movements that are subject to delay. For the purpose of this analysis, the operating conditions (LOS and delay) for unsignalized intersections are presented for the worst approach (i.e., the approach with the highest average delay per vehicle).

Table IV.D-1 presents the results of the intersection LOS analysis for the existing weekday PM peak hour and the Saturday midday peak hour conditions. Appendix D of the Transportation Impact Analysis contains the intersection LOS calculation sheets. During the weekday PM peak hour, 11 of the 15 study intersections currently operate with acceptable conditions (LOS D or better). During the Saturday midday peak hour, the three study intersections operate at LOS C or better.

[2] As part of the *HCM* methodology, adjustments are typically made to the capacity of each intersection to account for various factors that reduce the ability of the streets to accommodate vehicles (such as the downtown nature of the study area, number of pedestrians, vehicle type, lane widths and queues). These adjustments are performed to ensure that the LOS analysis results reflect the operating conditions that are observed in the field. See Appendix D of the Transportation Impact Analysis for adjustments made at study intersections.

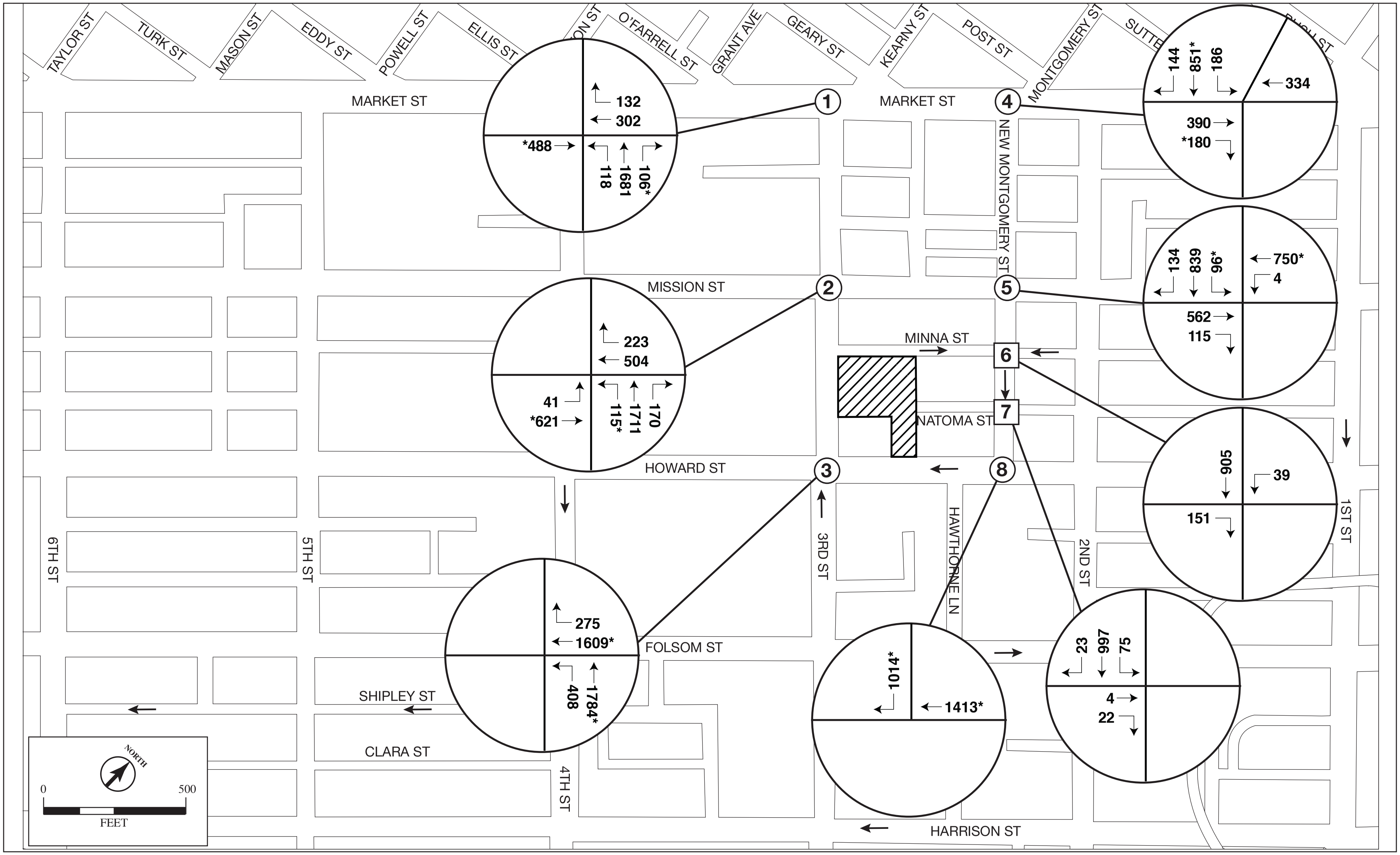


SOURCES: LCW CONSULTING, 2011.

FIGURE IV.D-1

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Study Area and Analysis Locations



SFMOMA EXPANSION SITE

SIGNALIZED STUDY INTERSECTION

UNSIGNALIZED STUDY INTERSECTION

DIRECTION OF TRAVEL

* CRITICAL MOVEMENT

SOURCES: LCW CONSULTING, 2011.

FIGURE IV.D-2

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Existing Traffic Volumes - Weekday PM Peak Hour
SFMOMA Expansion Vicinity

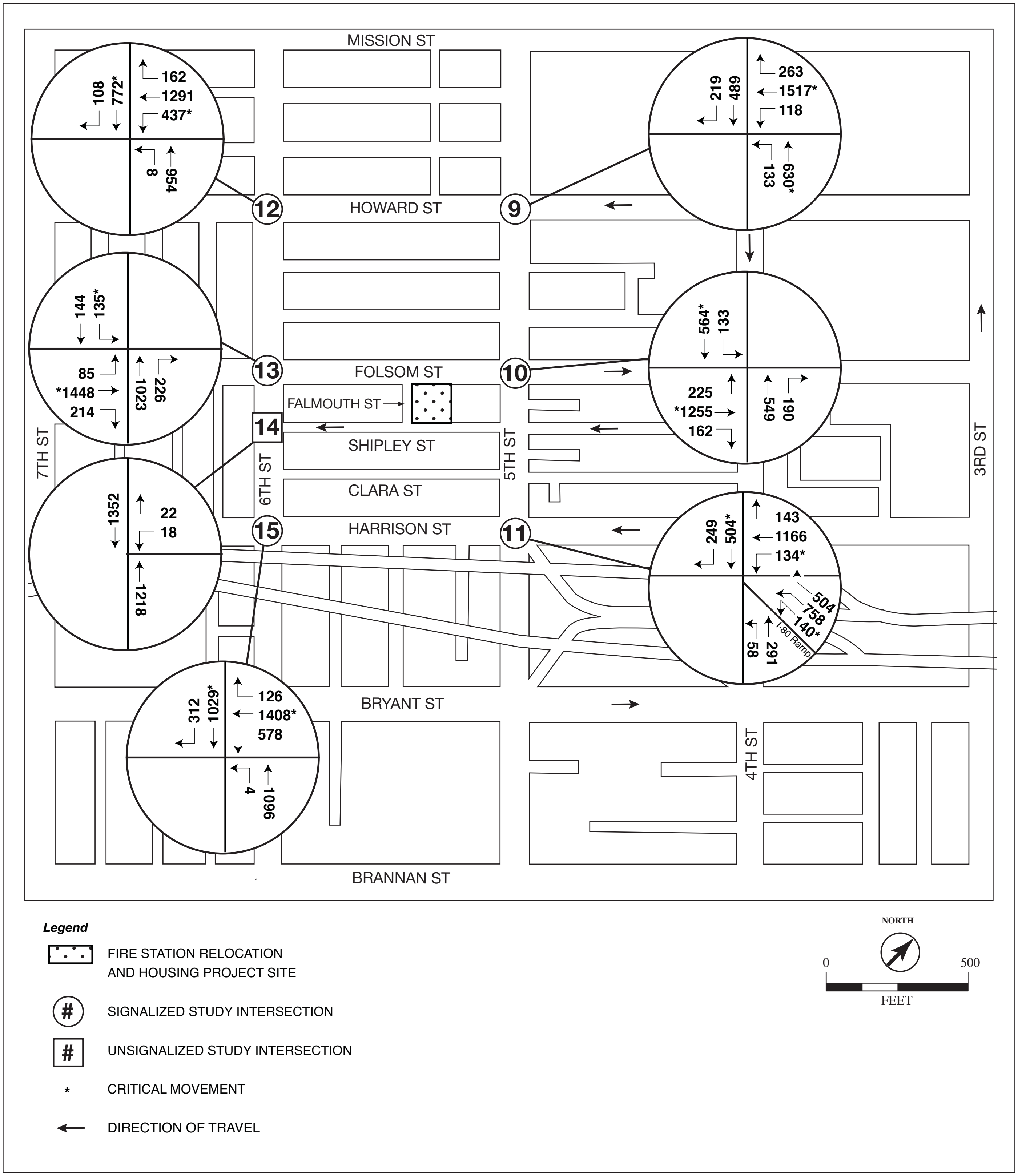
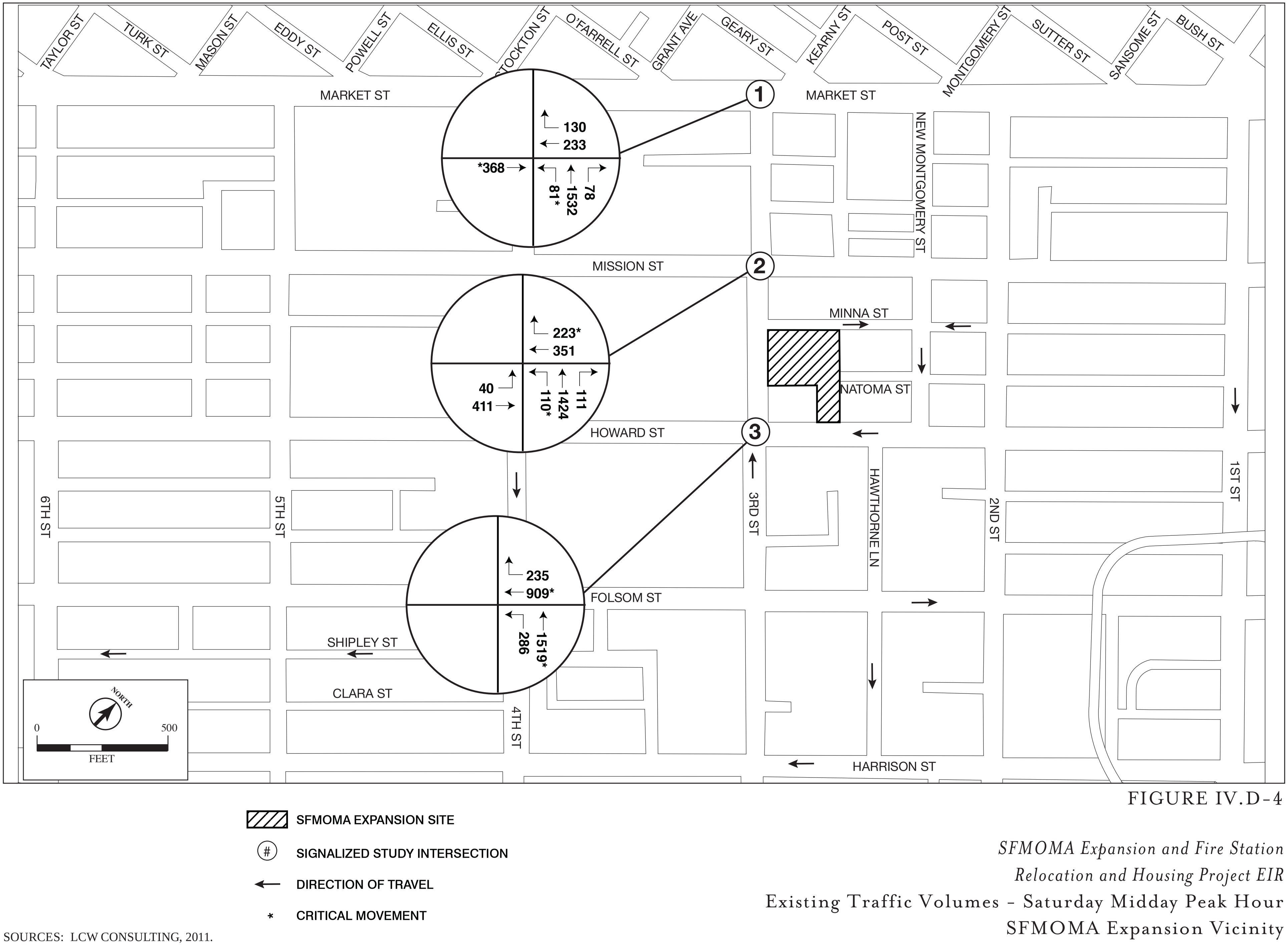


FIGURE IV.D-3

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Existing Traffic Volumes - Weekday PM Peak Hour
Fire Station Relocation and Housing Project Vicinity

SOURCE: LCW CONSULTING, 2011.



SOURCES: LCW CONSULTING, 2011.

FIGURE IV.D-4

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Existing Traffic Volumes – Saturday Midday Peak Hour
SFMOMA Expansion Vicinity

Table IV.D-1: Intersection Level of Service, Existing Conditions – Weekday PM and Saturday Midday Peak Hours

Intersection	Delay [1]	LOS [2]
Weekday PM Peak Hour		
1. Third/Market	**56.2**	**E**
2. Third/Mission	20.1	C
3. Third/Howard	36.1	D
4. New Montgomery/Market	42.6	D
5. New Montgomery/Mission	21.3	C
6. New Montgomery/Minna [3]	**45.3 (wb)/44.3 (eb)**	**E/E**
7. New Montgomery/Natoma [3]	30.4 (eb)	D
8. New Montgomery/Howard	**56.7**	**E**
9. Fifth/Howard	24.9	C
10. Fifth/Folsom	19.7	B
11. Fifth/Harrison/I-80 off-ramp	50.0	D
12. Sixth/Howard	23.6	C
13. Sixth/Folsom	20.0	B
14. Sixth/Shipley [3]	**37.3 (wb)**	**E**
15. Sixth/Harrison	25.7	C
Saturday Midday Peak Hour		
1. Third/Market	26.7	C
2. Third/Mission	16.0	B
3. Third/Howard	16.1	B

Notes:

1 Delay presented in seconds per vehicle.

2 Intersections operating at LOS E or LOS F highlighted in **bold**.

3 Unsignalized intersection. Peak hour signal warrants are not met.

wb = westbound; eb = eastbound

Source: LCW Consulting, 2011.

The signalized intersections of Third/Market and New Montgomery/Howard Streets currently experience the greatest average delay per vehicle, and both intersections operate at an overall intersection operating condition of LOS E. In the vicinity of the SFMOMA Expansion site, Third Street and New Montgomery Street serve as primary routes to and from I-80. The poor operating conditions at the intersection of New Montgomery/Howard Streets are due to the high volumes of traffic on Howard Street westbound and on New Montgomery Street southbound. Conditions at this intersection are exacerbated by the nearby signalized intersection of Hawthorne/Howard Streets.

At the unsignalized intersection of New Montgomery/Minna Streets both the eastbound and west-bound Minna Street approaches operates at LOS E, while at the unsignalized intersection of New Montgomery/Natoma, the eastbound Natoma Street approach operates at LOS D. During the PM peak period, the queue on New Montgomery Street from the approach to Howard Street extends upstream to Natoma and Minna Streets, constraining access onto New Montgomery Street. However, vehicles on Minna and Natoma Streets are generally able to merge into the traffic stream. Due to the low volumes on both Minna and Natoma Streets, traffic signal warrants are not met, and a signal is not warranted.[3]

Transit Network. This section describes the transit network in the vicinity of the project sites.

<u>Local and Regional Transit Providers</u>. The project sites are well-served by public transit, with both local and regional service provided nearby. Local service is provided by the San Francisco Municipal Railway (Muni) bus and light rail lines, which can be used to access regional transit operators. Service to and from the East Bay is provided by Bay Area Rapid Transit (BART), Alameda-Contra Costa (AC) Transit buses and ferries; service to and from the North Bay is provided by Golden Gate Transit buses and ferries; service to and from the Peninsula and South Bay is provided by Caltrain, SamTrans, and BART. Figure IV.D-5 presents the transit routes and local bus stop locations in the vicinity of the project sites.

Muni provides transit service within the City and County of San Francisco, including bus (both diesel and electric trolley), light rail (Muni Metro), cable car and electric streetcar lines. Muni operates a number of bus and rail lines in the vicinity of the project sites. Table IV.D-2 presents the Muni routes serving the two transit study areas, and their service frequencies during the weekday morning, midday, and afternoon peak periods.

[3] A signal warrant is a condition that an intersection must meet to justify a signal installation. There are different warrants, which examine factors such as the volume of vehicles, bicyclists, and pedestrians, the signal system, collision statistics, as well as the geometric/physical configuration of the intersection. Even if a signal warrant is not met under the strictest interpretation, the determination to signalize an intersection could be made based upon the city traffic engineer's professional judgment of intersection operations.

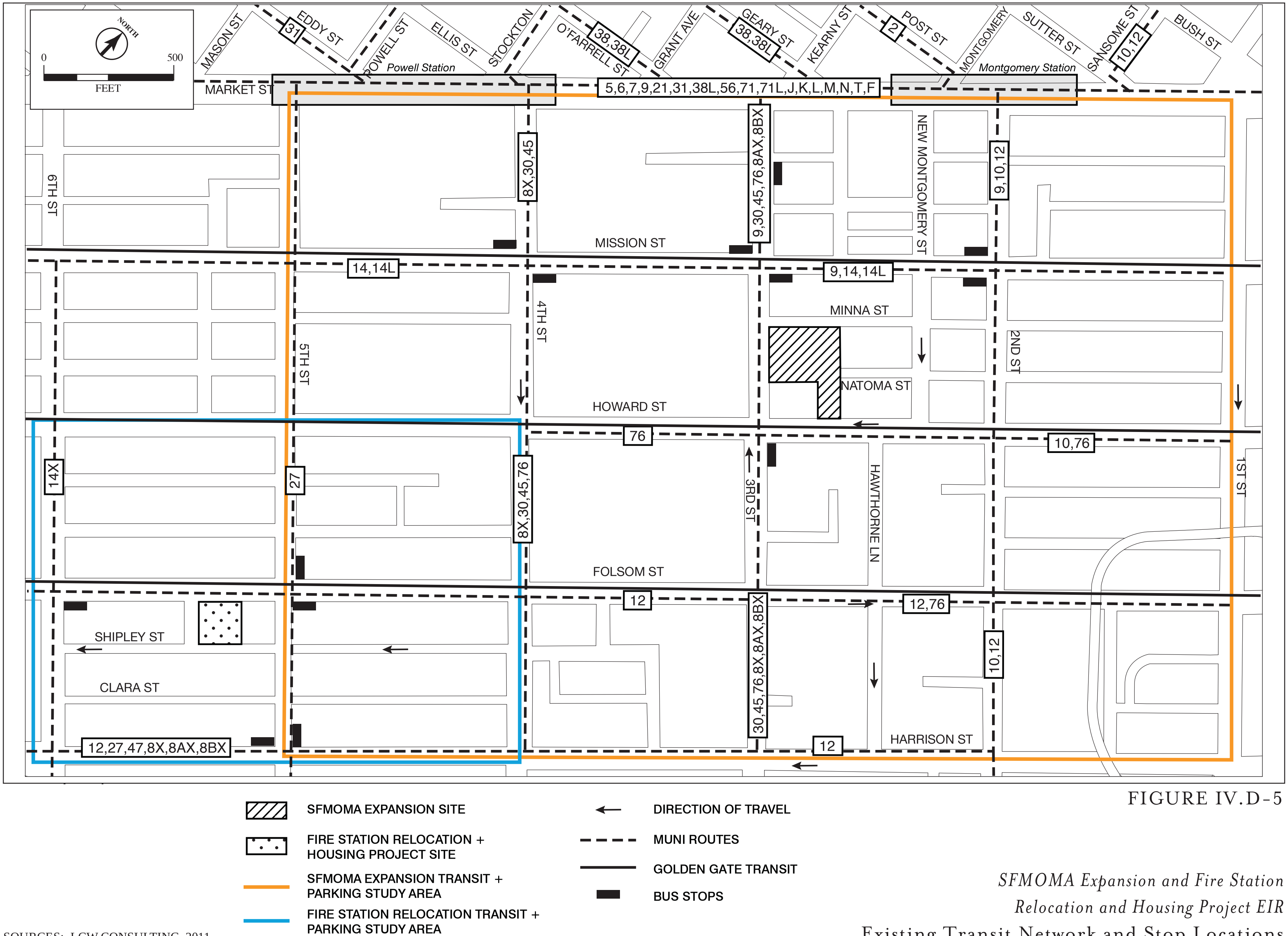


FIGURE IV.D-5

SOURCES: LCW CONSULTING, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Existing Transit Network and Stop Locations

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There are no bus stops adjacent to either the SFMOMA Expansion or the Fire Station Relocation and Housing Project sites. On Third Street the closest bus stops are located at the approach to Howard Street, and between Mission and Market Streets. On Folsom Street there are bus stops at the intersections of Fifth and Sixth Streets (far-side stops at both cross-streets).

Table IV.D-2: Nearby Weekday Muni Service [1]

Route	Service Frequency (min.) AM Peak Period (7:00 to 9:00 a.m.)	Midday Period (9:00 a.m. to 4:00 p.m.)	PM Peak Period (4:00 to 6:00 p.m.)
2-Clement	10	20	10
5-Fulton	5	7	5
6-Parnassus	9	12	9
8X-Bayshore Express	10	10	10
8AX-Bayshore "A" Express [2]	7	--	7
8BX-Bayshore "B" Express [3]	7	--	8
9-San Bruno	10	10	10
10-Townsend	20	20	20
12-Folsom	20	20	20
14-Mission	11	6	6
14X-Mission Express [4]	7	--	7
21-Hayes	8	12	8
27-Bryant	12	12	12
30-Stockton	9	4	4
31-Balboa	12	15	12
38-Geary	6	7	6
38-Geary Limited	6	6	6
45-Union-Stockton	9	9	9
47-Van Ness	8	8	8
71/71L-Haight-Noriega	8	12	8
F-Market	7	8	7
J-Church	8	10	8
K-Ingleside/T-Third	9	9	9
L-Taraval	8	9	8
M-Ocean View	9	10	9
N-Judah	7	9	7

Notes:
1 Muni service at the time the NOP was issued (October 27, 2010). Reflects December 2009 service changes. Additional service changes were implemented in May 2010. About 60 percent of the service reductions implemented in May 2010 were restored in September 2010.
2 8AX-Bayshore "A" Express operates inbound toward Chinatown via Downtown between 6:30 and 9:30 a.m., and outbound from Chinatown between 3:30 and 7:00 p.m.
3 8BX-Bayshore "B" Express operates inbound toward Chinatown via Downtown between 6:30 and 8:30 a.m., and outbound from Chinatown between 4:00 and 6:00 p.m.
4 14X-Mission Express operates inbound toward Downtown between 6:30 and 8:30 a.m., and outbound from Downtown between 4:00 and 6:00 p.m.

Source: SF Muni, 2010; LCW Consulting, 2011.

Muni's Transit Effectiveness Project (TEP) presents a thorough review of San Francisco's public transit system, initiated by MTA in collaboration with the City Controller's Office. The TEP is aimed at improving reliability, reducing travel times, providing more frequent service and updating Muni bus routes and rail lines to better match current travel patterns. The TEP recommendations were unanimously endorsed by the MTA Board of Directors in October 2008, pending any requisite environmental impact assessments. They include new routes and route extension, more service on busy routes, and elimination or consolidation of certain routes or route segments with low ridership. Please refer to the Transportation Impact Analysis for a summary of the changes proposed by the TEP for lines in the vicinity of the project sites.

BART operates regional rail transit service in the metropolitan Bay Area. BART currently operates five lines: Pittsburg/Bay Point to San Francisco International Airport (SFIA) - Millbrae, Fremont to Daly City, Richmond to Daly City-Millbrae, Fremont to Richmond, and Dublin/Pleasanton to Daly City. Within downtown San Francisco, BART operates underground below Market Street. During the weekday PM peak period, headways are generally 5 to 15 minutes for each line. The closest BART stations to the project sites are the Powell and Montgomery stations on Market Street.

Caltrain provides rail passenger service on the Peninsula between Gilroy and San Francisco. The San Francisco terminal is located at Fourth and Townsend Streets (about 1.0 mile south of the SFMOMA Expansion site and 0.75 mile southeast of 935 Folsom Street site). Caltrain currently operates 66 trains each weekday, with a combination of express and local service. Headways during the evening peak period are approximately 5 to 30 minutes.

SamTrans, operated by the San Mateo County Transit District, provides bus service between San Mateo County and San Francisco. SamTrans operates three bus lines that serve San Francisco. In general, SamTrans service to downtown San Francisco operates along Mission Street to the Transbay Terminal, located on Mission Street between First and Fremont Streets, about 0.75 mile east of the SFMOMA Expansion site, and 1.0 mile northeast of the Fire Station Relocation and Housing Project site.

Golden Gate Transit, operated by the Golden Gate Bridge, Highway, and Transportation District (GGBHTD), provides bus service between the North Bay (Marin and Sonoma Counties) and San Francisco. Golden Gate Transit operates 22 commute bus routes, nine basic bus routes, and 16 ferry feeder bus routes into San Francisco, several of which are at or near the Transbay Terminal. 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. Golden Gate Transit 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, at The Embarcadero near Market Street (about 1.0 mile east of the SFMOMA Expansion site and 1.5 miles northeast of the 935 Folsom Street site).

AC Transit is the primary bus operator for the East Bay, including Alameda and western Contra Costa Counties. AC Transit operates 37 routes between the East Bay and San Francisco, all of which terminate at the Transbay Terminal. Most transbay service is peak-hour and peak-direction (to San Francisco during the AM peak period and from San Francisco during the PM peak period), with headways of 15 to 30 minutes per route.

The availability of Muni and regional transit service capacity was analyzed in terms of a series of screenlines. The concept of screenlines is used to describe the magnitude of travel to or from the greater downtown area, and to compare estimated transit volumes to available capacities. Screenlines are hypothetical lines that would be crossed by persons traveling between downtown and its vicinity and other parts of San Francisco and the region. Please refer to the Transportation Impact Analysis for a discussion of the screenline analysis conducted for Muni and the regional transit system.

Pedestrian Conditions. A qualitative evaluation of existing pedestrian conditions in the vicinity of the project sites was conducted during field visits to the site during the weekday midday and PM peak periods. In addition, in the vicinity of the SFMOMA Expansion site, a quantitative analysis of pedestrian sidewalk conditions adjacent to the project site, and intersection crosswalk and corner conditions at the intersection of Third/Mission were conducted for the weekday midday and PM peak hours.

SFMOMA Expansion Site Vicinity. Sidewalks widths adjacent to the SFMOMA Expansion site are 7 to 12 feet in width. The sidewalk on Third Street is 10 feet wide, on Howard Street the sidewalk is 12 feet wide, and on Minna Street the sidewalk is 7-feet wide. Pedestrian crosswalks and signals are provided at the intersections in the vicinity of the project site. There is an approximately 20-foot wide midblock crosswalk on Third Street between Howard Street and Mission Street that is centered on the entrance to SFMOMA.

Pedestrian flows in the vicinity of the project site are moderate to high on both Third Street and Howard Street adjacent to the project site. In addition to SFMOMA, the primary pedestrian generators/attractors in the vicinity of the project site are Union Square, the Market Street transit lines, and other cultural/convention center uses to the west of the project site.

Pedestrian conditions were assessed at the following locations:

- At the two sidewalk walkway locations adjacent to the SFMOMA Expansion site on Third Street south of Minna Street, and on Howard Street east of Third Street.
- At the south and east crosswalks at the intersection of Third Street and Mission Street.
- At the southeast corner of the intersection of Third Street and Mission Street.

Figure IV.D-6 presents the existing weekday midday and PM peak hour pedestrian volumes at the study locations. For the four crosswalks and corners, pedestrian volume counts were conducted during the midday and PM peak periods in June and September 2010, and supplemented by counts conducted in January 2010 as part of the Eastern Neighborhood Transportation Implementation Planning Study (EN TRIPS) being conducted by MTA. Pedestrian volumes at the study intersections vary depending on activities at the nearby cultural uses, including SFMOMA, conventions at the Moscone Center, and month of year. Pedestrian volumes for the corner and crosswalk locations were based on an average of the available data. Adjacent to the SFMOMA Expansion site, pedestrian

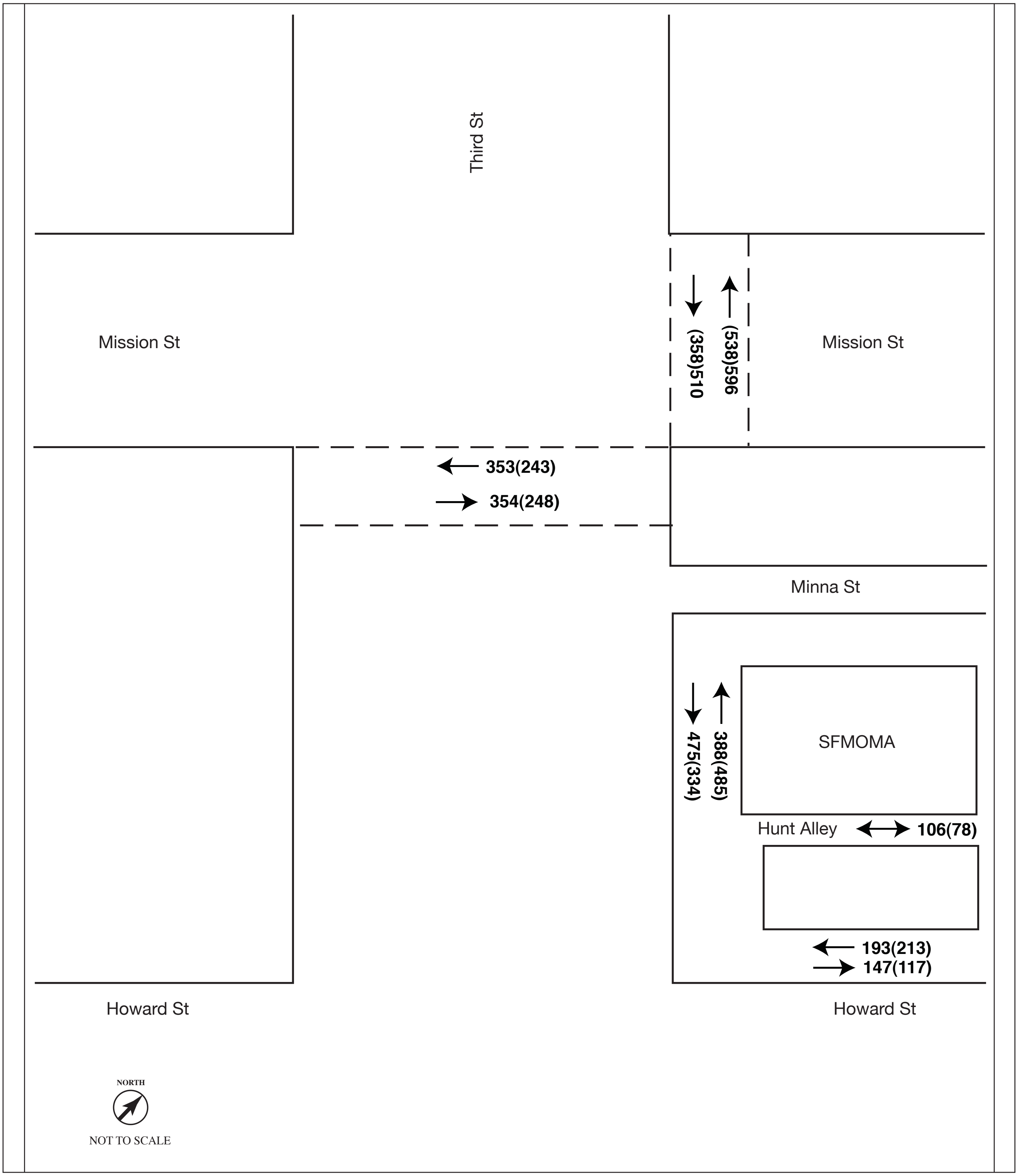

FIGURE IV.D-6

#(#) - Midday (PM)

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Existing Pedestrian Volumes – Weekday Midday and PM Peak Hours SFMOMA Expansion Vicinity

SOURCE: LCW CONSULTING, 2011.

volumes are slightly greater during the midday peak hour (340 to 860 pedestrians per hour) than during the PM peak hour (330 to 820 pedestrians per hour), and are higher on Third Street (820 to 830 pedestrians per hour) than on Howard Street (330 to 340 pedestrians per hour).

Figure IV.D-6 also presents the number of pedestrians traveling on Hunt Alley during the midday and PM peak hours, based on counts conducted on June 16, 2010. Hunt Alley is a private pedestrian alley, with gates at Third Street and at Hunt Street, which provides access to the W Hotel staff entrance and porte cochere. The gates are typically open during the day, allowing through pedestrian access between Third and Natoma Streets. At night, the gates are typically closed, preventing public access. During both peak hours, the majority of pedestrians were destined to and from the W Hotel, rather than between Third Street and Hunt Street. During the Midday peak hour, 35 of the 106 pedestrians (33 percent) traveled between Third Street and Hunt Street. During the PM peak hour, more pedestrians traveled through Hunt Alley from Third Street to Hunt Street, likely monthly parkers destined to the SFMOMA Garage secondary access (used by monthly parkers). During the PM peak hour, about 38 pedestrians (42 percent) travelled between Third Street and Hunt Street. Overall, for the 12-hour period between 7:00 a.m. and 7:00 p.m., there were about 700 pedestrians destined to or from Hunt Alley, with 67 percent destined to and from the W Hotel, and 33 percent traveling between Third Street and Hunt Street.

Analysis of operating characteristics of the pedestrian sidewalk, crosswalk, and corner locations was conducted using the *HCM 2000* methodology. Appendix F of the Transportation Impact Analysis presents the level of service description for pedestrian flows and the pedestrian analysis calculation sheets.

- Sidewalk operating conditions are measured by average pedestrian flow rate, which is defined as the average number of pedestrians that pass a specific point on the sidewalk during a certain period (pedestrians per minute per foot or p/m/f). The width of the sidewalk at this point is considered the "effective width," which accounts for reduction in amount of sidewalk available for travel due to street furniture and the sides of buildings. The effective width of the 10-foot wide sidewalk on Third Street is about 4.5 feet, while the effective width of the 12-foot wide sidewalk on Howard Street is about 6 feet. The level of service for sidewalks is presented for "platoon" conditions, which represent the conditions when pedestrians are walking together in a group. Pedestrian level of service conditions were calculated at the most restrictive location adjacent to the project site.

- Crosswalk and corner LOS are measurements of the amount of space (square feet) each pedestrian has in the crosswalk or corner. These measurements depend on pedestrian volumes, signal timing, corner dimensions, crosswalk dimensions, and roadway widths.

With the *HCM* methodology, an upper limit for acceptable conditions is LOS D, which equals approximately 15 pedestrians per minute per foot for walkways, and 15 to 24 square feet per pedestrian for crosswalks and corners.

Table IV.D-3 presents the pedestrian analysis results for the weekday midday and PM peak hour conditions. During both the midday and PM peak hours, the pedestrian levels of service are LOS C or better at the sidewalk, crosswalk, and corner analysis locations.

Table IV.D-3: Pedestrian Level of Service, Existing Conditions – Weekday Midday and PM Peak Hours

		Level of Service	
Analysis Period/Location	**Pedestrians Per Hour**	**Measure of Effectiveness**	**LOS**
Midday Peak Hour			
Sidewalk		*ped/min/ft*	
Third Street	863	4.0	C
Howard Street	340	1.2	B
Crosswalks – Third/Mission		*sq. ft/ped*	
South	707	52.7	B
East	1,106	24.8	C
Corner – Third/Mission		*sq. ft/ped*	
Southeast	1,813	29.1	C
PM Peak Hour			
Sidewalk		*ped/min/ft*	
Third Street	869	4.0	C
Howard Street	330	1.1	B
Crosswalks – Third/Mission		*sq. ft/ped*	
South	491	62.4	A
East	896	39.5	C
Corner – Third/Mission		*sq. ft/ped*	
Southeast	1,387	38.5	C

Source: LCW Consulting, 2011.

It should be noted that during major exhibits (e.g., during the Frida Kahlo exhibit from June to September 2008), pedestrians waiting to purchase tickets queue within the recessed area in front of the Third Street entrance to the museum, and at times spill over onto the sidewalk on Third Street north of the museum entrance, and onto the Minna Street sidewalk east of Third Street. The duration and length of the queue affecting the Third Street and Minna Street sidewalk varies by time of day (i.e., it is generally greatest during the midday period), day of week (Tuesdays, Thursdays, Saturdays, and Sundays are the most popular days), and duration and popularity of the major exhibit. The impact of visitor queuing on the sidewalk on Third and Minna Streets results in a reduced effective walkway width, and reduced level of service, resulting in slower pedestrian speeds at the time the queuing occurs. The queuing does not occur during typical days.

<u>Fire Station Relocation and Housing Project Site Vicinity</u>. Sidewalks adjacent to the Fire Station Relocation and Housing Project site are 10 feet wide on Folsom Street, 6 feet wide on Falmouth Street, and 11 feet wide on Shipley Street (to the east of the project site, sidewalks on Shipley Street are 6 feet wide). Pedestrian countdown signals are provided at the adjacent intersections of Folsom Street with both Sixth Street and Fifth Street.

In the vicinity of the project site, pedestrian volumes are light to moderate throughout the day. On Folsom Street there are about 80 pedestrians during the midday peak hour, and about 110 pedestrians during the PM peak hour. Pedestrian volumes on Falmouth and Shipley Streets are lower than those on Folsom Street. Overall, the sidewalks and crosswalks in the vicinity of the project site were observed to be operating under satisfactory conditions, with pedestrians moving at normal speeds and with freedom to bypass other pedestrians.

Bicycle Conditions. Figure IV.D-7 presents the bicycle route network in the vicinity of the two project sites. Bikeways are typically classified as Class I, Class II, or Class III facilities.[4] Class I bikeways are bike paths with exclusive right-of-way for use by bicyclists. Class II bikeways are bike lanes striped within the paved areas of roadways and established for the preferential use of bicycles, while Class III bikeways are signed bike routes that allow bicycles to share travel lanes with vehicles.

[4] Bicycle facilities are defined by the State of California in the California Streets and Highway Code Section, 890.4.

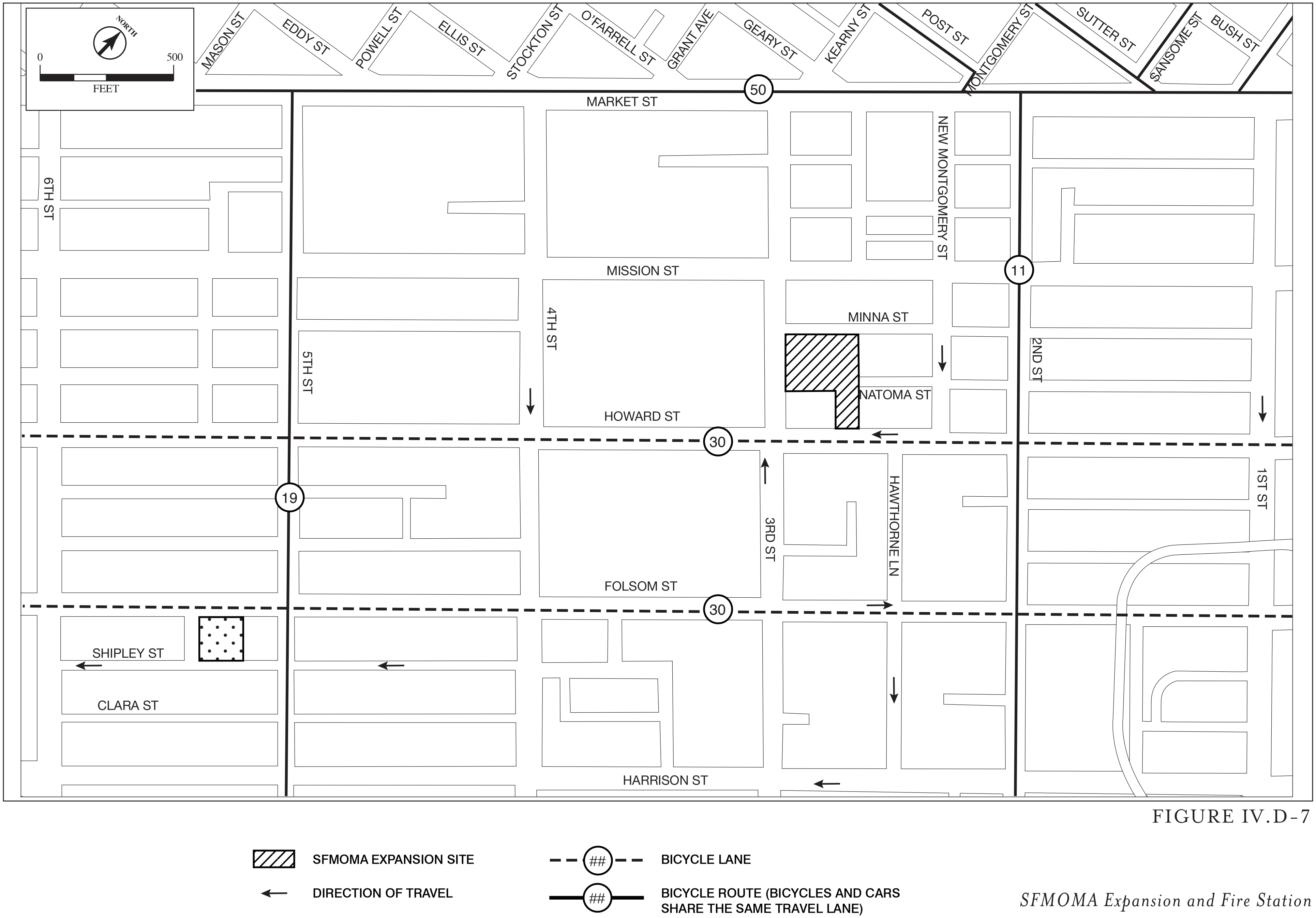

FIGURE IV.D-7

SOURCES: LCW CONSULTING, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Bicycle Route Network

As shown on Figure IV.D-7, there are five San Francisco Bicycle Routes in the vicinity of the project sites:

- Bicycle Route 11 runs in both directions on Second Street between Market Street and King Street as a signed route only (Class III facility).
- Bicycle Route 19 runs in both directions on Fifth Street between Market Street and Townsend Street as a signed route only.
- Bicycle Route 23 runs northbound on Seventh Street between Sixteenth Street and Market Street with a bicycle lane on the east side of the street.
- Bicycle Route 30 runs westbound on Howard Street between The Embarcadero and Eleventh Street. On Howard Street, a wider curb parking lane (Class III facility) is provided between Main and Fremont Streets, and a bicycle lane (Class II facility) is provided on the north side of Howard Street between Fremont and Eleventh Streets. Bicycle Route 30 runs eastbound on Folsom Street between Fourteenth Street and The Embarcadero as a Class II facility (signed route with bicycle lane) with a bicycle lane on the south side of the street.
- Bicycle Route 50 runs in both directions on Market Street between Castro Street and Steuart Street, with a bicycle lane in both directions west of Eighth Street.

During field surveys, a substantial number of bicyclists were observed to be riding in the vicinity of the two project sites, primarily along Market, Howard, and Folsom Streets. The majority of the bicyclists were messengers and commuters. No substantial safety conflicts between bicyclist and pedestrians or vehicles, or right-of-way issues were observed during field surveys.

The San Francisco Bicycle Plan includes planned improvements to Bicycle Route 11 on Second Street in the form of Class II and Class III bicycle facilities in both directions between King Street and Market Street. In addition, improvements are proposed to Bicycle Route 19 on Fifth Street to provide Class II and Class III facilities in both directions between Market Street and Townsend Street. An implementation schedule or detailed design has not yet been developed for these improvements.

Loading Conditions. Off-street loading facilities for deliveries, pickups, service, and recycling at the existing SFMOMA are provided at the Minna Street dock, Natoma Street pad (the terminus of Natoma Street), and the Minna Street pad. Based on delivery logs provided by SFMOMA, the number of existing loading/unloading and service vehicles at SFMOMA generally range between 11 and 17 vehicles per day.

Access to the on-site loading facility for the W Hotel is also provided via the Natoma parking pad. Because existing passenger car parking within the Hunt Street easement area constrains full use of the on-site loading facility, loading for the W Hotel occurs within the Natoma parking pad, and deliveries are carted to the hotel. Deliveries for the W Hotel also occur at the curb on Third Street in the early morning hours, and are carted to the service entrance on Hunt Street.

On-street parking along Third Street is standard metered parking, and loading/unloading related to SFMOMA does not occur from on-street parking spaces. The north side of Minna Street has metered commercial vehicle parking spaces, and these spaces could be used when the Minna Street pad is occupied. However, the existing SFMOMA does not utilize these spaces, as adequate capacity is provided at the off-street dock, and at the Minna and Natoma parking pads.

There are two passenger loading/unloading spaces on either side of the mid-block crosswalk on Third Street (a 29-foot-wide zone to the north of the crosswalk, and a 23-foot-wide zone to the south of the crosswalk). Due to the proximity to the crosswalk, the passenger loading/unloading zone operates as a standard parking space (i.e., rather than a longer zone serving multiple vehicles), which could result in conflicts between parking vehicles and pedestrians crossing at the midblock crosswalk. During field observations in April 2011, the passenger loading/unloading spaces were often occupied by parked vehicles, although passenger loading/unloading activities were also observed.

Parking Conditions. Existing off-street and on-street parking conditions were examined within the two parking study areas identified in Figure IV.D-1. Parking conditions were assessed for the weekday midday period (1:00 to 3:00 p.m.).

Off-Street Parking Conditions. Figure IV.D-8 presents the location of the public parking facilities in the study areas, and Table IV.D-4 presents the weekday midday and evening parking supply and occupancy data. In the SFMOMA Expansion parking study area, there are 30 off-street public parking facilities, providing about 9,200 spaces. Overall, the off-street parking facilities are occupied to about 76 percent of capacity during the weekday midday.

In the Fire Station Relocation and Housing Project parking study area there are three surface lots providing about 450 parking spaces. During the weekday midday period, these facilities are occupied to about 84 percent of capacity.

On-Street Parking Conditions. The existing on-street parking conditions were qualitatively assessed during the same time period as the off-street parking facilities. In general, on-street parking within the vicinity of both project sites is comprised of 1-hour standard metered spaces and 30-minute commercial vehicle metered spaces. On most streets, the commercial vehicle meters are in effect from 9:00 a.m. to 3:00 p.m., and on-street parking is generally prohibited during the morning (7:00 to 9:00 a.m.) and afternoon (between 3:00 and 6:00 p.m.) commute periods (e.g., on one or both sides of Third, Mission, Howard, and New Montgomery Streets). In general, the on-street parking spaces are well-utilized throughout the day; however, due to the 30-minute and commercial vehicle parking restrictions, commercial vehicle spaces are generally available. On-street parking spaces are generally available during the overnight hours.

Adjacent to the SFMOMA Expansion site, there are seven metered parking spaces on Third Street and two short passenger loading/unloading zones on either side of the midblock crosswalk (a 29-foot wide zone to the north of the crosswalk, and a 23-foot wide zone to the south of the crosswalk). There is one metered parking space on Howard Street (the curb adjacent to the fire station at 676 Howard Street is a driveway, and the remaining curb adjacent to the building at 670 Howard Street is a red zone). On-street parking is not permitted on the south side of Minna Street, while on the north side of Minna Street there are metered commercial vehicle parking spaces.

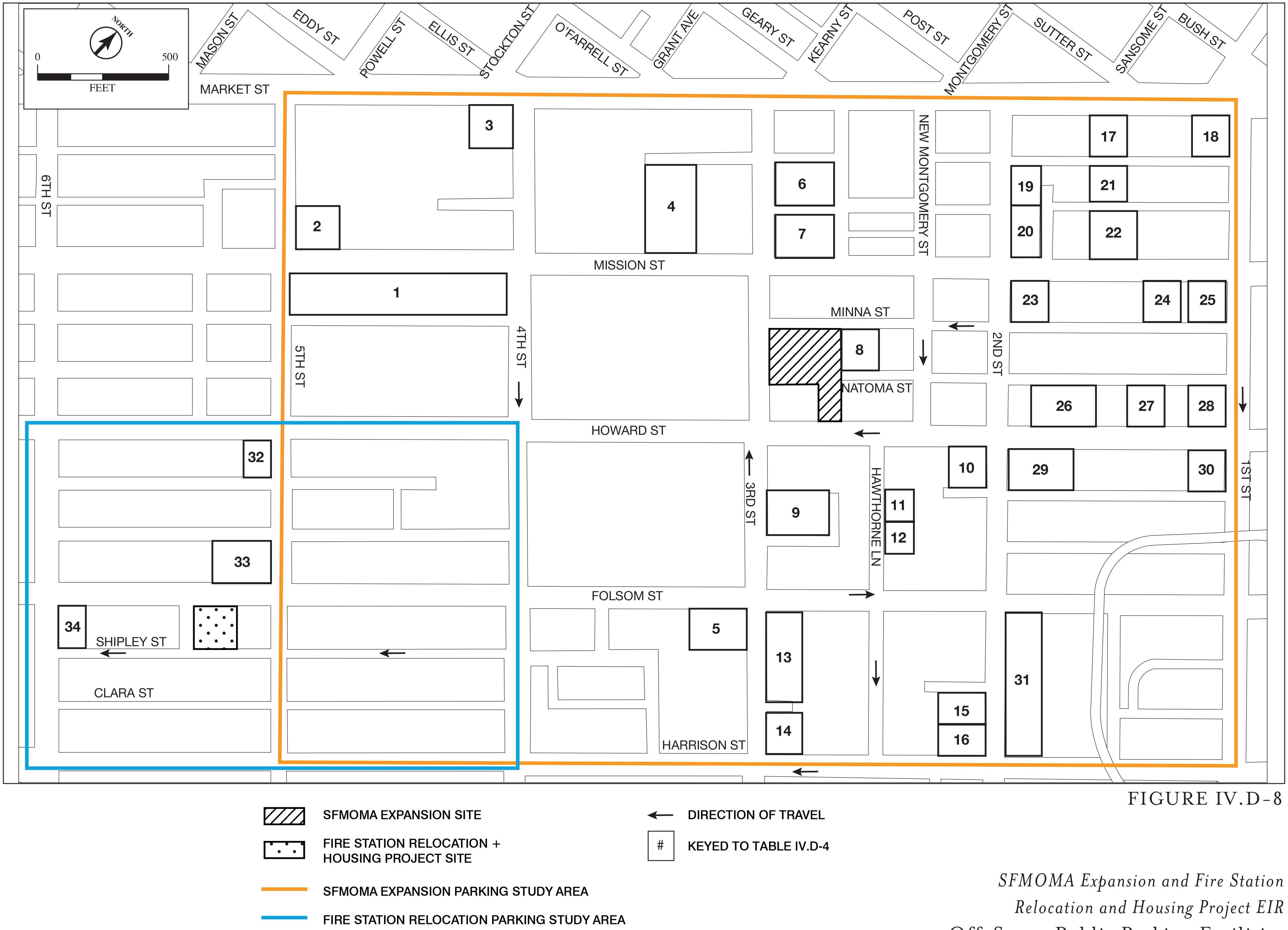

FIGURE IV.D-8

SOURCES: LCW CONSULTING, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Off-Street Public Parking Facilities

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Adjacent to the Fire Station Relocation and Housing Project site there are three metered parking spaces on Folsom Street, five 2-hour residential permit parking Area "U" spaces on Shipley Street, and nine unrestricted parking spaces on Falmouth Street.

Table IV.D-4: Off-Street Parking Supply and Utilization, Weekday Midday Conditions

Facility		Spaces	Occupied Spaces	Percent Occupied
SFMOMA Expansion Vicinity				
1	Fifth & Mission Garage	2,585	1,629	63%
2	Pickwick Hotel Garage	37	37	100%
3	Pacific Place Garage	100	55	55%
4	Jessie Square Garage	363	273	75%
5	Royal Parking Garage	337	327	97%
6	Hearst Garage	796	750	94%
7	Paramount Garage	350	196	56%
8	SFMOMA Garage	410	310	76%
9	Moscone Garage	752	734	98%
10	Priority Parking Lot	130	130	100%
11	55 Hawthorne Garage	289	206	71%
12	Hawthorne Plaza Garage	424	263	62%
13	St Francis Place Garage	400	300	75%
14	Third/Harrison Lot	100	78	78%
15	Central Parking Lot	135	130	96%
16	600 Harrison Garage	385	200	70%
17	555 Market Garage	45	45	100%
18	525 Market Garage	110	83	75%
19	55 Second Garage	110	110	100%
20	85 Second Garage	60	60	100%
21	Stevenson Place Garage	55	55	100%
22	560 Mission Garage	200	175	88%
23	101 Second Garage	80	45	56%
24	535 Mission Lot	130	60	46%
25	100 First Garage	174	103	59%
26	77 Natoma Garage	32	28	88%
27	Tower Valet Lot	70	60	86%
28	Foundry Square Garage	100	79	79%
29	Tom Lot	20	15	75%
30	515 Howard Lot	150	96	64%
31	Marathon Plaza Garage	358	344	96%
	subtotal	*9,187*	*6,956*	*76%*
Fire Station Relocation Vicinity				
32	301 Sixth Street Lot	71	67	94%
33	900 Folsom Street Lot[1]	270	246	91%
34	Tower Valet Parking Lot	125	76	61%
	subtotal	*446*	*389*	*84%*

Note:

[1] This parking lot would be eliminated as part of the 900 Folsom Street project.

Source: AECOM surveys conducted in 2008 as part of the Transit Center District Plan project and CHS Consulting surveys as part of the 260 Fifth Street project conducted in 2009; reviewed by LCW Consulting in October 2010.

Project Travel Demand

Project travel demand refers to the new vehicle, transit, and pedestrian traffic generated by the proposed projects. This section provides an estimate of the travel demand, including parking and freight loading, that would be generated by the proposed projects. Appendix G of the Transportation Impact Analysis contains the weekday daily and PM peak hour trip travel demand calculations and assumptions, including the parking and loading demand calculations.

SFMOMA Expansion Travel Demand. As described in Chapter II, Project Description, the proposed project would add approximately 230,000 square feet to the museum that would increase the existing gallery space by about 116,250 square feet, and integrate the currently distributed museum support functions within a single new building. With the museum expansion, the number of employees and annual visitorship would increase.

Since the proposed project includes expanding the 3,000 square feet of café functions (Caffé Museo) at the ground floor level to a full-service restaurant of about 5,715 square feet that would be open during the evenings, the additional trips associated with the net-new restaurant space was calculated and presented separately. It is anticipated that the restaurant would continue to serve visitors to the museum, and therefore, a credit for linked/passby trips of 50 percent was applied.[5] Passby trips are trips that are already within the transportation network that would visit the restaurant. For example, in addition to trips by visitors to SFMOMA, visitors at a convention at the Moscone Center walking on Third Street could decide to visit the restaurant, or visitors to the nearby Yerba Buena Arts Center, Jewish Museum or other cultural destinations in the vicinity could make an additional stop at the restaurant as part of their trip to the area. The new trips were calculated based on the net-new square footage of 2,715 square feet (5,715 less 3,000 existing = 2,715 square feet).

SFMOMA is currently open to the public on weekdays and weekends, except on Wednesdays. Museum hours are 11:00 a.m. to 5:45 p.m. on Fridays through Tuesdays, and 11:00 a.m. to 8:45 p.m.

[5] Based on studies of non-work (visitor) trips performed at visitor attractions in the San Francisco waterfront and the type of restaurant use proposed, surveys found that 50 to 90 percent of visitor trips are linked trips. As such, the daily and PM peak hour trips for restaurant uses reflect a 50 percent linked trip reduction.

on Thursdays. Museum store hours are 10:00 a.m. to 6:30 p.m. on Fridays through Tuesdays, and 10:00 a.m. to 9:30 p.m. on Thursdays. Caffé Museo hours are 10:00 a.m. to 6:00 p.m. on Fridays through Tuesdays, and 10:00 a.m. to 9:00 p.m. on Thursdays. Rooftop Coffee Bar hours are 11:00 a.m. to 5:00 p.m. on Fridays through Tuesdays, and 11:00 a.m. to 8:00 p.m. on Thursdays. Between Memorial Day and Labor Day the museum opens at 10:00 a.m. The museum is closed on New Years Day, Thanksgiving and Christmas. The museum visitor days and hours would be expected to remain the same with the proposed expansion. As noted above, the existing Caffé Museo (about 3,000 square feet) would be expanded and replaced with a 5,715 square foot restaurant that would be open during the evenings (exact hours of operation have not yet been identified).

Existing and Future Museum Visitor Levels. Based on surveys conducted by Baine Consulting Group of museum visitorship at other comparable museums (attached in Appendix G of the Transportation Impact Analysis), it is anticipated that the SFMOMA Expansion would result in an increase in general admissions by approximately 20 percent once the visitorship stabilizes following opening of the project to the public. To ensure a transportation impact analysis that does not underestimate potential impacts, general admission, school programs, other daytime programs, and other events were assumed to increase by 30 percent over the year 2008-2010 average conditions.

For the transportation impact analysis, the person trip-generation for the museum expansion was based on net-new visitors to the expanded museum. Historic attendance levels were used to estimate the trip generation of the current SFMOMA and the proposed expansion. Data from years 2007, 2008 and 2009 were used to approximate the characteristics of the future attendance levels. The 2008 and 2009 attendance levels included major exhibits, including Frida Kahlo (June – September 2008), Georgia O'Keefe and Ansel Adams (May – September 2009), and Richard Avedon (July – November 2009). Year 2010 data did not include any major exhibits. Table IV.D-5 presents the general admissions by month for the three years that were used in the transportation analysis.

In addition to general admissions, visitors to SFMOMA are generated by school programs, daytime programs, corporate rental events, and evening public and member events. The average annual attendance for these programs is about 45,000 visitors. Corporate rental events and public and member evening events do not occur every day of the week, and generally take place after regular museum hours (after 6:00 p.m.) or on Wednesdays when SFMOMA is closed to the general public.

Table IV.D-5: SFMOMA General Admissions Visitors by Month

Month	2010	2009	2008	3-Year Average
January	57,286	39,935	52,726	49,982
February	35,626	30,120	49,860	38,535
March	36,800	37,854	43,445	39,366
April	40,820	37,813	33,643	37,425
May	35,096	58,911	38,817	44,275
June	35,291	63,396	73,220	57,302
July	75,049	92,315	117,507	94,957
August	71,143	109,928	131,986	104,352
September	46,724	61,449	109,795	72,656
October	34,072	54,641	31,443	40,052
November	47,363	53,091	35,716	45,390
December	57,760	33,026	40,232	42,006
Total	**568,030**	**672,479**	**758,390**	**666,300**

Note: General Admissions only. Visitors related to school programs, daytime programs, corporate rental events, evening public events, and evening member events account for an additional 45,000 visitors per year.

Source: SFMOMA, 2011.

The number of visitors to SFMOMA varies seasonally, and based on the popularity of exhibits. On a monthly basis, the greatest number of visitors is in May through September. To account for the variability in attendance levels, the travel demand analysis uses average monthly and daily values, plus one standard deviation, thereby capturing about two-thirds of all cases.

To determine the anticipated increase in visitors, the number of visitors associated with general admissions, school programs, daytime programs, corporate rental events, and evening public and member events were increased by 30 percent of the 3-year average (plus one standard deviation), resulting in an overall increase of 213,304 annual visitors. The monthly to annual ratio, and daily to monthly ratio were applied to the growth to determine the average monthly and daily net-new growth. Table IV.D-6 summarizes the existing and projected visitor levels at SFMOMA on an annual and monthly basis, and for typical weekday and Saturday conditions. While the number of general admissions visitors on Sunday is generally similar to the number on Saturday, there are fewer public and member events on Sunday, and the transportation network is less congested than on weekdays or Saturdays. Therefore, Sunday conditions were not analyzed.

Table IV.D-6: SFMOMA Expansion – Existing and Proposed Expansion Total Visitors

Visitors	Existing Museum[1, 2]	Proposed Expansion[2]	Net New Visitors
Annual Visitors	711,000	924,304	213,304
Monthly Visitors	87,071	113,192	26,121
Weekday Visitors	3,664	4,712	1,048
Saturday Visitors	3,388	4,523	1,135

Notes:

1 Based on attendance data for 2008, 2009, and 2010, and includes general admissions, school programs, daytime programs, corporate rental events, evening public events, and evening member events.

2 Monthly and daily visitors reflects average, plus one standard deviation.

Source: SFMOMA, LCW Consulting, 2011.

Since a portion of total visitors do not visit the museum during the standard hours (e.g., during rental events on days the museum is closed, and evening member and public events), the weekday growth in visitors was adjusted. Based on the existing proportion of weekday daytime visitors on typical museum days, it was projected that about 90 percent of the daily weekday growth would occur between the weekday 11:00 a.m. to 6:00 p.m. museum hours. Therefore, of the projected increase of 1,048 visitors on a weekday basis, 943 visitors would visit the museum between 11:00 a.m. and 6:00 p.m. Two trips per person (one inbound on arrival, and one outbound for departure) were assumed for each visitor to the museum. Therefore on a typical weekday, there would be a net-new increase of 1,886 person trips traveling to and from the museum (943 visitors x two trips per visitor). On a Saturday there would be a net-new increase of 2,270 person-trips traveling to and from the museum (1,135 visitors x two trips per visitor).

To determine the weekday and Saturday peak hours of activity, hourly arrival information was obtained from SFMOMA entrance counts for the week of August 17, 2009. Based on these counts, it was determined that the weekday midday peak hour of activity is generally between 12:00 and 1:00 p.m., during which approximately 17 percent of the daily trips occur (44 inbound and 56 percent outbound). During the evening 5:00 to 6:00 p.m. peak hour, approximately 5.8 percent of the daily trips occur (6 percent inbound and 94 percent outbound) – 109 visitor person-trips (1,886 x 0.058 = 109 person-trips). The Saturday midday peak hour of activity occurs between 12:00 and 1:00 p.m., during which time approximately 17.3 percent of the daily trips occur (48 percent inbound and 52 percent outbound) – 393 visitor person-trips (2,270 x 0.173 = 393 person-trips).

Existing and Future Museum Staffing Levels. The proposed SFMOMA Expansion would result in an increase in future employment at SFMOMA. According to SFMOMA, the museum currently employs approximately 213 full-time-equivalent (FTE) employees. In addition, SFMOMA uses the services of volunteers, docents, contract security staff, contract janitorial staff, and contract building engineers totaling the equivalent of 170 FTE's. Upon completion of the project, SFMOMA anticipates an approximately 23 percent increase in FTE employees, or approximately 49 additional full-time staff. Thus, with implementation of the SFMOMA Expansion, and considering the use of docents, etc., overall employment at SFMOMA is estimated to increase by 87 projected FTEs. SFMOMA employee projections are included in Appendix G of the Transportation Impact Analysis.

For purposes of the transportation analysis, the maximum number of employees that would be present at the site during the daytime hours was calculated for existing and proposed conditions. Table IV.D-7 summarizes the existing and proposed number of employees by employee type.

Table IV.D-7: SFMOMA Expansion – Existing and Proposed Daytime Employees, Weekday and Weekend Employee Populations

	Weekday		Saturday	
	Existing	**Proposed**	**Existing**	**Proposed**
Employees				
Full time [1]	160	200	11	14
Part time [1]	35	44	22	28
Docents [2]	20	25	22	28
Volunteers/Interns [3]	93	115	11	19
subtotal	*308*	*384*	*66*	*89*
Security	**34**	**38**	**34**	**39**
Other				
Janitorial	2	2	2	2
Food Service	16	19	16	19
Engineering	2	2	1	1
subtotal	*20*	*23*	*19*	*22*
Total	**362**	**445**	**119**	**150**
Net-New		**83**		**31**

Table notes on next page.

Notes:

1 Full time employee weekday shift is between 9:00 a.m. and 5:00 p.m., weekends between 10:30 a.m. and 5:30 p.m. For part-time employees, same shift is assumed.

2 Docent weekday shift 9:30 a.m. to 2:00 p.m., and weekends between 9:30 a.m. and 2:00 p.m.

3 Volunteer and intern weekday shift 9:00 a.m. to 5:00 p.m., and weekends 10:00 a.m. to 1:00 p.m.

Source: SFMOMA, LCW Consulting, 2011.

With the SFMOMA Expansion, the number of employees that would be present at SFMOMA during the day would increase by 83 employees on a typical weekday, and by 31 employees on a typical Saturday. The trip generation rate for employees was based on trip generation rates from the *SF Guidelines*, and assumed that each employee would make on average 4.5 trips per day. This rate accounts for the arrival and departure trips, plus two and a half trips away from the site for lunch or other purposes during the work day.[6] Based on the *SF Guidelines*, it was assumed that 8.5 percent of the daily employee person trips would occur during the weekday PM and Saturday midday peak hours.

Therefore on a typical weekday, the 83 additional employees would generate 374 new person-trips, while on Saturdays, the 31 additional employees would generate 140 new person-trips.

Expanded Restaurant Trips. The person-trip generation for the net-new increase (i.e., 2,715 square feet) in restaurant uses at the museum (taking into account extended restaurant hours), is based on daily and weekday PM peak hour trip generation rates for a quality sit-down restaurant as provided in the *SF Guidelines*. Saturday travel demand was based on the weekday trip generation rate from the *SF Guidelines*, adjusted based on weekday and weekend rates for quality restaurant uses from the Institute of Traffic Engineers ("ITE") Trip Generation Manual. For Saturday conditions, daily trip generation is slightly higher (i.e., about 210 trips per 1,000 square feet on Saturdays, compared with 200 trips per 1,000 square feet during weekdays). The percentage of daily trips occurring during the midday peak hour was assumed to be the same as for weekday conditions (i.e., 13.5 percent of daily

[6] Employee trip generation is based on office and manufacturing rates, and is consistent with employee trip generation assumptions for the Exploratorium Relocation Project EIR (Case No. 2006.1073E, July 2009). 4.5 trips per employee per day, and 8.5 percent of daily trips were assumed to occur during the PM peak hour. During the PM peak hour 100 percent of the work trips were assumed to be outbound from the project site.

trips). Since it is anticipated that the restaurant would continue to serve visitors to the museum and visitors already in the area, a credit for linked/passby trips of 50 percent was applied.

The expanded restaurant uses would generate an additional 37 new person-trips during the weekday PM peak hour and 38 new person-trips during the Saturday midday peak hour.

Net-New Person Trips. Table IV.D-8 summarizes the weekday PM and Saturday midday peak hour person-trip generation for the SFMOMA Expansion.

Table IV.D-8: SFMOMA Expansion – Net-New Daily and Peak Hour Person-Trips

	Weekday	Saturday
Daily		
Museum Visitors	1,886	2,270
Museum Employees	374	140
Restaurant	272	285
Total	**2,532**	**2,695**
Weekday PM Peak Hour		
Museum Visitors	109	--
Museum Employees	32	--
Restaurant	37	
Total	**178**	**--**
Saturday Midday Peak Hour		
Museum Visitors	--	393
Museum Employees	--	12
Restaurant	--	38
Total	**--**	**443**

Source: SFMOMA, LCW Consulting, 2011.

Directional Distribution and Mode Split. Directional distribution and mode split for visitor and employee person trips for the museum visitors and restaurant patrons was based on information from the *SF Guidelines*. The person-trips generated by the SFMOMA Expansion were assigned to travel modes in order to determine the number of net-new auto, transit and other trips. The category labeled "other" includes walk, bicycle, motorcycle, tour bus, taxi and additional modes. Average vehicle occupancies from the *SF Guidelines* information was used to determine the number of vehicle trips generated by the auto-person trips. Table IV.D-9 summarizes the estimated mode splits for employee and visitor trips.

Table IV.D-9: SFMOMA Visitor and Employee Mode Split Percentages

	Auto	Transit	Walk/Other [1]
Museum and Restaurant Visitors [2]	36%	28%	36%
Employees [3]	31%	58%	11%

Notes:

[1] "Other" mode includes bicycles, motorcycles, tour buses and taxis

[2] *SF Guidelines*, Table E-9, Visitor trips to C-3 – All Other

[3] *SF Guidelines*, Table E-2, Work trips to C-3 - All Other

Source: *SF Guidelines*, LCW Consulting, 2011.

The visitor travel mode splits from the *SF Guidelines* are generally consistent with results from SFMOMA visitor surveys. Visitor surveys conducted in April, August, and December 2009 indicated that between 27 and 35 percent of visitors drive, between 29 and 34 percent take transit, and between 31 and 44 percent walk or take other modes. Of the visitors that drove, about 30 percent parked at the SFMOMA garage, 30 percent parked at the Fifth and Mission Garage, 20 percent parked at other garages in the area, and about 20 percent parked on the street.

Table IV.D-10 summarizes the weekday and Saturday peak hour trip generation by mode for the SFMOMA Expansion. During the weekday PM peak hour, the SFMOMA Expansion would generate 178 net-new person trips and 36 net-new vehicle trips (four inbound and 32 outbound). During the Saturday midday peak hour, the SFMOMA Expansion would result in 443 net-new person trips and 87 net-new vehicle trips (42 inbound and 45 outbound).

Table IV.D-10: SFMOMA Expansion Net-New Trip Generation by Mode, Weekday PM and Saturday Midday Peak Hour Conditions

Land Use	Person-Trips				Vehicle Trips
	Auto	Transit	Walk/Other [1]	Total	
Weekday PM					
Museum Visitor	39	31	39	109	21
Museum Employee	10	18	4	32	8
Restaurant	13	11	13	37	7
subtotal	*62*	*60*	*56*	*178*	*36*
Saturday Midday					
Museum Visitor	141	10	142	393	77
Museum Employee	4	7	1	12	3
Restaurant	14	11	14	38	7
subtotal	*159*	*128*	*156*	*443*	*87*

Notes:

[1] "Other" mode includes bicycles, motorcycles, tour buses and taxis.

Source: *SF Guidelines*, LCW Consulting, 2011.

The directional distribution of trips generated by the SFMOMA Expansion is presented in Table IV.D-11, and was based on the *SF Guidelines* for visitor and work trips to the C-3 district. The distribution was based on the origin/destination of a specific trip, and is separated into the four quadrants of San Francisco (Superdistricts 1 through 4), East Bay, North Bay, South Bay, and out of region. These distribution patterns were used as the basis for assigning project-related trips to local streets in the study area and the local and regional transit operators. Figure IV.D-9 presents the general assignments for vehicle trips to and from the nearby parking facilities.

Table IV.D-11: SFMOMA Expansion – Trip Distribution Patterns

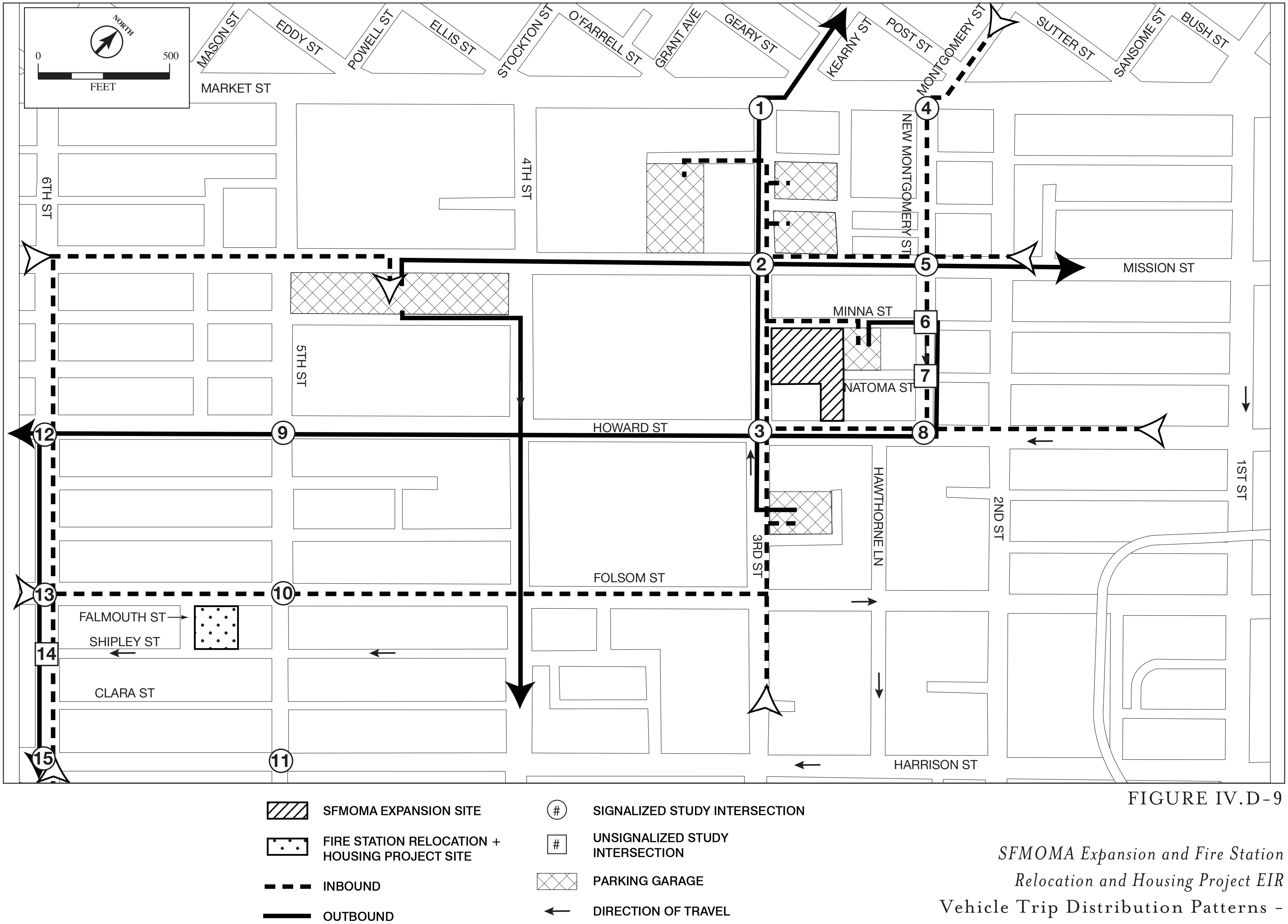
Origin/Destination	Visitors [1]	Employees [2]
San Francisco		
Superdistrict 1	26%	14%
Superdistrict 2	13%	16%
Superdistrict 3	13%	20%
Superdistrict 4	5%	12%
East Bay	11%	23%
North Bay	7%	3%
South Bay	10%	11%
Outside of Region	15%	1%
Total	**100%**	**100%**

Notes:

[1] *SF Guidelines,* Table E-9, Visitor trips to C-3 – All Other.

[2] *SF Guidelines*, Table E-2, Work trips to C-3 – All Other.

Source: SF Guidelines.



SOURCES: LCW CONSULTING, 2011.

FIGURE IV.D-9

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Vehicle Trip Distribution Patterns - SFMOMA Expansion

Table IV.D-12: SFMOMA – Existing Loading Demand

Location/Type	Frequency
Natoma Pad	
Recycling	1 to 2 per day
Minna Dock	
Deliveries	6 to 19 per day
Pickups	3 per day
Minna Pad	
Deliveries	1 to 2 per day
Other Services	0 to 1 per day
Total	**11 to 27 per day**

Source: SFMOMA, 2010.

The number of existing loading/unloading and service vehicles at SFMOMA can range between 11 and 17 vehicles per day, and deliveries include store and office supplies, food service for the café, and exhibition pieces. Depending on when art deliveries occur, the number of deliveries can increase by up to 13 vehicles per day. Most of the deliveries occur during weekdays and can be accommodated within the Minna loading dock and Minna pad. Prior to an exhibition, the number of event art trucks could vary from two per week to four trucks per day. Art truck deliveries often require large moving vans or semi trucks. The total maximum number of deliveries/pickup/service vehicles is therefore 27 vehicles per day (up to 17 per day, plus seven additional vehicles for weekly or less frequent deliveries, plus three additional vehicles for art events).

With the SFMOMA Expansion, it is not anticipated that the maximum number of deliveries within one day would increase. However, the number of days when more than 11 truck/service vehicle trips occur would increase (e.g., deliveries currently occurring one to two times per week could occur on a daily basis).

The expanded restaurant may result in additional deliveries, depending on the type of restaurant and type of deliveries serving the existing café. Cafés typically have a greater turnover than sit-down restaurants and therefore a greater demand for supplies. Based on the *SF Guidelines*, the expansion of 2,715 square feet could result in up to an additional 10 deliveries and service vehicles per day, although, as noted above, due to the change in restaurant type, the loading demand may remain the same or only slightly increase.

Combined, the maximum of 37 deliveries/service vehicle trips per day (27 truck/service vehicle trips for the museum uses and 10 truck/service vehicle trips for the restaurant uses) would result in a demand for two loading spaces during the peak hour of loading activities.

Parking Demand. Parking demand for the SFMOMA Expansion was determined based on the methodology presented in the *SF Guidelines*. Parking demand typically consists of both long-term demand (typically employee parking) and short-term demand (typically visitor parking). As shown in Table IV.D-13, the SFMOMA Expansion would generate a net-new parking demand of about 61 spaces on a typical weekday and 75 spaces on a typical Saturday. Detailed parking calculations are presented in Appendix G of the Transportation Impact Analysis.

Table IV.D-13: SFMOMA Expansion – Net-New Weekday Parking Demand

Type	Parking Demand (Spaces)
Weekday	
Visitor short-term demand	38
Employee long-term demand	23
Total	**61**
Saturday	
Visitor short-term demand	65
Employee long-term demand	10
Total	**75**

Source: *SF Guidelines*, LCW Consulting, 2011.

- The museum visitor (including restaurant) short-term parking demand was estimated based on the total net-new daily visitor trips by car, and an average daily turnover rate of 5.5 vehicles per space. The net-new visitors would generate a net-new parking demand of about 38 spaces on a weekday and 65 spaces on a Saturday.
- The museum employee long-term demand (including restaurant employees) was estimated based on the 83 net-new employees at the museum and eight new employees at the restaurant, the percentage of employees that are projected to drive, and an average vehicle occupancy rate of 1.22 persons per vehicle. The new museum and restaurant employees would result in a net-new parking demand of 23 spaces on a weekday and 10 spaces on a Saturday.

Fire Station Relocation Travel Demand. The travel demand associated with the Fire Station Relocation would be the same as at the existing Fire Station No. 1 at 676 Howard Street. The fire station would continue to have 13 firefighters on-site during a typical day, and would be staffed 24-hours a day, 365 days of the year. All employees work in 24-hour shifts, which officially start at 8:00 a.m.; firefighter arrivals and departures from the station overlap between 7:30 and 8:30 a.m.

Travel demand associated with the relocated fire station was based on data obtained from the San Francisco Fire Department (SFFD) regarding existing operations at Fire Station No. 1 for 2009. Travel demand comprises responses to incidents, and employee, battalion chief, and administrative trips. Table IV.D-14 summarizes the daily and PM peak hour trips by type of trip.

Table IV.D-14: Fire Station No. 1 – Daily and PM Peak Hour Travel Demand

Trip Type/Category [1]	Daily	PM Peak Hour
Incident Responses [2]	80	5
Employees [3]	26	0
Battalion Chief [4]	4	2
Administrative Trips [5]	20	1
Total	**170**	**8**

Notes:

1 Includes inbound and outbound trips.

2 Includes responses by engine, truck and rescue squad. In 2009, combined, the vehicles responded to 11,257 responses, resulting in an average of 31 responses per day. As a conservative assessment, the transportation impact analysis assumed 40 responses per day. Based on a sample of responses in January, May and September, about 6 percent of daily responses occur during the PM peak hour.

3 Employee trips to and from the station. Employee shift change occurs between 7:30 and 8:30 a.m.

4 Battalion Chief visits on average one to two times per day. Assume that one of two trips occurs during the PM peak hour.

5 Administrative trips include vehicle trips associated with drills, deliveries, supplies, shopping, fueling, inspection, and service. Estimate that 5 percent of trips occur during the PM peak hour.

Source: SFFD, 2009; LCW Consulting, 2011.

Parking demand associated with the Fire Station includes private vehicle parking for the 13 firefighters, and parking for the Battalion Chief visits, for a total parking demand for 14 vehicles. It should be noted that firefighters do not use their private vehicles during their shifts; once the vehicle is parked, it is not moved until the following morning during the shift change.

Delivery and service vehicle loading demand was included within the number of administrative trips in Table IV.D-14 above. Loading demand would primarily include deliveries of supplies and maintenance and service vehicles.

Housing Project Travel Demand. The proposed project would include 13 multi-family residential units on the southern portion of the Fire Station Relocation site.

Trip Generation. The person-trip generation for the housing component of the Fire Station Relocation and Housing Project includes trips made by residents and visitors. Person-trip generation is based on daily and weekday PM peak hour trip generation rates (number of trips per unit) provided in the *SF Guidelines*. Preliminary design of the housing project includes two studios, five one-bedroom units, and six two-bedroom units. As a conservative assumption, all residential units were assumed to be two-bedroom (or more) units, which generate a higher number of daily trips than studio or one-bedroom units.

Table IV.D-15 presents the weekday daily and PM peak hour trip generation rates and daily and PM peak hour person trips generated by the residential uses. The Housing Project component would generate about 130 person trips on a weekday daily basis and 22 person trips during the weekday PM peak hour.

Table IV.D-15: Housing Project – Person-Trip Generation

Land Use	Size	Person Trip Generation Rates: Daily Trip Rate	PM Peak Hour as % of Daily	Person Trips: Daily	PM Peak Hour
Residential: 2+ bedrooms	13 units	10 per unit	17.3%	130	22

Source: *SF Guidelines*, LCW Consulting, 2011.

Directional Distribution and Mode Split. The project-generated person trips were assigned to travel modes in order to determine the number of auto, transit and "other" trips. Mode split information for the residential uses was based on the 2000 U.S. Census journey-to-work data for Census Tract 178. Table IV.D-16 summarizes the weekday PM peak hour trip generation by mode for the Housing Project. During the weekday PM peak hour, about 32 percent of all person trips would be by auto, 27 percent would be by transit, and 41 percent would be by other modes (including walking and bicycling). The Housing Project would generate about 6 vehicle trips during the weekday PM peak hour, of which four vehicle trips (67 percent) would be inbound to the project site, and two vehicle trips (33 percent) would be outbound from the project site.

Table IV.D-16: Housing Project – Trip Generation by Mode, Weekday PM Peak Hour

Land Use	Person Trips				Vehicle Trips
	Auto	Transit	Walk/Other[1]	Total	
Residential	7	6	9	22	6

Note:

[1] "Other" mode includes bicycles, motorcycles, and taxis.

Source: *SF Guidelines*, 2000 U.S. Census; LCW Consulting, 2011.

The directional distribution of the residential trips was obtained from the 1990 Census data for Census Tract 178. The 1990 Census data were used because directional distribution information is not available from the 2000 Census. Distributions are based on the origin/destination of the trip, and are separated into the four quadrants of San Francisco (Superdistricts 1 through 4), East Bay, North Bay, South Bay, and outside the region. As shown in Table IV.D-17, the majority of the project-generated residential trips during the weekday PM peak hour would come to and from Superdistrict 1.

Table IV.D-17: Housing Project – Trip Distribution Patterns

Origin/Destination	Work and Non-Work
San Francisco	
Superdistrict 1	60.2%
Superdistrict 2	8.6%
Superdistrict 3	8.6%
Superdistrict 4	8.6%
East Bay	3.5%
North Bay	0.6%
South Bay	8.8%
Outside of Region	1.1%
Total	**100%**

Source: *SF Guidelines*; 1990 U.S. Census data for Census Tract 178.

These trip distribution patterns were used as the basis for assigning project-generated vehicle trips to the local streets in the study area. Since Falmouth Street is one-way northbound and Shipley Street is one-way westbound, residents would access the project garage driveway on Falmouth Street via

Shipley Street westbound, and exit from Falmouth Street onto Folsom Street. Figure IV.D-10 presents the vehicle-trip assignments for the Housing Project for inbound and outbound trips.

Loading Demand. The delivery/service vehicle demand was estimated based on the methodology and truck trip generation rates presented in the *SF Guidelines*. The 13 new residential units would generate less than one delivery/service vehicle trip per day. This corresponds to a demand for less than one loading space during the peak and average hours of loading activity.

It is anticipated that most of the delivery/service vehicles that would be generated by the Housing Project would primarily consist of small trucks and vans (e.g., parcel delivery trucks), with occasional large and small moving vans. The size of the moving vans/trucks would depend on the size of the move and distance. Local residential moves are typically conducted by 16 to 26-foot long trucks, while long- distance moves are often conducted by trucks 53 feet in length or longer.

Parking Demand. The parking demand associated with the Housing Project was determined based on the methodology presented in the *SF Guidelines*. For residential units, the long-term parking demand is based on the number and size of the units at a rate of 1.1 and 1.5 spaces per unit for studios/one-bedroom and two-plus bedroom units, respectively.

By conservatively assuming that all of the residential units would have two or more bedrooms, the 13 residential units would generate a demand for 20 long-term parking spaces. The peak residential parking demand would occur primarily at night, although a portion of the residential demand would also occur during the day. During the weekday midday, the residential parking demand is estimated to be about 80 percent of the overnight demand, or about 10 parking spaces.

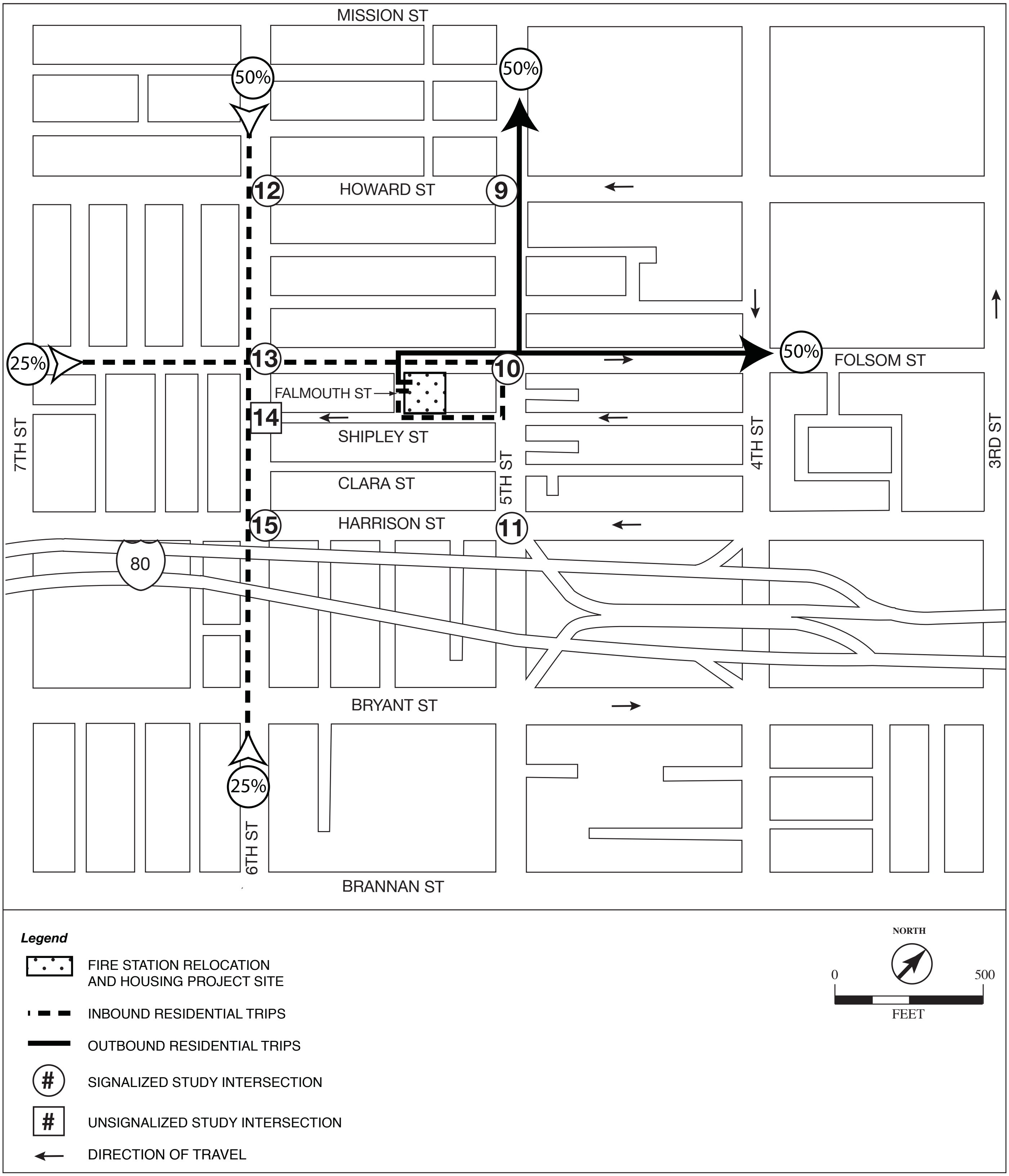


FIGURE IV.D-10

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Vehicle Trip Distribution Patterns - Housing Project

SOURCE: LCW CONSULTING, 2011.

Impacts

This section analyzes the impacts to the transportation system that could result from the proposed projects. The section begins with the significance criteria, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the proposed projects. Transportation conditions were assessed for Existing plus Project and 2030 Cumulative conditions.

Significance Criteria. The City has not formally adopted significance standards for impacts related to transportation and circulation, but generally considers that implementation of the project could have a potentially significant impact related to transportation and circulation if it were to:

- Conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
- Conflict with an applicable congestion management program, including but not limited to level-of-service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses;
- Result in inadequate emergency access; or
- Conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities.

Below is a list of significance criteria used by the San Francisco Planning Department to assess whether a proposed project would result in significant impacts. These criteria are organized by mode to facilitate the transportation impact analysis; however, the transportation impact criteria are essentially the same as the ones presented above.

- In San Francisco, the threshold for a significant adverse impact on traffic has been established as deterioration in the level of service (LOS) at a signalized intersection from LOS D or better to LOS E or LOS 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 LOS F and Caltrans signal warrants would be met, or causes Caltrans signal warrants to be met when the worst approach is already at LOS E or LOS F.

  For an intersection that operates at LOS E or LOS F under existing conditions, there may be a significant adverse impact depending upon the magnitude of the project's contribution to the worsening of delay. In addition, a project would have a significant adverse effect if it would cause major traffic hazards, or would contribute considerably to the cumulative traffic increases that would cause the deterioration in LOS to unacceptable levels (i.e., to LOS E or LOS F).

- 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 operating costs or delays 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.

- 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.

- 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.

- The project would have a significant effect on the environment if it would result in a loading demand during the peak hour of loading activities that could not be accommodated within the proposed on-site loading facilities or within convenient on-street loading zones, and if it would create potentially hazardous traffic conditions or significant delays affecting traffic, transit, bicycles or pedestrians.
- A project would have a significant effect on the environment if it would result in inadequate emergency access.
- Construction-related impacts generally would not be considered significant due to their temporary and limited duration.

Existing Plus Project Conditions. As described in Chapter II, Project Description, the proposed projects involve travel demand associated with three distinct components:

- Expansion of an existing museum;
- Relocation of Fire Station No. 1; and,
- A new 13-unit housing project.

Although the fire station use would not be a new use, and the existing travel demand is reflected in the description of the existing transportation conditions, the travel demand associated with this project component was assumed as new trips to assess the localized impacts of the relocated fire station. In addition, as a conservative assessment, the vehicle trips associated with the existing station were not subtracted from intersection volumes in the vicinity of the existing fire station. For Saturday analysis of intersection LOS, it was assumed that the travel demand for the fire station and residential component would be the same as during the weekday PM peak hour. Table IV.D-18 summarizes the net-new weekday PM and Saturday midday travel demand by mode, by project component.

Table IV.D-18: Proposed Project – Net-New Peak Hour Trip Generation by Mode, Weekday PM and Saturday Midday Conditions

Land Use	Person-Trips				Vehicle Trips
	Auto	Transit	Walk/Other[1]	Total	
Weekday PM					
SFMOMA Expansion					
Museum Visitor	39	31	39	109	21
Museum Employee	10	18	4	32	8
Restaurant	13	11	13	37	7
subtotal	*62*	*60*	*56*	*178*	*36*
Fire Station Relocation	8	0	0	8	8
Housing Project	7	6	9	22	6
Total	***77***	***66***	***65***	***208***	***50***
Saturday Midday					
SFMOMA Expansion					
Museum Visitor	141	10	142	393	77
Museum Employee	4	7	1	12	3
Restaurant	14	11	14	38	7
Subtotal	*159*	*128*	*156*	*443*	*87*
Fire Station Relocation	8	0	0	8	8
Housing Project	7	6	9	22	6
Total	***174***	***134***	***165***	***473***	***101***

Notes:

[1] "Other" mode includes bicycles, motorcycles, tour buses and taxis.

Source: *SF Guidelines*, SFMOMA, LCW Consulting, 2011.

Impact TR-1: The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project would not cause the level of service of an intersection to substantially deteriorate. (Less Than Significant)

As indicated on Table IV.D-18, above, during the weekday PM peak hour, the proposed projects would generate 50 net-new vehicle trips (12 inbound and 38 outbound), while during the Saturday midday peak hour, the proposed projects would generate 101 net-new vehicle trips (50 inbound and 51 outbound).

As shown on Figure IV.D-6, vehicle trips generated by the SFMOMA Expansion were assigned to and from nearby parking facilities (the distribution of trips was based on SFMOMA surveys of visitors). Peak hour emergency vehicle trips generated by the Fire Station Relocation were assigned to the fire station frontage on Folsom Street, while vehicle trips generated by the residential component were assigned to and from the residential driveway on Falmouth Street (via Shipley Street), as shown on Figure IV.D-10. The resulting weekday PM peak hour Existing plus Project traffic volumes are shown on Figure IV.D-11 for intersections in the vicinity of the SFMOMA Expansion and on Figure IV.D-12 for intersections in the vicinity of the Fire Station Relocation and Housing Project. Figure IV.D-13 presents the Existing plus Project traffic volumes for the Saturday midday peak hour conditions at three intersections in the vicinity of the SFMOMA Expansion.

Table IV.D-19 presents the Existing plus Project intersection levels of service for the weekday PM and Saturday midday peak hours. In general, the addition of the 50 net-new weekday PM and 101 net-new Saturday midday vehicle trips would result in small increases in the average delay per vehicle at the study intersections. It should be noted that at some of the study intersections, the average delay per vehicle would remain the same with the addition of project-related traffic (e.g., Fifth/Folsom, Fifth/Harrison). Using the HCM methodology, the level of service is calculated based on an average of the total vehicular delay per approach, weighted by the number of vehicles at each approach. Increases in traffic volumes at an intersection usually result in increases in the overall intersection delay. However, if there are increases in the number of vehicles at movements with low delays, the average weighted delay per vehicle may remain the same or decrease.

During the weekday PM peak hour, the signalized intersections of Third/Market and New Montgomery/Howard Streets would continue to operate at LOS E. The increase in project-generated vehicle trips at these two intersections was reviewed to determine whether this increase would contribute considerably to critical movements operating at LOS E or LOS F at these intersections. Based on this examination, the contributions of the projects during the PM peak hour (11 vehicles at the intersection of Third/Market Streets and 12 vehicles at the intersection of New Montgomery/Howard Streets) were determined to be less than significant. Since the proposed projects would not contribute considerably to the poor operating conditions at these intersections, the resultant traffic impacts would be less than significant.

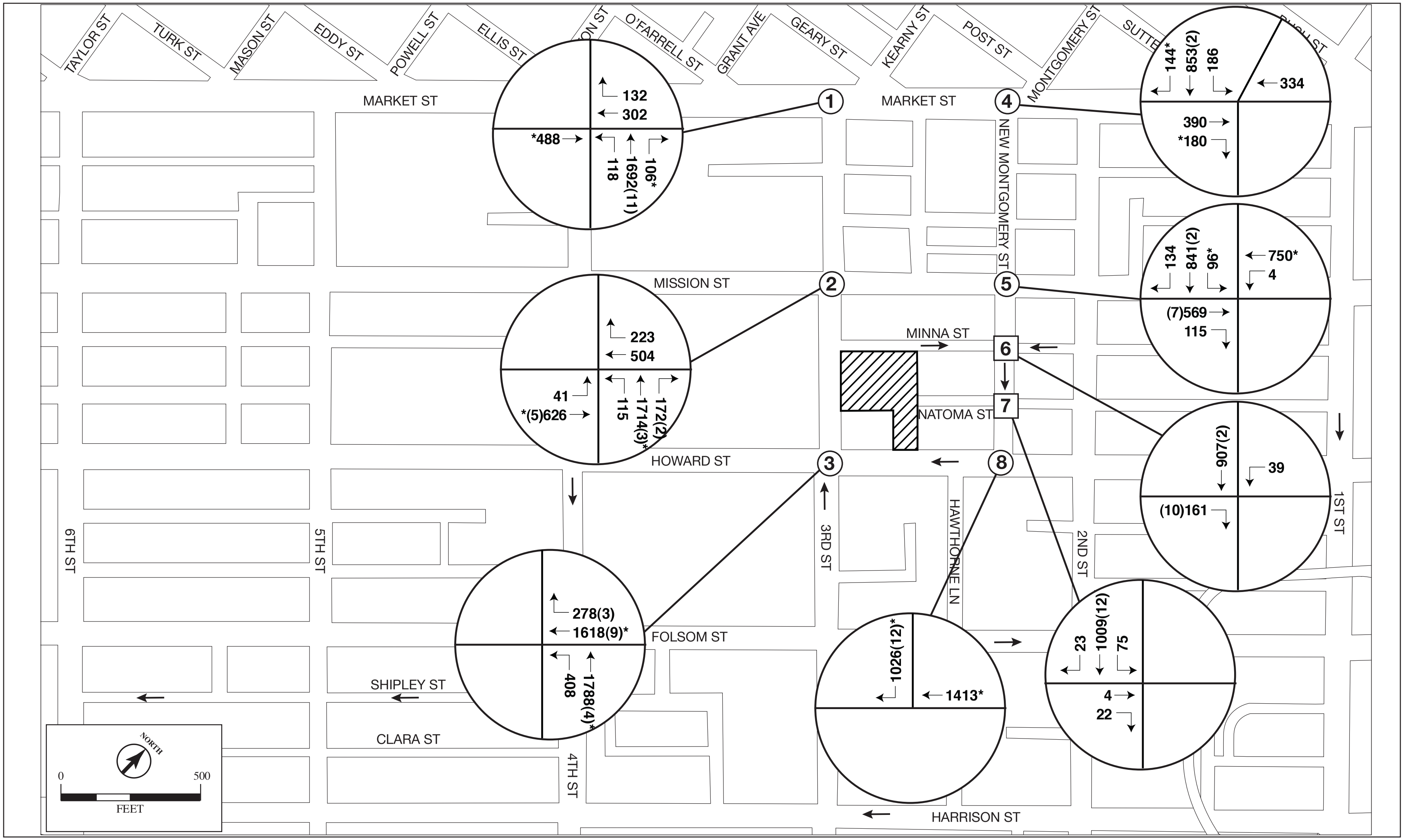


FIGURE IV.D-11

SFMOMA EXPANSION SITE

SIGNALIZED STUDY INTERSECTION

UNSIGNALIZED STUDY INTERSECTION

* CRITICAL MOVEMENT

(#) PROJECT VEHICLES

DIRECTION OF TRAVEL

SOURCES: LCW CONSULTING, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Existing Plus Project Traffic Volumes – Weekday PM Peak Hour
SFMOMA Expansion Vicinity

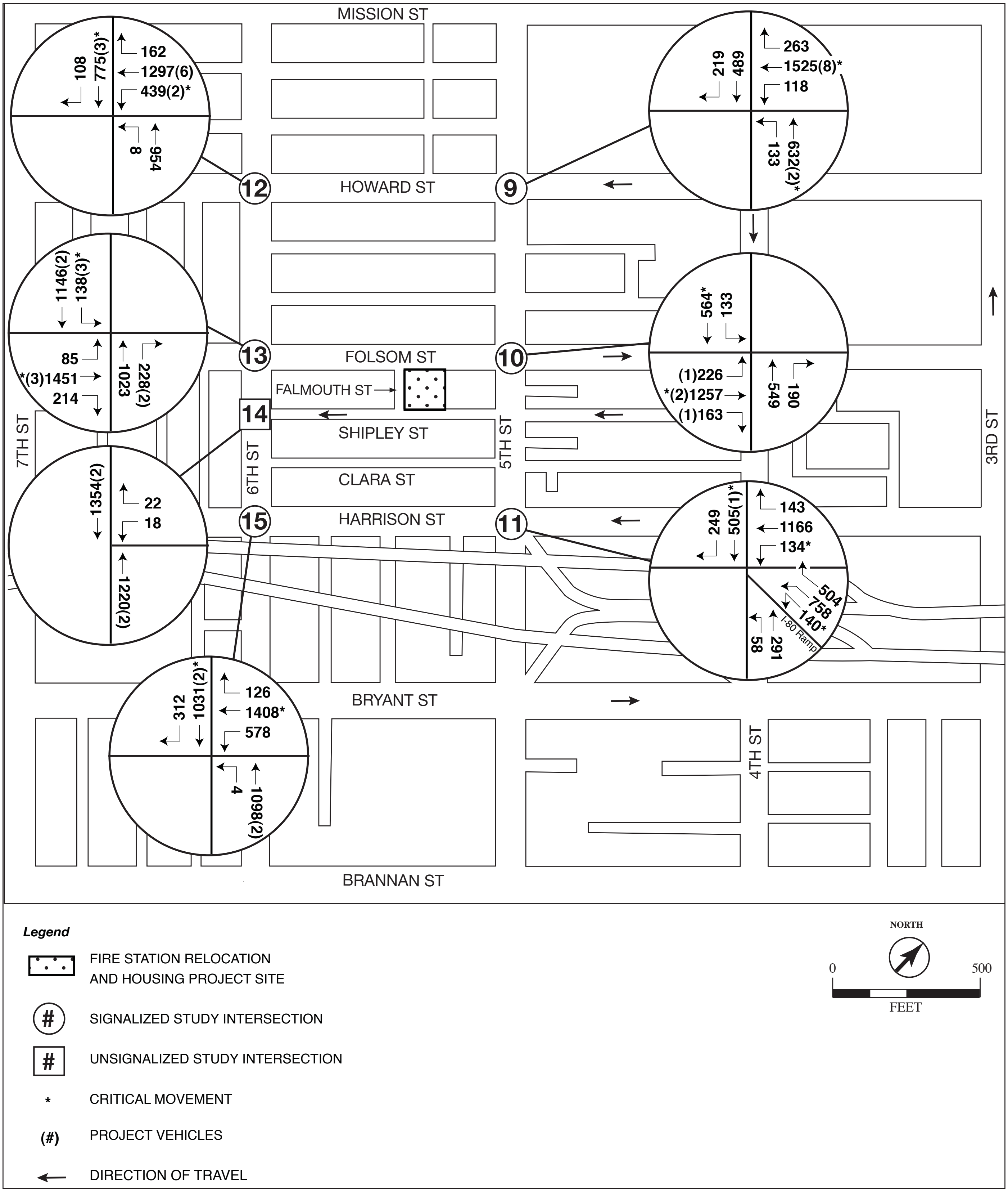


FIGURE IV.D-12

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Existing Plus Project Traffic Volumes - Weekday PM Peak Hour
Fire Station Relocation and Housing Project Vicinity

SOURCE: LCW CONSULTING, 2011.

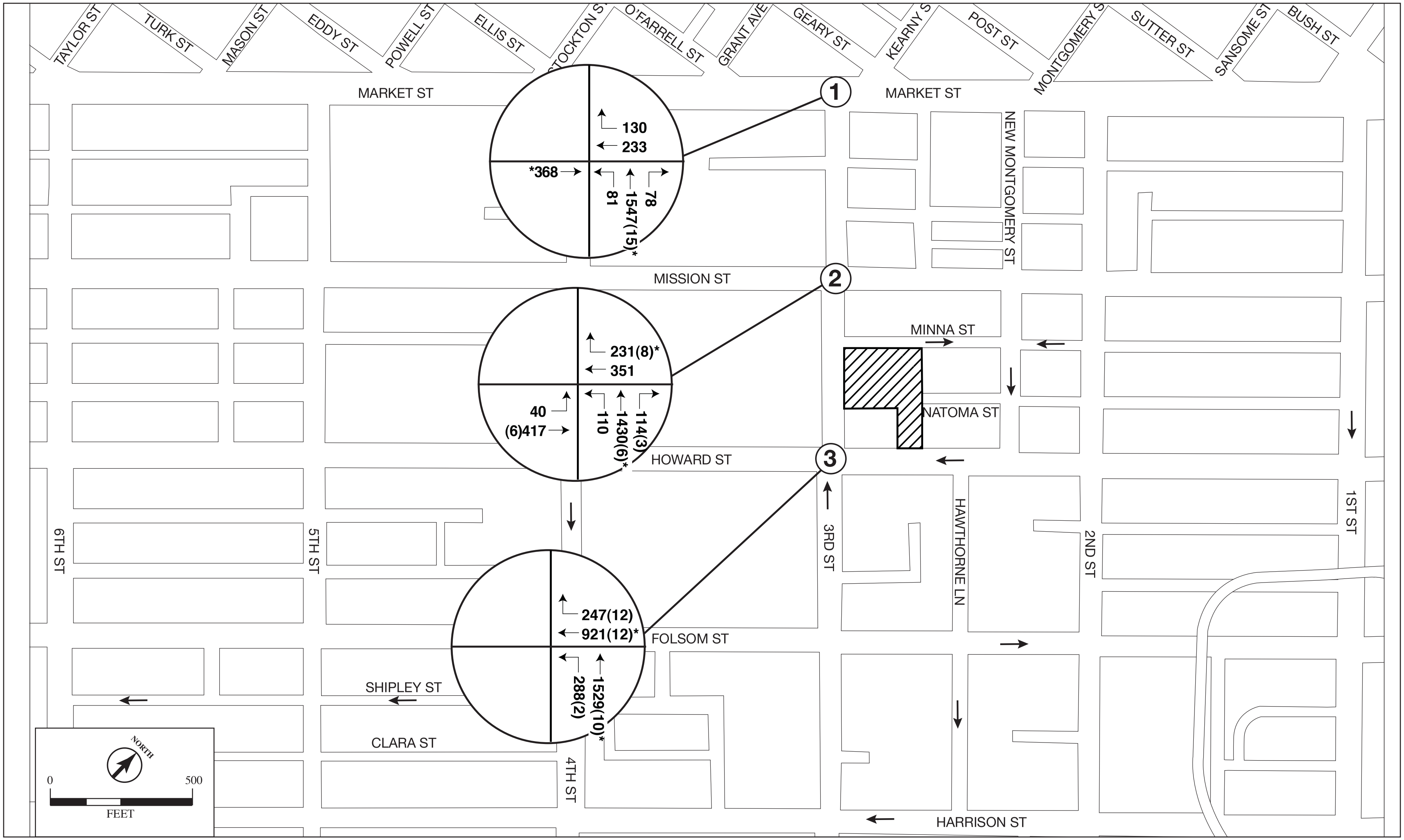


FIGURE IV.D-13

SFMOMA EXPANSION SITE

SIGNALIZED STUDY INTERSECTION

* CRITICAL MOVEMENT

(#) PROJECT VEHICLES

DIRECTION OF TRAVEL

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Existing Plus Project Traffic Volumes – Saturday Midday Peak Hour

SFMOMA Expansion Vicinity

SOURCES: LCW CONSULTING, 2011.

Table IV.D-19: Intersection Level of Service, Existing plus Project Conditions – Weekday PM and Saturday Midday Peak Hours

Intersection	Existing		Existing plus Project	
	Delay [1]	LOS	Delay	LOS
1. Third/Market Streets	**56.2**	**E**	**58.0**	**E**
2. Third/Mission Streets	20.1	C	20.2	C
3. Third/Howard Streets	36.1	D	36.6	D
4. New Montgomery/Market Streets	42.6	D	42.9	D
5. New Montgomery/Mission Streets	21.3	C	21.4	C
6. New Montgomery/Minna Streets [2]	**45.3 (wb)**	**E**	**54.8 (wb)**	**F**
7. New Montgomery/Natoma Streets [2]	30.4 (eb)	D	30.8 (eb)	D
8. New Montgomery/Howard Streets	**56.7**	**E**	**59.3**	**E**
9. Fifth/Howard Streets	24.9	C	25.2	C
10. Fifth/Folsom Streets	19.7	B	19.7	B
11. Fifth/Harrison Streets /I-80 off-ramp	50.0	D	50.1	D
12. Sixth/Howard Streets	23.6	C	23.9	C
13. Sixth/Folsom Streets	20.0	B	20.0	B
14. Sixth/Shipley Streets [2]	**37.3 (wb)**	**E**	**37.5 (wb)**	**E**
15. Sixth/Harrison Streets	25.7	C	25.7	C
Saturday Midday Peak Hour				
1. Third/Market Streets	26.7	C	27.9	C
2. Third/Mission Streets	16.0	B	16.3	B
3. Third/Howard Streets	16.1	B	16.2	B

Notes:

[1] Delay presented in seconds per vehicle. Intersections operating at LOS E or LOS F highlighted in **bold**.

[2] Unsignalized intersection. Peak hour signal warrants are not met.

Source: LCW Consulting, 2011.

During the weekday PM peak hour, one or more approaches to the unsignalized intersections of New Montgomery/Minna and Sixth/Shipley Streets would continue to operate at LOS E or LOS F conditions. At the unsignalized intersection of New Montgomery/Minna, with the addition of project-generated traffic, the westbound approach would deteriorate from LOS E to LOS F, while the eastbound approach would continue to operate at LOS E conditions. Peak hour traffic signal warrants are not met at this intersection under Existing conditions, and would continue not to be met under Existing plus Project conditions. Therefore, the projects would not result in a significant impact at this intersection. During the PM peak hour, the operating conditions at the unsignalized intersection of New Montgomery/Minna are governed primarily by the queue spillback from the approach to Howard Street, which extends upstream to Minna Street, thereby constraining access onto New Montgomery Street. Vehicles queued on New Montgomery Street generally allow vehicles on Minna

Street to merge into the traffic stream. During the PM peak hour, the proposed projects would increase the number of vehicles exiting Minna Street by 10 vehicles, which would increase the queue on Minna Street. The addition of the 10 vehicles would not result in a substantial contribution to the existing traffic volumes or congestion levels at this intersection.

At the unsignalized intersection of Sixth/Shipley Streets, the westbound approach of Shipley Street at Sixth Street is STOP-sign controlled, while northbound and southbound Sixth Street traffic is uncontrolled. The proposed projects would not contribute any vehicles to the westbound (worst) approach of Shipley Street to Sixth Street. The HCM methodology indicates that the westbound approach would continue to operate at LOS E with proposed project traffic with high average delays per vehicle. However, the traffic signals at the adjacent intersections of Sixth/Folsom and Sixth/Harrison Streets create gaps in the northbound and southbound traffic flows that allow the westbound movement to proceed, and therefore the intersection likely operates at better conditions than presented in Table IV.D-19 above. Furthermore, because the traffic volumes at this intersection under Existing or Existing plus Project conditions do not meet peak hour signal warrants, the projects would not be deemed to significantly affect this intersection.

Since SFMOMA travel demand during the Saturday midday is greater than during the weekday PM peak hour, the number of project-related vehicles during the Saturday midday would be greater than during the weekday PM peak hour (87 vehicles associated with the SFMOMA Expansion, and 14 vehicles with the Fire Station Relocation and Housing Project). However, Saturday midday traffic volumes and associated levels of congestion are lower than during the weekday PM peak hour, and the addition of the project-related vehicles would not substantially affect the intersection LOS conditions at the three study intersections on Third Street. As indicated in Table IV.D-19, above, the three study intersections along Third Street would continue to operate at LOS D or better during the Saturday midday peak hour.

Overall, project-related traffic would not represent a considerable contribution to intersections currently operating at LOS E or LOS F conditions, and would not cause any intersection operating at LOS D or better to operate at LOS E or LOS F. At the intersection of New Montgomery/Minna Streets, operating conditions for the worst approach would deteriorate from LOS E to LOS F, but signal warrants would not be met and therefore, an impact would not occur.

The relocation of the fire station would result in improved traffic operating conditions on Howard Street between Second and Third Streets. The use of two of the four travel lanes, combined with the geometric constraints related to the two off-set intersections of New Montgomery and Hawthorne Street, their proximity to Third Street, and the signal controlling these intersections combine to result in congested conditions during the AM peak period during testing of equipment. In addition, temporary interruption of traffic flow on Howard Street due to fire vehicle maneuvers related to the three-vehicle/two-door operations at the existing station would be eliminated. The design of the new station with three bay doors to accommodate three vehicles would eliminate the need to park in tandem, therefore improving operations at the fire station and adjacent roadway.

Impact TR-2: The proposed equipment testing adjacent to the Fire Station Relocation and Housing Project site would not cause the level of service of an intersection to substantially deteriorate. (Less Than Significant)

Similar to conditions at existing Fire Station No. 1 (676 Howard Street), at the proposed fire station at 935 Folsom Street, firefighters would test their equipment at the start of each shift – roughly between 8:30 and 9:30 a.m. Testing of fire vehicle equipment (e.g., extending and moving the ladder up and down) generally requires the parking of fire trucks within the travel lanes. At the existing station on Howard Street, two travel lanes (the northern lane adjacent to the fire station, and the southern lane across the street) are temporarily blocked off on a daily basis. Testing of equipment is conducted at the start of each shift, so that the fire fighters ensure that the equipment would work properly in the event of an emergency.

As part of the Fire Station Relocation and Housing Project, a fire station apparatus testing plan was developed with the SFFD to minimize the impact of equipment testing on traffic operations and bicyclists on Folsom Street. The plan would require that testing be conducted within the curb lanes and not within vehicle or bicycle travel lanes. “No Parking” red curb zones adjacent to the fire station site on Folsom Street would accommodate ladder truck and rescue vehicle testing at the curb. In order to minimize encroachment into the adjacent bicycle lane, the testing zone for the ladder truck would extend into the driveway/sidewalk area (for the vehicle outrigger), while leaving a 5-foot-wide clear path for pedestrians on the sidewalk. On the north side of Folsom Street, directly across from the new fire station, a red zone about 55 feet in length would be provided to accommodate testing of the pump engine within the curb lane. On Falmouth Street, an alternate testing zone would be provided for pumper engine and rescue vehicles. Therefore, the daily apparatus testing plan's impacts on bicycle and traffic operations would be less than significant.

The apparatus testing plan was developed so that fire vehicles would not block the travel lanes or bicycle lane on Folsom Street. However, in the event that fire vehicles could block the travel lanes on both the north and south sides of the street (similar to conditions at the existing fire station on Howard Street), a sensitivity analysis was conducted to assess traffic circulation with only two lanes remaining available on Folsom Street during the AM peak hour. Traffic volumes on Folsom Street during this period are about 200 vehicles per hour greater than during the PM peak hour (about 1,850 vehicles per hour during the AM peak hour), and the blocking of two travel lanes would result in increased congestion between Falmouth Street and Sixth Street. Since the constraint would be midblock, rather than at the immediate approach to Fifth Street, drivers traveling on Folsom Street eastbound would have about 450 feet between Sixth Street and Falmouth Street to merge into the two travel lanes, and about 280 feet between the proposed fire station and Fifth Street to disperse into the four lanes. At the midblock constraint location, the two available travel lanes would have a combined capacity of about 2,800 vehicles per hour (capacity is estimated based on the PM peak hour analysis, indicating an average per-lane capacity on eastbound Folsom Street of about 1,400 vehicles per hour). Therefore, based on an AM peak hour volume demand of 1,850 vehicles per hour, and a capacity of 2,800 vehicles per hour, the two travel lanes would be able to accommodate the traffic volumes. Slower travel speeds and some congestion would be associated with vehicles merging from four lanes to two lanes; however intersection operations at Fifth Street and at Sixth Street would not be affected.

Impact TR-3: The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project would not cause a substantial increase in transit demand that could not be accommodated by adjacent transit capacity, a substantial increase in operating costs or delays or the capacity utilization standard to be exceeded during the peak hour. (Less Than Significant)

During the weekday PM peak hour, the proposed projects would generate 66 net-new transit trips (15 inbound and 56 outbound). These net-new transit trips would utilize the nearby Muni lines and regional transit lines, and may include transfers to other Muni bus and light rail lines, or other regional transit providers. Based on the location of the project sites and the anticipated origin/destination of the new residents and employees and visitors to the museum uses, the transit trips were assigned to Muni and the various regional transit operators. Based on the trip distribution patterns, it was estimated that out of the 56 outbound transit trips, about 32 would cross the Muni screenlines, 14 would cross the regional screenlines, and the remaining 10 would not cross any screenlines.

Muni Screenlines. The analysis of Muni screenlines assesses the effect of project-generated transit-trips on transit conditions in the outbound direction during the weekday PM peak hour. Based on the origins/destinations of the transit trips generated by the projects, the outbound transit trips within San Francisco were assigned to the four screenlines and the sub-corridors within each screenline. It should be noted that some transit trips that would travel within Superdistrict 1 would remain in the downtown area (e.g., trips to Union Square) and therefore, would not cross one of the screenlines. As such, not all outbound Muni trips generated by the project appear in the screenline analysis. For analysis purposes, half of the Superdistrict 1 trips were estimated to remain in the downtown area and the out-of-region trips were added to the Superdistrict 1 trips, assuming that a portion of those trips would be made on Muni.

Table IV.D-20 presents the Muni screenline analysis for the Existing plus Project conditions. Overall, the addition of the project-generated riders to the four screenlines would not substantially increase the peak hour capacity utilization. Capacity utilization for all screenlines would remain similar to those under Existing conditions. Capacity utilization of the screenlines would be below 85 percent capacity utilization, with the exception of the subway lines within the Southwest screenline, which would continue to operate at capacity utilization of 87 percent.

Table IV.D-20: Muni Screenline Analysis, Existing plus Project Conditions – Weekday PM Peak Hour

Screenline	Existing Ridership	Project Trips	Existing plus Project Ridership	Capacity	Capacity Utilization
Northeast					
Kearny/Stockton Corridor	1,129	5	1,134	2,010	56%
All Other Lines	757	3	760	1,589	48%
subtotal	*1,886*	*9*	*1,895*	*3,599*	*53%*
Northwest					
Geary Corridor	1,684	2	1,686	2,230	76%
All Other Lines	4,937	7	4,944	7,893	63%
subtotal	*6,621*	*9*	*6,630*	*10,123*	*65%*
Southeast					
Third Street Corridor	554	1	555	714	78%
Mission Street Corridor	1,254	2	1,256	2,350	53%
All Other Lines	2,860	6	2,866	3,964	72%
subtotal	*4,668*	*9*	*4,677*	*7,028*	*67%*
Southwest					
Subway Lines	5,883	4	5,887	6,783	**87%**
All Other Lines	1,551	1	1,552	2,840	55%
subtotal	*7,434*	*5*	*7,439*	*9,623*	*77%*
Total All Screenlines	**20,609**	**32**	**20,641**	**30,373**	**68%**

Source: AECOM, LCW Consulting, 2011.

Regional Transit Screenlines. Similar to Muni, the analysis of regional transit screenlines assesses the effect of project-generated transit-trips on transit conditions in the outbound direction during the weekday PM peak hour. Based on the origins/destinations of the transit trips generated by the projects, the outbound regional transit trips were assigned to the three regional transit screenlines. It was estimated that during the weekday PM peak hour there would be nine transit trips destined to the East Bay, two transit trips to the North Bay, and three transit trips to the South Bay.

Table IV.D-21 presents the Existing plus Project screenline analysis for the regional transit carriers. In general, the addition of project-related passengers would not have a substantial effect on the regional transit providers during the weekday PM peak hour, as the capacity utilization for all screenlines would remain similar to those under Existing conditions. In addition, the capacity utilization for all regional transit providers would be under capacity utilization standards.

Table IV.D-21: Regional Transit Screenline Analysis, Existing plus Project Conditions – Weekday PM Peak Hour

Screenline	Existing Ridership	Project Trips	Existing plus Project Ridership	Capacity	Capacity Utilization
East Bay					
BART	16,985	8	16,993	14,140	120%
AC Transit	2,517	1	2,518	4,193	60%
Ferries	702	0	702	1,519	46%
subtotal	*20,204*	*9*	*20,213*	*19,852*	*102%*
North Bay					
GGT buses	1,397	1	1,398	2,205	63%
GGT ferries	906	1	907	1,700	53%
subtotal	*2,303*	*2*	*2,305*	*3,905*	*59%*
South Bay					
BART	9,545	2	9,547	10,360	92%
Caltrain	1,986	1	1,987	3,250	61%
SamTrans	575	0	575	940	61%
subtotal	*12,106*	*3*	*12,109*	*14,550*	*83%*
Total All Screenlines	**34,613**	**14**	**34,623**	**38,307**	**90%**

Source: AECOM, LCW Consulting, 2011.

Muni Operations. Currently Muni electric trolley coaches operate on Third Street (Muni lines 8X-Bayshore Express, 30-Stockton, and 45-Union-Stockton). On Third Street, the closest bus stops are located at the approach to Howard Street, and between Mission and Market Streets. Support poles for the overhead wires are located on Third Street, adjacent to the project site. The 76-Marin Headlands line runs on Howard Street on Sundays only, but does not stop in the vicinity of the SFMOMA Expansion site (the closest stops to the site are at the intersection of Third/Harrison/Perry Streets to the south and the intersection of Sutter/Kearny to the north). Muni also utilizes Howard and Third Streets to turn around electric and diesel buses, which is made possible by overhead wires on Howard Street adjacent to the project site. The SFMOMA Expansion would not affect the operation of Muni buses or bus stops on either Third Street or Howard Street.

Muni line 12-Folsom runs along Folsom Street adjacent to the proposed Fire Station Relocation and Housing Project site and access driveways. The nearest bus stops are on Folsom Street at the intersections of Fifth and Sixth Streets (far-side stops at both cross-streets). It is not anticipated that the fire station operations would substantially affect Muni operations. Folsom Street has four eastbound travel lanes, and the 12-Folsom motorcoach would be able to change lanes if fire station activities extend into the travel lane adjacent to the site. SFFD personnel would not park fire and rescue vehicles within the adjacent travel lane during testing of equipment between 8:30 and 10:00 a.m., and therefore, bus operations on Folsom Street would not be affected.

Since the proposed projects would not substantially affect the capacity utilization of the local and regional transit lines, and would not substantially affect the operations of the adjacent and nearby Muni bus stops, transit impacts would be less than significant.

Impact TR-4: The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project would not result in substantial overcrowding on public sidewalks or otherwise interfere with pedestrian accessibility to the sites and adjoining facilities. (Less Than Significant)

Pedestrian trips generated by the proposed projects would include walk trips to and from the project sites, plus walk trips to and from the local and regional transit operators, and some walk trips to and from nearby parking facilities.

SFMOMA Expansion. With the proposed SFMOMA Expansion, visitors to SFMOMA would continue to enter and exit the museum via the existing entrance on Third Street and a new entrance accessed via a promenade connecting Natoma and Howard Streets. During museum hours, pedestrians would be able to walk between Third Street and the Howard Street entry via the second floor of the museum.[7]

[7] SFMOMA is currently open to the public on weekdays and weekends, except on Wednesdays. Museum hours are 11:00 a.m. to 5:45 p.m. on Fridays through Tuesdays, and 11:00 a.m. to 8:45 p.m. on Thursdays. Museum store hours are 10:00 a.m. to 6:30 p.m. on Fridays through Tuesdays, and 10:00 a.m. to 9:30 p.m. on Thursdays. Caffé Museo hours are 10:00 a.m. to 6:00 p.m. on Fridays through Tuesdays, and 10:00 a.m. to 9:00 p.m. on Thursdays. Rooftop Coffee Bar hours are 11:00 a.m. to 5:00 p.m. on Fridays through Tuesdays, and 11:00 a.m. to 8:00 p.m. on Thursdays. Between Memorial Day and Labor Day the museum opens at 10:00 a.m. The museum is closed on New Years Day, Thanksgiving, and Christmas. The museum visitor days and hours would be expected to remain the same under the proposed SFMOMA Expansion.

As shown on Figures II-16 and II-17 in Chapter II, Project Description, all visitor admissions and ticketing functions would occur on the second floor of the museum, and that queuing would be accommodated within the building and would not occur on Third Street. Internalizing the queuing that occurs at times during popular exhibits would ensure that the sidewalk adjacent to the site is available for pedestrian travel, and pedestrian conflicts during these times would be reduced. The staff and group visitor entrance would continue to be on Minna Street, although it would be modified as part of the project. It is anticipated that a majority of the new pedestrian trips generated by the SFMOMA Expansion would be to and from Market Street, and to Union Square via Third Street and Mission Street. Figure IV.D-14 presents the pedestrian trips that would be generated by the project on the sidewalk, crosswalk, and corner analysis locations for the midday and PM peak hours.

Table IV.D-22 presents the results of the pedestrian analyses for Existing plus Project conditions. During the midday and PM peak hours, the addition of the new pedestrian trips on the adjacent sidewalks, at the crosswalks, and southeast corner of the intersection of Third/Mission Streets would not substantially affect the operating conditions, and all analysis locations would operate at LOS D or better. During the midday peak hour, the LOS operating condition at the east crosswalk would change from LOS C to LOS D. The increase in pedestrian and vehicle activities is not expected to result in perceptible effects on pedestrian-auto conflicts. In addition, adjacent to the project site on Howard Street, the relocation of the fire station would eliminate the driveway and the fire vehicle maneuvers into and out of the station, which would improve overall pedestrian conditions on Howard Street.

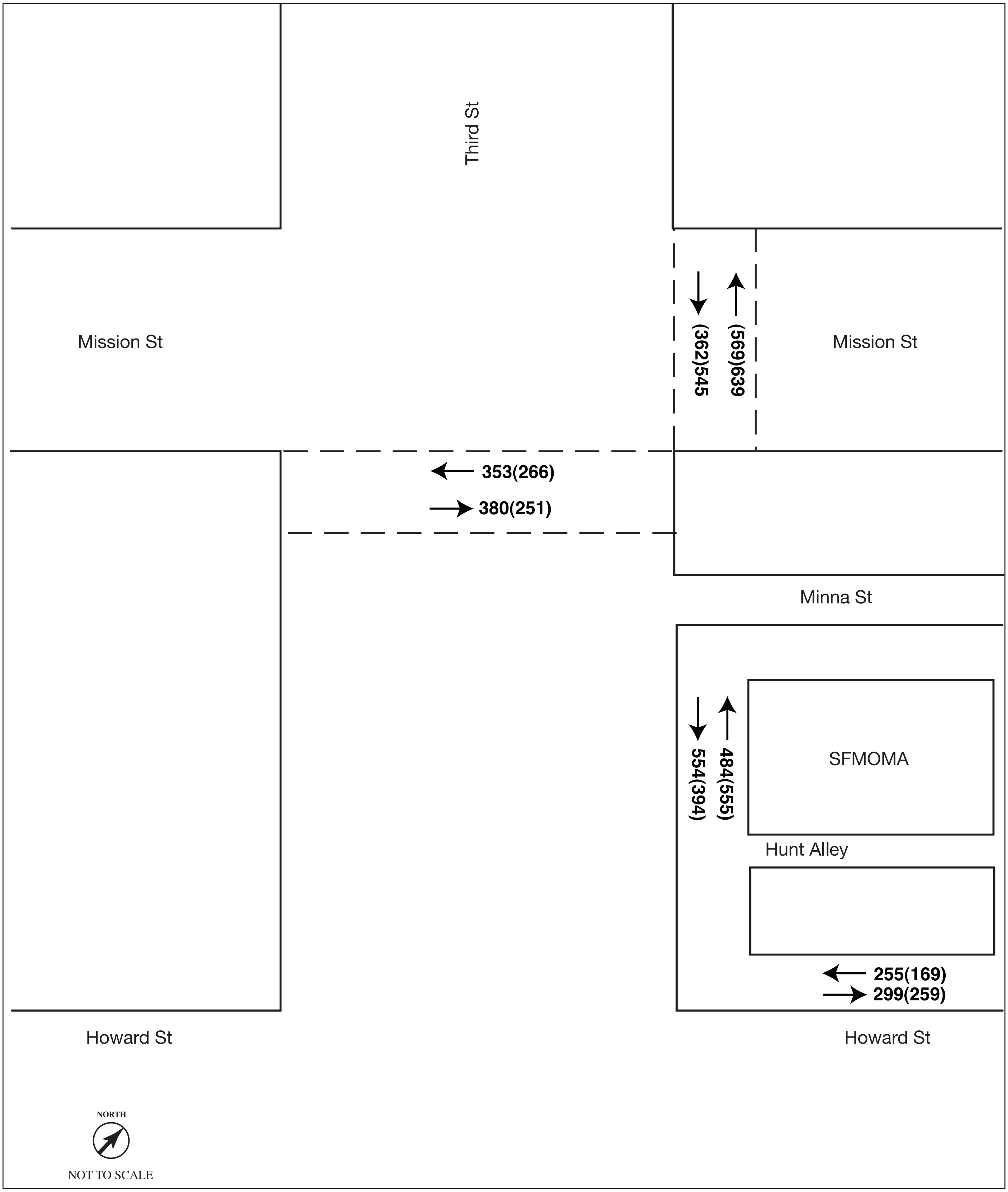


FIGURE IV.D-14

#(#) - Midday (PM)

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Existing Plus Project Pedestrian Volumes - Weekday Midday and PM Peak Hours

SOURCE: LCW CONSULTING, 2011.

Table IV.D-22: Pedestrian Level of Services, Existing plus Project Conditions – Weekday Midday and PM Peak Hours

Peak Hour/ Location	Existing		Existing plus Project	
Sidewalk	**p/m/f [1]**	**LOS**	**p/m/f**	**LOS**
Midday Peak Hour				
Third Street	4.0	C	4.8	C
Howard Street	1.2	B	1.9	B
PM Peak Hour				
Third Street	4.0	C	4.4	C
Howard Street	1.1	B	1.5	B
Crosswalks – Third/Mission Streets	**sf/ped [2]**	**LOS**	**sf/ped**	**LOS**
Midday Peak Hour				
South	52.7	B	48.5	B
East	24.8	C	23.1	D
PM Peak Hour				
South	62.4	A	59.1	B
East	39.5	C	37.9	C
Corner – Southeast Third/Mission Streets	**sf/ped**	**LOS**	**sf/ped**	**LOS**
Midday Peak Hour	29.1	C	26.5	C
PM Peak Hour	38.5	C	36.1	C

Notes:

[1] p/m/f = pedestrians per minute per foot

[2] sf/ped = square feet per pedestrian

Source: LCW Consulting, 2011.

As indicated in Chapter II, Project Description, Hunt Street between the existing SFMOMA site and 676 and 670 Howard Street, would be vacated as part of the proposed project. The portion of Hunt Street extending west to Third Street was previously vacated by the City and conveyed to the developer of the W Hotel, such that the right-of-way does not connect to any other public street. Therefore, with the SFMOMA Expansion, pedestrians would no longer be able to walk on Hunt Alley between Third Street and Natoma Street; however, access to and from the W Hotel staff entrance and the porte cochere would be maintained, and a promenade would connect Natoma and Howard Streets. The number of pedestrians on Hunt Alley traveling between Third Street and Howard Street were observed to be about 200 pedestrians on a daily basis and would not be substantially affected by the loss of the connection via the private alley. Pedestrians destined to or from the SFMOMA garage would walk to Minna Street, about 215 feet to the north, or, as noted above, during museum hours could walk through the museum between Third Street and Natoma Street without needing to enter the paid galleries.

Although the proposed project would result in an increase in the number of vehicles and pedestrians in the vicinity of the project site, this increase would not be substantial enough to affect pedestrian travel in the area, and therefore, impacts to pedestrians would be less than significant.

Although pedestrian impacts would be less than significant, an improvement measure that includes design and construction of a sidewalk extension on Third Street in front of the existing Third Street entrance into the museum has been recommended as Improvement Measure TR-1 (discussed at the end of this section). The sidewalk extension would be about 7 feet in width (the parking lane is about 7 feet wide) and about 85 feet in length, and would be centered on the museum entrance (which is aligned with the midblock crosswalk on Third Street). As part of this improvement, a consolidated 39-foot wide passenger zone and 20-foot-wide red zone would be provided between the sidewalk extension and Minna Street. A 59-foot-wide passenger zone would be provided south of the sidewalk extension. The 85-foot-long sidewalk extension, red zone, and two passenger zones would eliminate six of the seven on-street metered parking spaces on Third Street that are adjacent to the project site (i.e., three spaces north of the existing midblock crosswalk and three spaces south of the midblock crosswalk).

Fire Station Relocation and Housing Project. The new fire station and residential project would add very few pedestrian trips to the sidewalks in the vicinity of the project site. During the weekday PM peak hour there would be six trips destined to and from the transit lines and nine walk/other trips. These trips would be accommodated within the existing sidewalk network. The adjacent signals at the intersections of Folsom/Fifth and Folsom/Sixth Streets currently have pedestrian signals, and with the upgraded signals to accommodate fire and rescue vehicles exiting the station, would continue to accommodate pedestrians crossing Folsom Street at Sixth and Fifth Streets. The fire station would require a new curb cut on Folsom Street, and when fire and rescue vehicles are entering and exiting the station, pedestrians would need to yield to fire and rescue vehicles. Pedestrian volumes adjacent to the project site on Folsom Street are low to moderate, and very low on Falmouth Street, and pedestrian conditions would not be substantially affected by the new curb cuts or fire vehicle trips generated by the Fire Station Relocation and Housing Project.

Overall, the proposed project would result in less-than-significant impacts to pedestrians.

Impact TR-5: The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project 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 Supply and Planning Code Requirements

SFMOMA Expansion. The existing museum includes 30 bicycle parking spaces for employees within the subsurface garage that is accessed from Minna Street. Six bicycle racks (12 parking spaces) are also provided on the Minna pad. The garage area would be converted to art storage or other back-of-house functions, and the Minna pad would be developed. Therefore, the existing bicycle parking spaces would be eliminated.

While no bicycle parking spaces for arts uses are required by the *Planning Code*, the project sponsor has indicated that approximately 50 spaces would be provided, including 10 spaces on the reconfigured Minna pad (public), 20 spaces near the entrance accessed via the promenade connecting Howard and Natoma Streets (public), and 20 spaces adjacent to the loading easement area (employee spaces within a secured room). Figure II-9 in Chapter II, Project Description, shows the location of the proposed bicycle parking spaces.

The existing museum also includes two showers for use by employees, although lockers are not provided as part of the shower facilities (separate lockers are provided for security staff), and these facilities would remain as part of the SFMOMA Expansion. Showers and lockers are also not required by the Planning Code for arts uses.

Fire Station Relocation. The fire station is not subject to Planning Code bicycle parking requirements, and therefore would not be required to provide bicycle parking spaces. No bicycle parking spaces are currently proposed. The fire station would include showers and lockers.

Housing Project. The Housing Project would be required to provide six Class 1 bicycle parking spaces (one space for every two dwelling units), and the project would provide at least the minimum required to meet the Planning Code requirements.[8] Since the project would be a residential building, no showers or lockers are required.

Bicycle Access and Safety

Both project sites are within bicycling distance of office and retail buildings in downtown San Francisco and the Financial District, and major transit hubs (Ferry Building, Transbay Terminal, and Caltrain). As such, it is anticipated that a portion of the 65 weekday and 165 Saturday net-new peak hour walk/other trips generated by the proposed projects would be bicycle trips.

In the vicinity of the project sites there are several bicycle routes, with the closest routes on Howard and Folsom Streets (Bicycle Route 30), on Second Street (Bicycle Route 11), and on Market Street (Bicycle Route 50). Bicycle lanes are currently provided on the north side of Howard Street, and the south side of Folsom Street. Since the existing fire station would be relocated from 676 Howard Street, the removal of the curb cuts and fire vehicle trips would eliminate the existing potential for conflicts between bicyclists and fire trucks on Howard Street. However, new curb cuts and potential for conflicts with bicyclists would be created at the new fire station location at 935 Folsom Street.

Each SFFD station in San Francisco needs to test its equipment every morning at the start of each shift, from about 8:45 a.m. to 9:30 a.m. At the new fire station, this would require the parking of emergency vehicles along Folsom Street, adjacent to the bicycle lane. Fire trucks are wider than typical vehicles, and a parked fire truck could block the bicycle lane, which could force bicycles to merge into the adjacent vehicular travel lane. Furthermore, testing of equipment on fire vehicles would require SFFD personnel to walk and travel within the bicycle lane in order to access

[8] Class 1 bicycle parking includes facilities that protect the entire bicycle, its components, and accessories against theft and inclement weather, including wind-driven rain. Examples of Class 1 spaces include lockers, check-in facilities, monitored parking, restricted access parking, and personal storage. Class 2 bicycle parking spaces include bicycle racks which permit the locking of the bicycle frame and one wheel to the rack and which support the bicycle in a stable position without damage to wheels, frame, or components.

equipment on the left side of a vehicle. This could lead to conflicts between bicyclists and SFFD personnel on foot.

In consultation with the SFFD and the San Francisco Bicycle Coalition, procedures have been identified to minimize conflicts with bicyclists, particularly since during the AM peak period the adjacent bicycle lane serves commuters destined to downtown locations, and bicycle volumes on Folsom Street are generally greatest during the AM peak period.[9] During testing of equipment, SFFD would place cones along the bicycle lane to warn bicyclists of the presence of fire vehicles and SFFD personnel.

Also, SFFD would ensure that emergency vehicles parked on the south side of Folsom Street would not encroach on the bicycle lane. If vehicles cannot fit within the parking lane, rather than encroach on the bicycle lane, the vehicles would instead straddle the parking lane and the sidewalk. While this situation is not ideal for pedestrian circulation, it would not interfere with pedestrian accessibility or create a hazardous condition for pedestrians, because minimum sidewalk clearance of 5 feet would be provided at all times.

The protocols discussed above would be anticipated to prevent significant conflicts between bicycles and SFFD vehicles and personnel. However, in the event that these protocols are inadequate, an improvement measure has been identified which would entail SFFD testing of equipment on Falmouth Street, where conflicts with bicyclists would not occur, rather than the south side of Folsom Street (see Improvement Measure TR-2, discussed at the end of this section).

During emergencies, bicyclists are required to comply with all applicable traffic regulations related to emergency vehicles, and would be required to stop when a fire vehicle is exiting the station. Therefore, it is not anticipated that there would be substantial conflicts between fire and rescue vehicles exiting the station and bicyclists. It should be noted that in addition to the existing Fire Station No. 1 at

[9] SFMOMA representatives met with Andy Thornley, Program Director of the San Francisco Bicycle Coalition and Deputy Chief Thomas Doudiet of the San Francisco Fire Department on March 16, 2011 to review apparatus testing, placement of trucks, placement of warning cones at ladder truck/bicycle lane.

676 Howard Street, bicycle lanes exist adjacent to other fire stations in San Francisco (e.g., Fire Station No. 5 at 1301 Turk Street, at Webster Street).

Although the proposed projects would increase the number of vehicles in the vicinity of the project sites, this increase would not be substantial enough to affect bicycle travel in the area, and therefore, impacts to bicyclists would be less than significant. Therefore, impacts to bicyclists would be less than significant. Although less than significant, testing of fire equipment on Folsom Street adjacent to the bicycle lane could create a bicycle hazard, as described above, but protocols have been identified to avoid the hazard. In addition, Improvement Measure TR-2 has been identified to consider an alternate equipment testing area on Falmouth Street that would remove the conflict with bicycles.

Impact TR-6: The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project would not result in a loading demand during the peak hour of loading activities that could not be accommodated or that would create potentially hazardous traffic conditions or significant delays. (Less Than Significant)

Loading Supply and Planning Code Requirements

SFMOMA Expansion. The existing museum currently includes one on-site drive-through loading space that could be accessed from both Minna and Natoma Streets. The on-site loading area is 23.5 feet in width, 85 feet in length, and has a vertical clearance of 14.5 feet. In addition, loading activities occur at the two undeveloped areas at the northeast and southeast corners of the museum: the 5,800 square-foot Minna Street surface parking pad and the 8,500 square-foot Natoma Street surface parking pad.

As indicated in Figure II-17 in Chapter II, Project Description, as part of the new building design, the Minna pad would be reconfigured and the existing loading activities that currently occur at this location would be eliminated. Vehicular access to the on-site loading space would be maintained. The Natoma pad would be reconfigured as part of the new building design, and the existing long-term parking by Fire Station personnel that currently occurs on Hunt Street would be eliminated. As indicated in Figure II-17, a total of three loading spaces would be provided – two for non-art loading, and one for food loading – with adequate accommodation for trucks to turn around to exit the loading area. In addition to the loading spaces, a trash and recycling storage area would be provided. The reconfiguration would also maintain an access route for the W Hotel valet service from the W Hotel porte-cochere, and would provide a clear zone for W Hotel delivery vehicles to access the hotel's existing loading dock.[10] A minimum vertical clearance of 14.5 feet would be provided within the reconfigured loading area.

Per Planning Code Section 152.1, the SFMOMA Expansion (with a total of 460,000 square feet of arts space) would be required to provide two off-street freight loading and service vehicle spaces. Since the museum currently includes one off-street loading space (and this space would be retained), and three additional spaces would be provided, the SFMOMA Expansion would meet applicable Planning Code requirements. Appendix H of the Transportation Impact Analysis contains the Planning Code compliance comparisons.

Passenger loading/unloading would continue to occur as under existing conditions, with two passenger loading/unloading parking spaces on Third Street to the north and south of the existing crosswalk. In addition, SFMOMA would also seek designation of a 50-foot-wide passenger zone on Howard Street at the new pedestrian entrance to the museum. The zone would replace the existing fire station driveway and red curb.

Fire Station Relocation and Housing Project. The Fire Station Relocation and Housing Project would not be required to provide off-street freight loading and service vehicle spaces.

Loading Demand

SFMOMA Expansion. As indicated in Table IV.D-12, the museum currently generates between 11 and 17 deliveries/service vehicle trips per day on weekdays, with up to 27 trips depending on when

[10] Existing passenger car parking within the Hunt Street easement area constrains full use of the on-site loading facility, and as a result, loading for the W Hotel occurs within the Natoma parking pad, and deliveries are carted to the hotel. Deliveries for the W Hotel also occur at the curb on Third Street in the early morning hours, and are carted to the service entrance on Hunt Alley.

weekly or less frequent deliveries occur, and if there is an upcoming exhibit. The restaurant expansion would generate an additional 10 deliveries/service vehicle trips per day. The maximum of 37 deliveries/service vehicle trips per day would result in a demand for two loading spaces during the peak hour of loading activities. The SFMOMA Expansion would include development on and over the Minna pad. However, access to the existing off-street loading area would be maintained from both Minna and Natoma Streets. The reconfigured loading areas, while smaller, would be able to accommodate the loading demand.

The proposed project would allow for the continued use of the W Hotel delivery and service vehicle loading space at the northern end of the porte-cochere. Vehicles from the W Hotel's porte cochere would be able to continue through to Natoma Street to exit.

With the additional visitors to the museum, the demand for passenger loading/unloading space would incrementally increase. As noted above, an additional passenger loading/unloading zone is proposed on Howard Street as part of the project. As under existing conditions, if the two passenger loading/unloading spaces on Third Street are occupied, visitors arriving via private auto would likely drive to the parking facility, while taxis would likely double-park temporarily or drop off passengers at any available curb space.

Fire Station Relocation. As indicated in Table IV.D-14, the fire station generates about 20 administrative trips per day, which include deliveries of supplies. Fire station deliveries would be accommodated on-street on Folsom Street, or within the driveway of the fire station.

Housing Project. The 13 residential units would generate about one delivery/service vehicle trip per day, which would be accommodated on-street on Shipley Street. On-street parking on Shipley Street is only permitted on the north side of the street, and is generally well-utilized during the day. Similar to deliveries to other residential buildings on Shipley Street, delivery vehicles would use available curb space or double-park to complete their deliveries. Since the Shipley Street roadway right-of-way is 23 feet wide, sufficient width is generally available for a vehicle to bypass a double-parked vehicle, although in some instances delivery vehicles may temporarily block through traffic on Shipley Street. Pedestrian and bicycle traffic would not be affected by double-parked vehicles on Shipley Street.

Residential move-in and move-out activities, and large furniture deliveries, are anticipated to occur from Shipley Street. Curb parking on Shipley Street for moving trucks and vans would need to be reserved through the local Police Department. The proposed residential building would contain a trash and recycling storage area in the basement. Trash and recycling materials would be carted to the curb via the car elevator by building maintenance staff.

Since the SFMOMA Expansion would include off-street loading, and since the loading demand associated with the SFMOMA Expansion and Fire Station Relocation and Housing Project could be accommodated within the proposed off-street supply or on-street, loading impacts would be less than significant.

Impact TR-7: The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project would not result in inadequate emergency access. (Less Than Significant)

SFMOMA Expansion. Emergency access to the SFMOMA Expansion site would generally remain unchanged from existing conditions. Emergency service providers would continue to be able to pull up to the project site from Third Street, Minna Street, or Howard Street. On Natoma Street, similar to existing conditions, fire and rescue vehicles would back into Natoma Street, and therefore expansion of the museum over the Natoma pad would not affect emergency vehicle access. The expansion of the museum structure over the Natoma pad would incorporate adequate room for emergency vehicles accessing Natoma Street westbound to turn around to exit. A 14.5-foot vertical clearance would be maintained within the turnaround area.

The SFMOMA Expansion would not change any adjacent travel lanes, and emergency access along the adjacent streets would remain unchanged. Detailed plans for wet standpipes used by fire trucks and fire exits for the expansion have not been designed; however, the building would be designed to meet the 2010 San Francisco Building Code, and the 2010 California Building Code with San Francisco

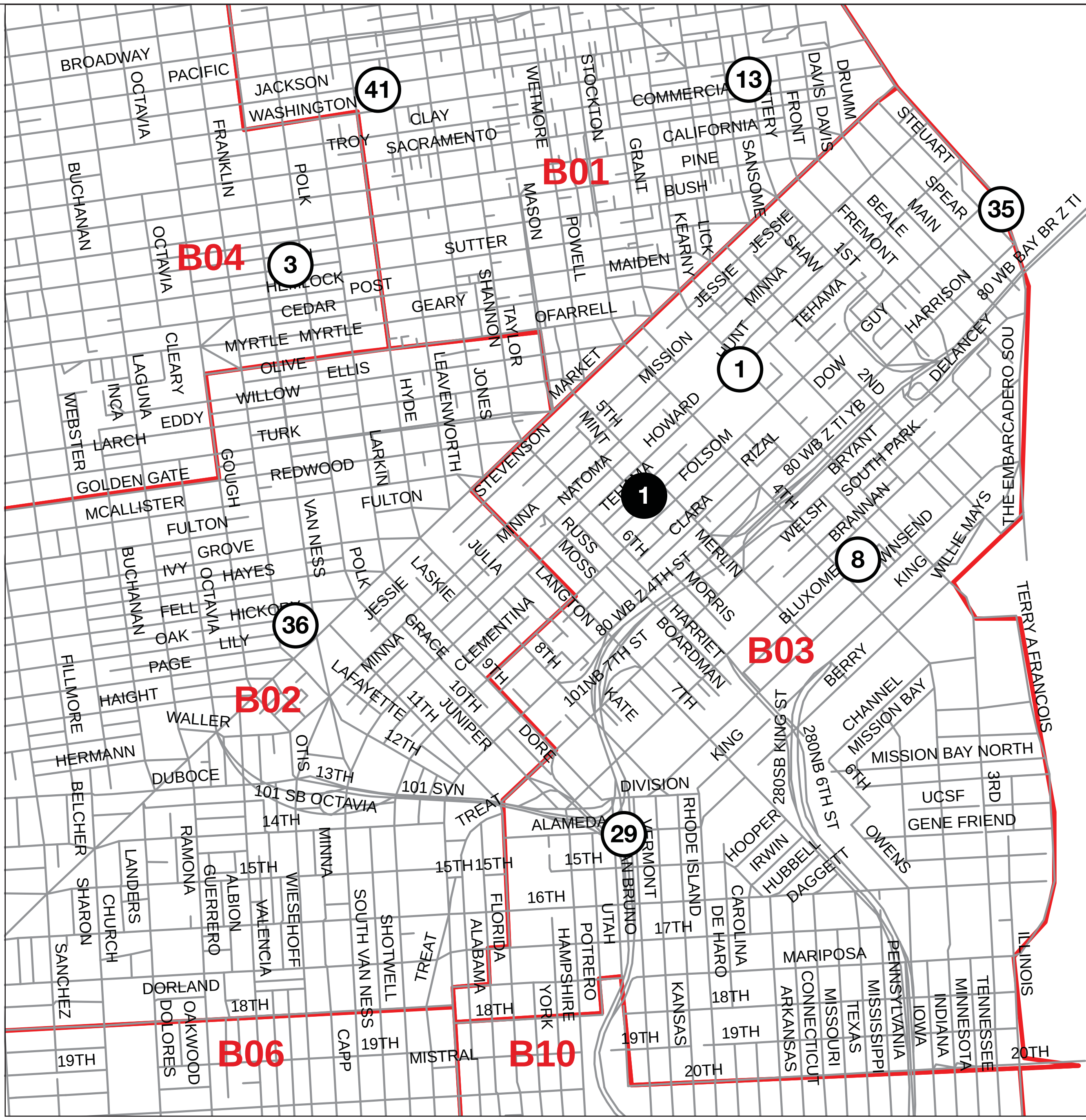
Amendments. The plans would need to be reviewed and approved by the San Francisco Department of Building Inspection, the department within San Francisco that ensures that all State and local codes and requirements related to construction are met.

The 161 Natoma Street building adjacent to the project site currently has emergency exits out of the building onto Hunt Street, with an egress path away from Hunt Street to Natoma Street across a portion of the SFMOMA Natoma pad that would be developed as part of the SFMOMA Expansion. As part of the SFMOMA Expansion, a pedestrian path about 4 feet wide, with a vertical clearance of about 14.5 feet, would be provided along the southeast corner of the Natoma pad area running between the existing Hunt Street and Natoma Street to preserve this emergency exit path of travel from the 161 Natoma Street building to Natoma Street. Therefore, emergency egress for the 161 Natoma Street building would be maintained. Overall, the SFMOMA Expansion's impacts on emergency access would be less than significant.

Fire Station Relocation. This section presents information related to the impact of the relocation of Fire Station No. 1 on response times, and information related to the projected signal preemption system that would be implemented as part of the project to facilitate emergency response.

<u>Emergency Response</u>. Fire Station No. 1 is located within Battalion 3, which also includes Station No. 8 at 36 Bluxome Street at Fourth Street, Station No. 35 at Pier 22 ½ at Harrison Street, and Station No. 48 on Treasure Island. The location of the stations and boundaries of Battalion 3 in downtown San Francisco, as well as the adjacent Battalions and nearby stations are presented on Figure IV.D-15. It should be noted that a new fire station at China Basin Street at Third Street is planned to be added to Battalion 3, which would serve the growing Mission Bay area.

All firefighters in San Francisco are trained to provide either fire engine or fire truck services, and do not have specialized capabilities that vary between stations. However, Station No. 1 is one of the two stations in San Francisco that also includes a rescue squad. The second San Francisco rescue squad is located at Station No. 7 at Nineteenth Street and Folsom Street. Each rescue squad is assigned to serve



Legend

① **EXISTING STATIONS**

- **1** 676 HOWARD ST AT THIRD ST (B03)
- **3** 1067 POST ST AT POLK ST (B04)
- **8** 36 BLUXOME ST AT FOURTH ST (B03)
- **13** 530 SANSOME ST AT WASHINGTON ST (B01)
- **29** 299 VERMONT ST AT 16TH ST (B02)
- **35** PIER 22 1/2, THE EMBARCADERO AT HARRISON ST (B03)
- **36** 109 OAK ST AT FRANKLIN ST (B02)
- **41** 1325 LEAVENWORTHST AT JACKSON ST (B01)

❶ **PROPOSED RELOCATION OF STATION 1**

- **1** 935 FOLSOM ST AT FIFTH ST (B03)

FIGURE IV.D-15

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

SFFD Batallion Boundaries and Fire Stations

SOURCE: LCW CONSULTING, 2011.

one half of San Francisco. With the proposed relocation of Station No. 1 (approximately ½ mile to the west), the SFFD does not anticipate changing the service area boundaries or protocols for responding to incidents, although changes in protocols would be part of the ongoing evaluation of response times, and the addition or decommissioning of stations or fire vehicles. The SFFD has indicated that duties and services at Station No. 1 would not change from existing conditions.

Fire Station No. 1 provides a high volume of responses compared to other stations in San Francisco due to the density and variety of uses, and a large transient population (resulting in a higher number of medical calls). Table IV.D-23 summarizes the number and type of incidents for fiscal years 2007-2008, 2008-2009, and 2009-2010 for Stations No. 1, 8 and 35 in Battalion 3, Station No. 3 in Battalion 4 to the northwest, and Station No. 29 in Battalion 2 to the southwest. For Station No. 1, the number of calls on an annual basis has remained relatively similar over the 3 years. Emergency and non-emergency calls account for about 80 percent of calls, alarms account for 18 percent of calls, and fires/rescues account for about 2 percent of calls.

Table IV.D-23: SFFD Incident Responses by Type – Selected Fire Stations [1]

Fiscal Year/Call Type	No. 1 Howard/Third	No. 3 Post/Polk	No. 8 Bluxome/Fourth	No. 29 16th/Vermont	No. 35 Pier 22 ½
2007-2008					
Alarms	2,484	1,414	539	280	376
Fire/Rescue	318	211	104	62	53
Medical – No Emergency	3,802	2,205	771	335	307
Medical – Emergency	7,455	4,259	1,325	634	580
Total	**14,059**	**8,089**	**2,739**	**1,311**	**1,316**
2008-2009					
Alarms	2,507	1,392	542	314	355
Fire/Rescue	274	206	68	65	53
Medical – No Emergency	3,101	1,918	637	324	313
Medical – Emergency	7,704	4,523	1,351	666	579
Total	**13,586**	**8,039**	**2,598**	**1,369**	**1,300**
Southeast					
Alarms	2,520	1,589	682	381	335
Fire/Rescue	240	205	92	84	55
Medical – No Emergency	3,333	2,067	713	300	258
Medical – Emergency	7,287	4,732	1,554	630	535
Total	**13,380**	**8,593**	**3,041**	**1,395**	**1,183**

Note:

[1] Stations No. 1, 8 and 35 are in Battalion 3; Station No. 3 is in Battalion 4; and Station No. 29 is in Battalion 2.

Source: SFFD, 2011.

Incident calls and responses are coded to fire boxes.[11] For each fire box, the SFFD has a protocol and order regarding which stations are called to respond, depending on the type of incident, location and staff, vehicles or equipment availability. Although a box may be in another battalion's geographic area, fire stations' responses overlap two or more battalions.

Information obtained from the SFFD on responses for calendar year 2009 was reviewed to assess the impact of the relocation of Station No. 1 on emergency response services. In 2009, Station No. 1 had about 12,460 responses to incidents (note that multiple vehicles responding to the same incident are counted as separate responses), with responses per month ranging between 830 and 1,190 responses, and with an average of about 1,040 responses per month.[12] About 33 percent of all responses from Station No. 1 were to locations east of Fifth Street and north of Harrison Street, about 8 percent were along the Fifth Street corridor north of Harrison Street, 53 percent were west of Fifth Street and north of Harrison Street (primarily along the Sixth Street corridor), and 6 percent were south of Harrison Street. The SFFD has indicated that these patterns are consistent with patterns in other years. Therefore, relocation of Fire Station No. 1 would bring the station closer to the majority of the historical incidents (along and west of Fifth Street and north of Harrison Street (61 percent of responses)).

From the existing station at 676 Howard Street, vehicles leaving the station travel westbound on Howard Street to either access Third Street northbound to continue to destinations north of Market Street, or continue westbound on Howard Street for locations west and south (via Fourth Street). For destinations to the east, vehicles need to either access Mission Street or Market Street eastbound from Third Street northbound, or access Folsom Street eastbound from Fourth Street southbound. The existing station is located within a dense area with respect to pedestrians (there is a high density of uses that generate pedestrian traffic, including hotels, a convention center, cultural institutions, and

[11] An incident is a specific event to which one or more fire stations or fire vehicles respond. Responses account for each vehicle that is dispatched to the incident (including the Battalion Chief). For one incident, therefore, there could be two or more responses, depending on the type of incident.

[12] Responses related to administrative duties, which are included in the database, were excluded from the analysis of incident responses.

commercial office uses), along a major corridor to the area freeway system (e.g., New Montgomery Street and Howard Street), and is adjacent to a busy passenger zone where taxis and limousines occasionally extend upstream from the W Hotel. While these conditions are standard in dense metropolitan areas, they require constant monitoring of roadway conditions and extra precautions by firefighters during incident responses and testing of equipment.

It should also be noted that the existing station, which has three fire and rescue vehicles stored within a two-door configuration, requires firefighters to occasionally pull out the vehicle in front in order to access the vehicle behind. This prolongs the disruption to traffic flow on Howard Street and increases response times. (The new station at 935 Folsom Street would house the same three vehicles, but would have three doors instead of two.) In addition, during the AM peak period, firefighters park the emergency vehicles within travel lanes to conduct equipment testing, which reduces the capacity of Howard Street.

To determine the effect of the relocation of Station No. 1 on emergency response times, 2009 data on dispatch and on-scene times and incident location (coded to fire box) for trips by Engine 1 at Station No. 1 were used to calculate average travel times (for all responses at all times of day) and average travel speeds. The travel times, travel speeds and distance travelled was calculated from Station No. 1 to four representative locations (representative travel routes are shown on Figures IV.E-1 through IV.E-4 in the Section IV.E, Noise). Existing average travel times between the existing station and incident locations were calculated to be less than 5 minutes, and generally between 3 and 4 minutes. Changes in travel distance to the four general locations from the Fire Station Relocation and Housing Project site and representative travel times were used to determine the anticipated changes in travel times associated with the new fire station location.

Travel routes would change somewhat due to the relocation of the fire station about 2,400 feet to the west and 700 feet to the south of the existing station. Due to the proposed signal preemption at the intersections of Folsom/Fifth and Folsom/Sixth Streets that would be interconnected with the fire station operations, fire and rescue vehicles destined to the north or south would have direct access via either Fifth Street or Sixth Street, both of which are two-way streets. Folsom Street provides direct access to the east, and the block of Folsom Street between Fifth and Sixth Streets typically does not experience congestion.[13] For access to the west, fire and rescue vehicles would use Fifth Street or Sixth Street to access either Howard Street or Harrison Street, both of which are one-way westbound streets. In general, operations at intersections adjacent to the 935 Folsom Street site are less congested throughout the day than those in the vicinity of the existing station, and fire and rescue vehicles would better be able to avoid localized congestion on their route to more distant responses.

Table IV.D-24 presents the existing distances and travel times between Station No. 1 at the existing location, and the estimated change in distance and travel time for the new station. It should be noted that these travel times are representative, and travel times could change depending on time of day and route taken by fire vehicles.

As indicated in Table IV.D-24, travel distances and travel times would be shorter for responses along Fifth Street and Sixth Street, and along Folsom Street. While the distance to the Market/Second Street location would increase, it is not anticipated that travel times would increase substantially, and average travel times would remain less than 5 minutes. This location would be accessible via Folsom Street eastbound to Second Street northbound. Under existing conditions, due to the one-way street system and frequent congestion along the Third Street corridor, travel time to Market/Second is longer compared to locations further away.

[13] Folsom Street does experience recurring congestion and queuing during the weekday PM peak period, due to heavy traffic volumes destined for the Bay Bridge. Field observations indicate that this queuing on Folsom Street begins at Essex Street and typically extends as far west as Third Street, and sometimes as far as Fourth Street. In addition, when queues are present, typically the queuing is concentrated in the two right lanes (which feed onto Essex Street), while the left two lanes do not experience queues. Therefore, fire vehicles would be able to use the left lanes on Folsom Street to avoid queues and travel eastward.

Table IV.D-24: Fire Station No. 1 Response Times – Selected Locations, Existing Station and Fire Station Relocation Site

Station	Second/ Market	Second/ Folsom	Fifth/ Folsom	Sixth/ Market
Existing Station				
Distance (feet)	1,800	3,560	2,660	4,200
Travel Time (minutes:seconds)	3:19	3:34	3:27	3:36
935 Folsom Street Site				
Distance (feet)	5,040	3,120	420	2,400
Travel Time (minutes:seconds)	4:24	2:44	0:24	2:16
Net Change				
Distance (feet)	+3,240	-440	-2,240	-1,800
Travel Time (minutes:seconds)	+1:05	-0:50	-3:03	-1:10

Source: SFFD, LCW Consulting, 2011.

Traffic Signal Preemption. The new fire station would be equipped with a traffic signal preemption system, using Opticom GPS technology, that would be linked to the nearby intersections of Fifth/ Folsom and Sixth/Folsom Streets. A traffic signal preemption system is a traffic-control system to improve emergency response times and traffic safety by temporarily overriding signalized intersections to benefit emergency vehicles. In general, traffic signal preemption provides an emergency vehicle the ability to preempt a traffic signal in order to have the "green" light in the direction of the responding vehicle. The signal would preempt to green for the direction of the emergency vehicle, and would hold red in all other directions.

Approximately 2 years ago, MTA received a federal grant to implement traffic signal preemption at 30 intersections in the vicinity of five fire stations. The intersections were selected based on the travel corridors used by emergency vehicles, and locations where congestion levels have the potential to interfere with emergency responses. In the vicinity of Station No. 1, four signals south of Market Street and six signals north of Market Street were equipped with signal preemption.[14] At the existing fire station on Howard Street, signal preemption is employed at the intersections of Third/Howard and Fourth/Howard Streets. During signal preemption, westbound Howard Street is given a green

[14] In the vicinity of Fire Station No. 1, the intersections of Bush/Kearny, Geary/Grant, Geary/Powell, Geary/Stockton, Kearny/Post, and Kearny/Sutter Streets north of Market Street, and the intersections of Third/Howard, Third/Mission, Fourth/Howard, and Fourth/Mission Streets south of Market Street are equipped with signal preemption.

signal, which is held while fire and rescue vehicles are within the westbound approach corridor. If emergency response vehicles are traveling northbound on Third Street at Mission Street, signal preemption would provide extended green time for northbound Third Street while emergency response vehicles are in the approach corridor. Signal preemption is provided for either westbound Howard Street or northbound Third Street.

As noted above, signal preemption at the intersections of Folsom/Fifth and Folsom/Sixth Streets would be implemented as part of the Fire Station Relocation and Housing Project. Signal preemption equipment would include a GPS-enabled activation switch within the fire station and equipment on fire and rescue vehicles and at adjacent traffic signal mast arms. The signal preemption would be activated at the time the call comes in. The impact to traffic on adjacent streets would be a temporary disruption. At the intersection of Sixth/Folsom Streets, the traffic signal for the eastbound approach of Folsom Street to Sixth Street, and Sixth Street northbound and southbound approaches would turn red, and remain so until the truck exits the "preemption zone," as defined by MTA. At the intersection of Fifth/Folsom Streets, the northbound and southbound approaches would turn red, and the signal for Folsom Street eastbound would turn green so that vehicles on the block between Fifth Street and Sixth Street would clear the length of the block before the emergency response vehicle leaves the station. Fire and rescue vehicles would then have the option to travel either eastbound towards Fifth Street, or westbound towards Sixth Street. Because the signal at Sixth/Folsom Streets would hold all traffic, emergency vehicles would be able to proceed against the normal traffic flow. At both Fifth Street and Sixth Street, the pedestrian "Flashing Red Hand" for the approaches that will be receiving a red phase is triggered first, to ensure that any pedestrians within the crosswalk can finish crossing prior to the signal change.

Since LOS operation conditions at intersections in the vicinity of the Fire Station Relocation and Housing Project site generally operate at LOS D or better throughout the day, and have low to moderate levels of pedestrians, it is not anticipated that signal preemption would be needed at additional intersections. The existing signal preemption installed at the Third and Fourth Streets intersections and north of Market Street would continue to facilitate emergency vehicle access to incidents in the vicinity of those areas.

In general, the first choice of firefighters responding to an urgent alarm is the use of flashing red lights. If traffic yields to the emergency vehicle the right of way, it is often unnecessary to engage the siren or air horn. The use of signal preemption as part of station operations would allow emergency vehicles to exit onto a street that has been cleared of traffic, which would reduce the need to use sirens and air horns.

Proposals for Folsom Street currently under study by MTA and the Planning Department as part of the ENTRIPS project include converting Folsom Street to two-way operations. The conversion of Folsom Street to two-way operations is not anticipated to substantially affect emergency access or fire station operations. In the event that the two-way Folsom Street design includes a center median, a median break would need to be provided at the Fire Station Relocation and Housing Project site (e.g., similar to the median break provided at Station No. 5 on Webster Street at Turk Street) so that fire and rescue vehicles would be able to go eastbound or westbound on Folsom Street.

Overall, the relocation of the fire station would not substantially affect the operations of Fire Station No. 1, or significantly affect emergency responses. Therefore, the Fire Station Relocation's impact on emergency access would be less than significant.

Housing Project. Emergency access to the proposed multi-family residential building site would remain unchanged from existing conditions (although a new fire station would be located adjacent). Emergency service providers would continue to be able to pull up to the project site from Shipley Street or could turn onto Falmouth Street from Folsom Street. Detailed plans for wet standpipes and fire exits have not yet been designed. However, the building would be designed to meet the 2010 San Francisco Building Code and the 2010 California Building Code with San Francisco Amendments. The plans would need to be reviewed and approved by the San Francisco Department of Building Inspection, the department within San Francisco that ensures that all State and local codes and requirements related to construction are met. Therefore, the Housing Project's impacts on emergency access would be less than significant.

Impact TR-8: Construction of the proposed SFMOMA Expansion and Fire Station Relocation and Housing Project would not result in significant impacts to the transportation system. (Less Than Significant)

Prior to construction, as part of the construction application phase, the project sponsor and construction contractor(s) would meet with DPW and MTA staff to develop and review truck routing plans for demolition, disposal of excavated materials, materials delivery and storage, and staging for construction vehicles (e.g., during the concrete pour). The construction contractor would be required to meet the requirements in the City of San Francisco's Regulations for Working in San Francisco Streets (the Blue Book), including those regarding sidewalk and lane closures, and would meet with MTA staff to determine if any special traffic permits would be required. In addition to the regulations in the Blue Book, the contractor would be responsible for complying with all City, State, and federal codes, rules and regulations.

All construction activities affecting city streets would be coordinated, reviewed and approved by DPW and MTA's Special Projects and Street Use section. Prior to construction, the project contractor would coordinate with Muni's Street Operations and Special Events Office to coordinate construction activities and reduce any impacts to transit operations.

Construction-related activities would typically occur Monday through Saturday, between 7:00 a.m. and 8:00 p.m. Construction is not anticipated to occur on Sundays or major legal holidays, but may occur on an as-needed basis. The hours of construction would be stipulated by the Department of Building Inspection, and the contractor would need to comply with the San Francisco Noise Ordinance.[15]

Schedule. The proposed projects would be constructed in sequence to ensure that any interruption of medical response and fire protection services provided by Fire Station No. 1 would not be minimized. Construction activities would start with the demolition of the existing commercial building at 935

[15] The San Francisco Noise Ordinance permits construction activities seven days a week, between 7:00 a.m. and 8:00 p.m.

Folsom Street and the construction of a new fire station on the site. Please refer to Chapter II, Project Description, for additional detail on the construction of the proposed projects.

SFMOMA Expansion. The location of on-site and off-site construction staging areas (if required) would be determined after the construction contractor is retained. Construction staging may occur within the project site and the adjacent sidewalks. Construction activities would primarily be conducted from Minna Street, Natoma Street, and Howard Street. Construction activities are not expected to affect Third Street.

- On Howard Street, it is not currently known if construction activities would require closure of only a portion or the entire sidewalk (the sidewalk is 12 feet wide). If the entire sidewalk is closed, the curb lane would be used to provide a temporary pedestrian walkway. The curb lane closure would affect one metered parking space, as the remaining curb adjacent to the project site is currently a driveway for the fire station or a red curb.
- On Minna Street, there is a 7-foot wide sidewalk adjacent to the project site, which provides access to the SFMOMA garage. On-street parking is not permitted adjacent to the project site. Closure of the sidewalk would affect access between Third Street and the SFMOMA garage. Pedestrians would be directed to use the north sidewalk and would cross Minna Street midblock to access the garage.
- Natoma Street near the project site would be used for construction activities; however, it is not anticipated that sidewalks on Natoma Street would be affected.

Construction activities would affect access to the existing off-street loading areas on Minna and Natoma Streets, and therefore the project sponsor would need to make arrangements to accommodate the loading demand associated with the existing SFMOMA and W Hotel operations during construction. In addition, depending on the expansion and design, pedestrian and vehicular access between the W Hotel's porte cochere and the SFMOMA garage would be temporarily eliminated, and all valet operations and truck loading activities would likely occur within the hotel white zone on Howard Street. When selected, the construction contractor would be requested to develop staging, laydown, and sequencing plans that would include maintenance of access and operations for the W Hotel.

If it is determined that temporary travel lane closures on Howard Street would be needed, the closures would be coordinated with the City in order to minimize the impacts on local traffic. 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 MTA, DPW, SFFD, Planning, Police, DPH; and the City and County of San Francisco Port.

Since construction activities would not affect Third Street, the existing poles supporting the overhead wire system on Third Street for Muni transit service would not be affected. During the construction period, the overhead wire support pole on Howard Street in front of the 670 Howard Street building would need to be maintained. There are no poles in front of the existing Fire Station No.1, nor are any eyebolts attached to either the existing firehouse or 670 Howard Street building.

During the construction period, there would be a flow of construction-related trucks into and out of the site. The impact of construction truck traffic would be a temporary lessening of the capacities of streets due to the slower movement and larger turning radii of trucks, which may affect both traffic and Muni operations, particularly on Third Street. Since primary access to the construction site would be from Howard Street and Minna Street, construction truck activity would need to be monitored to ensure that construction activities do not block Minna Street and vehicular access to the SFMOMA garage, as well as access for commercial vehicle deliveries to establishments on Minna Street and Natoma Street, including the W Hotel.

It is anticipated that a majority of the construction-related truck traffic would use I-80/U.S. 101, Third Street, and Fourth Street to travel to and from the project site. To access the project site from I-80/U.S. 101, trucks would use the nearby off-ramps at Fremont Street, and at Fourth/Bryant, and travel on Third Street and turn right onto Minna Street, or on Second Street to Howard Street, to the project site. To return to I-80/U.S. 101, trucks would use the on-ramps at First/Harrison or Fourth/ Harrison Streets.

Table IV.D-25 presents the average and peak number of construction trucks and construction workers arriving at the project site on a daily basis. There would be an average of between 2 and 22 construction truck trips (one-way trips) traveling to the site on a daily basis, with the greatest number during the excavation and shoring phase, and foundation construction. The peak number of 72 trucks per day is anticipated to occur during the foundation phase, which would involve concrete pours and would involve deliveries within a short time period.

Table IV.D-25: SFMOMA Expansion – Summary of Proposed Project Construction Trucks and Workers by Phase

Phase	Duration (months) [2]	Number of Daily Construction Trucks		Number of Daily Construction Workers	
		Peak	Average	Peak	Average
1. Abatement & Demolition	3	18	6	28	13
2. Clearing/Grubbing	1	10	2	19	7
3. Excavation and Shoring	3	44	19	39	18
4. Foundation	4	72	14	50	19
5. Superstructure & MEPF [1]	6	36	22	217	210
6. Exterior Envelope	10	12	8	42	18
7. Interior Finishes	10	14	6	265	190
8. Site Work	2	11	4	38	12

Note:

[1] MEPF – Mechanical, electrical, plumbing, and fire protection.

[2] Some of these phases would occur simultaneously (i.e., these phases are not necessarily sequential).

Source: SFMOMA, 2011.

There would be an average of between 7 and 210 construction workers per day at the project site, with the greatest number during the superstructure construction (210 to 217 workers) and interior finishes (190 to 265 workers) phases. The trip distribution and mode split of construction workers are not known. In San Francisco, most construction workers use transit or carpool to the site to reduce traffic and parking problems during construction. However, it is anticipated that the addition of the worker-related vehicle- or transit-trips would not substantially affect transportation conditions. Construction workers who drive to the site would cause a temporary increase in parking demand. The time-limited metered parking in the vicinity of the project site would preclude legal all-day parking by construction personnel. The construction contractor would arrange for off-site parking. Since the nearby parking facilities (e.g., Jessie Square Garage, Moscone Garage, Hearst Garage) currently have availability during the day, it is anticipated that construction worker parking demand could be accommodated without substantially affecting areawide parking conditions.

Construction of the SFMOMA Expansion may overlap with the construction activity of other proposed projects in the area, notably the proposed 706 Mission Street building. The construction activities associated with these projects would affect access, traffic operations, and pedestrian movements. It is anticipated that the construction manager for each project would work with the various departments of the City 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 the overlap in construction activity.

It is not anticipated that construction of the Central Subway Project tunnel on Fourth Street (utility relocation is currently underway, and construction activities are anticipated to occur through 2017), or construction related to development projects and public realm improvements within the proposed Transit Center District Plan (currently undergoing environmental review) would substantially affect traffic operations in the immediate vicinity of the SFMOMA Expansion.

Prior to construction, the project contractor would coordinate with MTA's Street Operations and Special Events Office to coordinate construction activities and reduce any impacts to transit operations, particularly on Third Street.

Fire Station Relocation. Construction staging for the new fire station on the Fire Station Relocation and Housing Project site would occur primarily on the portion of the site planned for the residential component, and possibly adjacent to the project site on Folsom Street. It is anticipated that the sidewalk along the frontage on Falmouth Street would be closed during a portion of the construction duration, and pedestrians would be directed to use the sidewalk on the west side of the street. The nine on-street parking spaces adjacent to the project site on Falmouth Street would be eliminated as part of the Fire Station Relocation and Housing Project.

It is not anticipated that any regular traffic lanes would need to be closed during construction. However, if it is determined that temporary traffic lane closures would be needed, they would be coordinated with the City in order to minimize impacts on local traffic. Since there are no Muni bus stops along the project site frontage, it is not anticipated that any Muni bus stops would need to be relocated during construction of the proposed Fire Station Relocation and Housing Project.

It is anticipated that a majority of the construction-related truck traffic would use I-80/U.S. 101 and I-280 to access the project site from the East Bay and South Bay. For access between the project site and the East Bay, trucks would be routed to the site from I-80 westbound via the Fifth/Harrison Streets off-ramp, and would return to I-80 eastbound from Folsom to the Fifth/Bryant Streets on-ramp. For access between the project site and the South Bay, trucks would be routed from I-280 northbound to the site via the Sixth Street off-ramp to Folsom Street, and would return to I-280 southbound from Folsom Street to the Sixth Street on-ramp.

Table IV.D-26 presents the average and peak number of construction trucks and construction workers arriving at the new fire station site on a daily basis. It is anticipated that there would be an average of between four and 32 construction workers per day at the project site, depending on the construction phase. The trip distribution and mode split of construction workers are not known. Construction workers that drive to the site would be able to park on-site, and would also park at nearby commercial parking facilities (e.g., the public parking lot at Sixth and Folsom Streets). It is anticipated that the addition of the worker-related vehicle- or transit-trips would not substantially affect transportation conditions.

Table IV.D-26: New Fire Station at 935 Folsom Street – Summary of Proposed Project Construction Trucks and Workers by Phase

Phase	Duration (months)[2]	Number of Daily Construction Trucks		Number of Daily Construction Workers	
		Peak	Average	Peak	Average
1. Abatement & Demolition	0.5	16	3	16	6
2. Clearing/Grubbing	0.5	8	2	9	4
3. Excavation and Shoring	1	10	2	9	4
4. Foundation	2	17	3	18	12
5. Superstructure & MEPF [1]	4	19	5	64	29
6. Exterior Envelope	4	10	4	20	12
7. Interior Finishes	4	10	4	50	32
8. Site Work	1	8	2	12	3

Note:

[1] MEPF – Mechanical, electrical, plumbing and fire protection

[2] Some of these phases would occur simultaneously (i.e., these phases are not necessarily sequential).

Source: SFMOMA, 2011.

Housing Project. Construction activities associated with the Housing Project have not yet been defined, but would be similar to those described above for the new fire station. The construction duration for residential buildings of a similar size is generally about 12 to 18 months. Construction staging would occur on-site and on the sidewalk or parking lane on Shipley Street and/or Falmouth Street adjacent to the proposed residential project. It is anticipated that construction of the Housing Project would occur following completion of the fire station, because, as described above, the residential site would be used for construction staging for the new fire station.

Because the construction schedule would be temporary and phased, construction-related transportation impacts would be less than significant. Some overlap of the SFMOMA Expansion and the proposed 706 Mission Street project may occur; however, coordination would be required to minimize impacts to the local transportation network.

Parking Information

San Francisco does not consider parking supply as part of the permanent physical environment and therefore, does not consider changes in parking conditions to be environmental impacts as defined by CEQA. The San Francisco Planning Department acknowledges, however, that parking conditions may be of interest to the public and the decision makers. Therefore, this section presents a parking analysis for informational purposes.

Parking conditions are not static, as parking supply and demand varies over time. Therefore, 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.

Parking deficits are considered to be social effects, rather than impacts on the physical environment as defined by CEQA. Under CEQA, a project's social impacts need not be treated as significant impacts on the environment. Environmental documents should, however, address the secondary physical impacts that could be triggered by a social impact (*CEQA Guidelines* Section 15131(a)). The social inconvenience of parking deficits, such as having to hunt for scarce parking spaces, is not an environmental impact, but there may be secondary physical environmental impacts, such as increased traffic congestion at intersections, air quality impacts, safety impacts, or noise impacts caused by congestion. However, in the experience of San Francisco transportation planners, 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 in particular, would be in keeping with the City's "Transit First" policy. 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."

This analysis accounts for potential secondary effects of parking, 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. Moreover, 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. Hence, any secondary environmental impacts which may result from a shortfall in parking in the vicinity of the project sites 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, reasonably addresses potential secondary effects.

In summary, changes in parking conditions are considered to be social impacts rather than impacts on the physical environment. Accordingly, the following parking analysis is presented for informational purposes only.

Parking Supply and Planning Code

SFMOMA Expansion. The existing museum structure includes 18 subsurface staff parking spaces accessed from Minna Street and approximately 30 bicycle parking spaces reserved exclusively for employees. As part of the proposed SFMOMA Expansion, the parking spaces would be eliminated and the area converted to art storage or other back-of-house functions, and additional vehicular parking would not be included. The Planning Code does not require any off-street parking for arts uses in C-3 districts.

The Minna pad currently accommodates nine vehicle parking spaces, 12 motorcycle spaces, and 12 bicycle parking spaces, and these spaces would be removed. As part of the SFMOMA Expansion, approximately 10 bicycle parking spaces would be provided adjacent to the Minna pad for visitors, 20 bicycle parking spaces would be provided near the entrance along the promenade connecting Natoma and Howard Streets for visitors, and 20 bicycle parking spaces would be provided for employees adjacent to the Natoma loading easement area. A total of approximately 20 bicycle parking spaces for employees and 30 spaces for visitors would be provided.

With the relocation of the fire station to 935 Folsom Street, the driveway into the existing Fire Station No. 1 at 676 Howard Street would be eliminated and the red zone to the east would be removed. SFMOMA would request that this curb space be reconfigured to a 50-foot wide passenger loading/ unloading zone that would serve visitors accessing the building via the new entrance. The passenger zone would need to be approved at a public hearing by the MTA.

Fire Station Relocation. The new fire station at 935 Folsom Street would include 14 independently accessible or tandem spaces and one handicapped-accessible space, which would be accessed from a 12-foot wide driveway on Falmouth Street. The *Planning Code* does not have any parking requirements for fire stations.

The fire station bay doors and red curb on Folsom Street would require the elimination of three metered parking spaces adjacent to the project site, and the red zone east of the project site would require the elimination of one to two metered parking spaces (2-hour metered spaces, in effect between 9:00 a.m. and 6:00 p.m., Monday through Saturday). On Falmouth Street a red curb would be provided between Folsom Street and Shipley Street, which would eliminate nine unmetered spaces.

Housing Project. The subterranean garage for the Housing Project would be accessed from Falmouth Street via a 12-foot wide driveway, and would include up to 10 vehicle parking spaces for the 13 residential units.

Parking Demand

SFMOMA Expansion. As discussed under the project travel demand section, the SFMOMA Expansion would result in a net-new weekday parking demand for about 61 spaces. In addition, the 18 subsurface and nine surface staff parking spaces would be eliminated, resulting in a net-new demand of 88 spaces (61 spaces associated with the museum expansion, and 27 associated with the existing staff spaces that would be eliminated). This demand would need to be accommodated in off-street parking facilities, as on-street parking spaces are metered commercial vehicle or 1-hour parking spaces.

The SFMOMA website provides information on the location and hours of operation of the SFMOMA garage, the Fifth and Mission Garage, the Moscone Center Garage, and the Museum Parc Garage. With the exception of the Fifth and Mission Garage, many off-street parking facilities are well-utilized throughout the day. The additional parking demand would increase overall parking occupancy in the study area, and the midday parking occupancy would increase from 76 percent to up to 77 percent.

It should be noted that on Saturdays, capacity is generally available in the nearby parking facilities, and the net-new demand associated with the SFMOMA Expansion would be accommodated.

The proposed development over the Minna pad and the proposed reconfiguration would eliminate the 12 motorcycle parking spaces that are provided for employees. Employees commuting by motorcycle would need to find parking within nearby off-street facilities or on-street.

Fire Station Relocation. The parking demand of 13 parking spaces for the firefighters would be accommodated on-site within the 15 proposed parking spaces. The firefighters work in 24-hour shifts, which officially start at 8:00 a.m., and overlap between 7:30 and 8:30 a.m. During the overlap period, firefighters would need to park on-street on Folsom Street, or temporarily on Falmouth Street at the red curb between Folsom Street and the access driveway to the parking area.

In addition to the parking demand associated with the firefighters, the battalion chief visits the station twice a day. Since the new station would include 15 parking spaces for the 13 firefighters, the additional spaces would be available for use by the battalion chief.

The parking demand associated with the displaced parking spaces on Folsom Street and Falmouth Street would need to be accommodated elsewhere in the area. Since the parking spaces on Falmouth Street are unrestricted, these spaces are generally 100 percent occupied.

Housing Project. Only a portion of the residential parking demand of about 20 spaces would be accommodated within the residential parking supply of 10 spaces, thereby resulting in shortfall of 10 spaces. This shortfall would be accommodated on-street and in nearby off-street facilities. Overnight parking is generally available on Folsom Street (metered daytime parking) and on Shipley Street east of the project site. During the overnight hours on-street parking is well-utilized on the section of Shipley Street between Falmouth Street and Sixth Street – the section of the block that contains the majority of the residential uses on the block.

On-street parking on Shipley Street is subject to Residential Permit Parking area "U," and therefore residents of the Housing Project would be eligible to obtain RPP permits.

Impact TR-9: The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the sites would not result in potentially significant cumulative impacts to the transportation system. (Less Than Significant)

Approach. Future year 2030 Cumulative traffic conditions were based on the traffic analysis conducted for the Transit Center District Plan EIR and Western SoMa Community Plan EIR. 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. The SFCTA model output, based on projections developed for the Transit Center District Plan, takes into account both the future development expected in the Transbay/South of Market and Western SoMa areas, as well as the expected growth in housing and employment for the remainder of San Francisco and the nine-county Bay Area.

The analysis also accounts for planned or proposed transportation projects, including construction of the Transbay Terminal and Caltrain extension, the construction of the Central Subway, implementation of the Bike Plan, implementation of the Transit Effectiveness Project, and implementation of the Transit Center District Plan Public Realm Plan. The Transit Center District Plan proposes changes to the roadway network in order to increase connectivity in the roadway network, calm traffic, enhance transit circulation, and improve the pedestrian realm. Within the vicinity of the proposed projects, the following changes are proposed, and have been incorporated into the analysis.

- Establishment of two-way traffic flow on Howard Street between Fremont Street and New Montgomery Street (resulting in two-way traffic flow between The Embarcadero and New Montgomery Street), and removal of one westbound lane between New Montgomery Street and Third Street.
- Widening of sidewalks on Howard Street through removal of on-street parking or travel lanes.

- Conversion of Natoma Street between First and Second Streets into a pedestrian-only street, and establishment and installation of signalized midblock pedestrian crossings on New Montgomery at Second Street and at Natoma Street.[16]

Traffic Impacts. Figure IV.D-16 presents the 2030 Cumulative traffic volumes for the weekday PM peak hour for intersections in the vicinity of the SFMOMA Expansion site, while Figure IV.D-17 presents the PM peak hour volumes for intersections in the vicinity of the Fire Station Relocation and Housing Project site. Table IV.D-27 presents a comparison between the Existing and 2030 Cumulative intersection operating conditions for the weekday PM peak hour. Under 2030 Cumulative conditions, vehicle delays would increase at the study intersections over Existing conditions, and 10 of the 15 study intersections would operate at LOS E or LOS F conditions (as compared with four intersections under Existing conditions).

Table IV.D-27: Intersection Level of Service, Existing and 2030 Cumulative Conditions – Weekday PM Peak Hour

Intersection	Existing		2030 Cumulative	
	Delay (v/c) [1]	LOS	Delay (v/c) [1]	LOS
1. Third/Market Streets	**56.2**	**E**	**>80 (1.02)**	**F**
2. Third/Mission Streets	20.1	C	**>80 (4.78)**	**F**
3. Third/Howard Streets	36.1	D	**>80 (1.66)**	**F**
4. New Montgomery/Market Streets	42.6	D	**63.2**	**E**
5. New Montgomery/Mission Streets	21.3	C	**>80 (1.17)**	**F**
6. New Montgomery/Minna Streets [2]	**45.3 (wb)**	**E**	**>60 (wb/eb)**	**F**
7. New Montgomery/Natoma Streets [2]	30.4 (eb)	D	**36.8 (eb)**	**E**
8. New Montgomery/Howard Streets	**56.7**	**E**	**>80 (2.27)**	**F**
9. Fifth/Howard Streets	24.9	C	51.3	D
10. Fifth/Folsom Streets	19.7	B	29.8	C
11. Fifth/Harrison Streets /I-80 off-ramp	50.0	D	**>80 (0.97)**	**F**
12. Sixth/Howard Streets	23.6	C	43.3	D
13. Sixth/Folsom Streets	20.0	B	31.0	C
14. Sixth/Shipley Streets [2]	**37.3 (wb)**	**E**	**60.3 (wb)**	**F**
15. Sixth/Harrison Streets	25.7	C	53.0	D

Notes:

[1] Delay presented in seconds per vehicle. Intersections operating at LOS E or LOS F are highlighted in **bold**. Volume-to-capacity (v/c) ratio is presented for signalized intersections operating at LOS F.

[2] Unsignalized intersection. Peak hour signal warrants are not met.

Source: LCW Consulting, 2011.

[16] The SFMOMA Expansion would complement the proposed Transit Center District Plan improvements, as it would provide a new pedestrian connection between Natoma and Howard Streets. It would also allow for access between Natoma Street and Third Street through the public portion of the museum on the first and second floors.

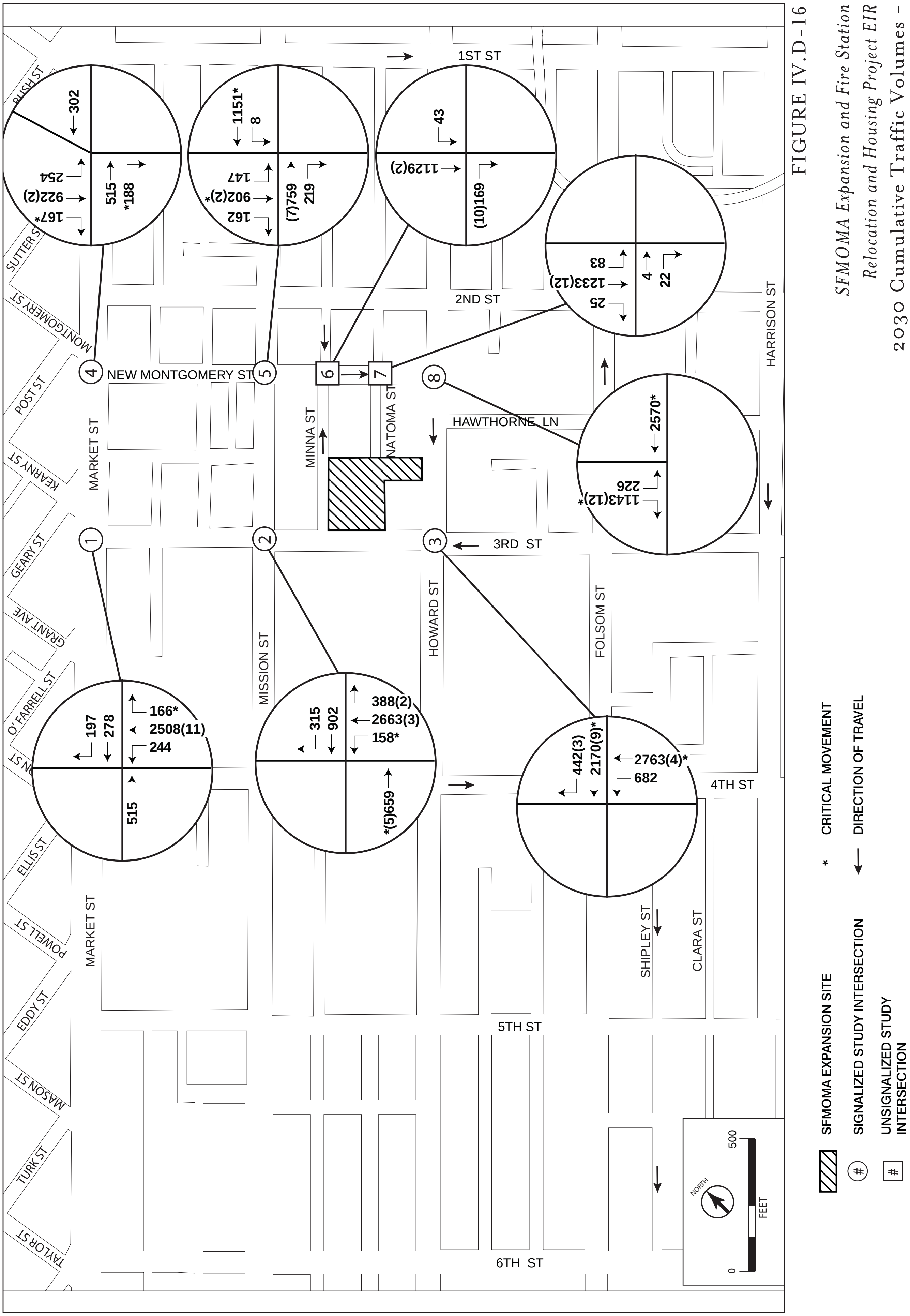


FIGURE IV.D-16

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

2030 Cumulative Traffic Volumes – Weekday PM Peak Hour

SFMOMA Expansion Vicinity

SOURCES: LCW CONSULTING, 2011.

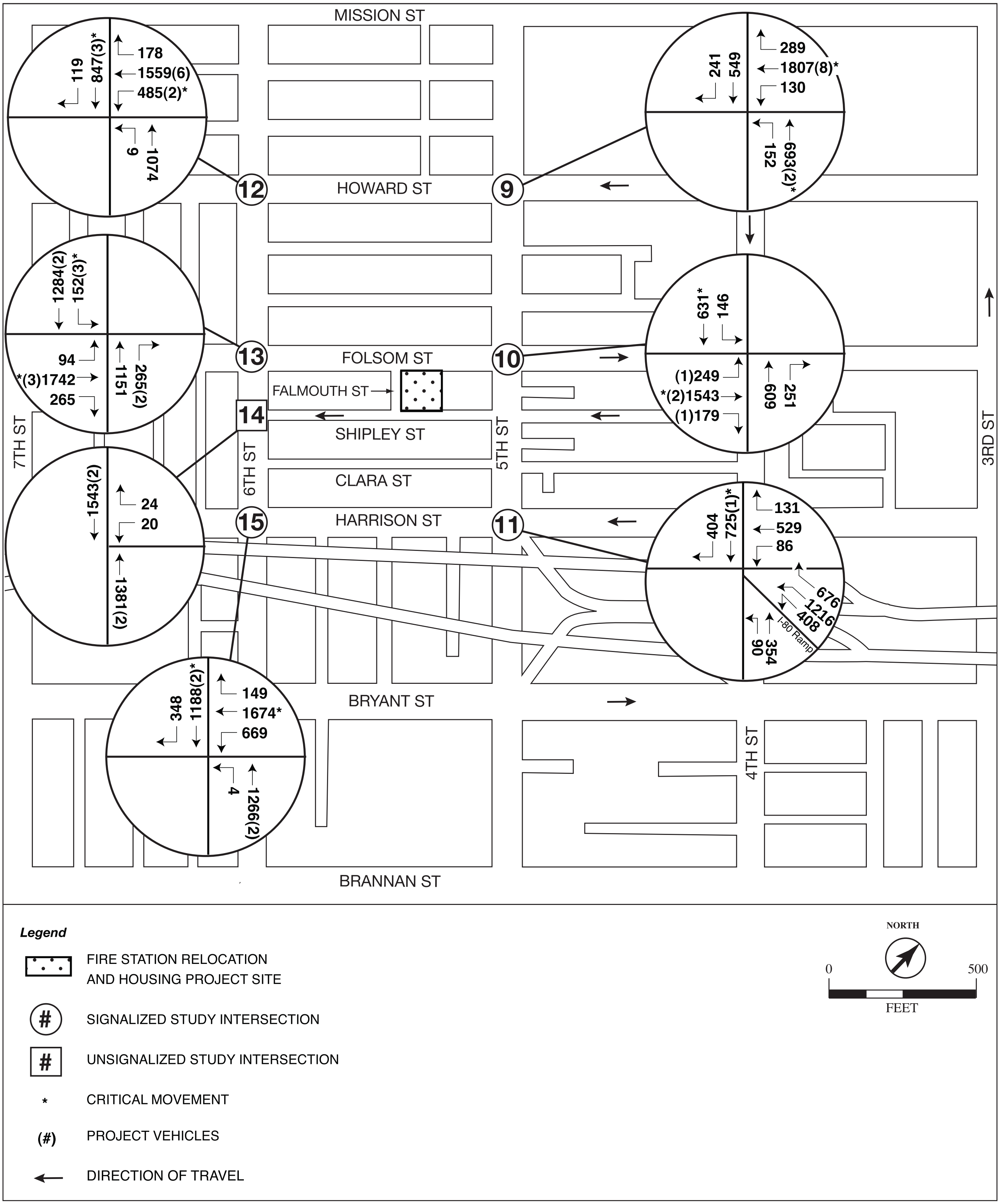


FIGURE IV.D-17

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

2030 Cumulative Traffic Volumes - Weekday PM Peak Hour
Fire Station Relocation and Housing Project Vicinity

SOURCE: LCW CONSULTING, 2011.

The contribution of the proposed projects to 2030 Cumulative traffic volumes at the critical movements was examined. Based on this assessment, it was determined that vehicle trips generated by the proposed projects would represent less than a cumulatively considerable contribution to LOS E or LOS F operating conditions and therefore, the contribution to traffic at the study intersections would not be considerable.[17] The poor operating conditions at the study intersections would be due to traffic volume increases associated with other developments in the vicinity of the project sites. Since the proposed projects would not result in a considerable contribution to the poor operating conditions, impacts at these intersections would be considered less than significant. Mitigation measures would not be required.

Transit Impacts. Future year 2030 Cumulative Muni and regional transit screenlines were obtained from the transit analysis conducted for the Transit Center District Plan EIR.

Table IV.D-28 presents the Muni screenline analysis for 2030 Cumulative conditions for the weekday PM peak hour. Under 2030 Cumulative conditions, the Geary Corridor that is part of the Northwest Screenline, and the Third Street Corridor that is part of the Southeast screenline would exceed Muni's capacity utilization standard of 85 percent. The Subway line corridor that is part of the Southwest screenline would continue to operate above the capacity utilization standard. During the PM peak hour, the contribution of the proposed projects to cumulative ridership on Muni screenlines and corridors would not represent a considerable contribution (a total of 28 transit trips compared with a 2030 Cumulative transit ridership across all screenlines of 29,592). Overall, the proposed projects would not considerably contribute to a cumulative impact on transit.

[17] Please refer to the *SFMOMA Expansion and Fire Station Relocation and Housing Project Transportation Impact Analysis*, for a discussion of the contribution of project-related trips to individual intersections. This document is available for review at the Planning Department in Case File No. 2009.0291E.

Table IV.D-28: Muni Screenline Analysis, Existing and 2030 Cumulative Conditions – Weekday PM Peak Hour

Screenline/Corridor	Existing			2030 Cumulative		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
Northeast						
Kearny/Stockton Corridor	1,129	2,010	56%	1,322	1,694	78%
All Other Lines	757	1,589	48%	1,515	2,065	73%
subtotal	*1,886*	*3,599*	*52%*	*2,837*	*3,759*	*75%*
Northwest						
Geary Corridor	1,684	2,230	76%	**2,465**	**2,700**	**91%**
All Other Lines	4,937	7,893	63%	6,602	7,972	83%
subtotal	*6,621*	*10,123*	*65%*	*9,067*	*10,672*	*85%*
Southeast						
Third Street Corridor	554	714	78%	**2,814**	**2,856**	**99%**
Mission St Corridor	1,254	2,350	53%	1,537	2,256	68%
All Other Lines	2,860	3,964	72%	4,139	4,828	86%
subtotal	*4,668*	*7,028*	*66%*	*8,490*	*9,940*	*85%*
Southwest						
Subway Lines	**5,883**	**6,783**	**87%**	**7,335**	**7,973**	**92%**
All Other Lines	1,551	2,840	55%	1,863	2,730	68%
subtotal	***7,434***	***9,623***	***77%***	*9,198*	*10,703*	*86%*
Total All Screenlines	**20,609**	**30,373**	**68%**	**29,592**	**35,074**	**84%**

Note: Corridors where capacity utilization exceeds the 85 percent standard are highlighted in **bold**.

Source: AECOM, 2011; LCW Consulting, 2011.

As indicated in Table IV.D-29, under 2030 Cumulative conditions, transit ridership on regional transit lines is projected to exceed the available capacity at several corridors, and capacity utilization standards would not be met for BART to the East Bay, AC Transit, and Golden Gate Transit bus lines. In addition, ferry service to the North Bay would approach 100 percent of capacity. During the PM peak hour, the contribution of the proposed projects to cumulative ridership on these regional transit operators would not represent a considerable contribution (a total of 10 transit trips compared with a 2030 Cumulative regional transit ridership across all screenlines of 57,600).

Table IV.D-29: Regional Screenline Analysis, Existing and 2030 Cumulative Conditions – Weekday PM Peak Hour

Screenline/Corridor	Existing			2030 Cumulative		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
East Bay						
BART	16,985	14,140	120%	27,697	19,600	141%
AC Transit	2,517	4,193	60%	7,725	6,600	117%
Ferries	702	1,519	46%	2,188	2,719	80%
subtotal	*20,204*	*19,852*	*102%*	*37,610*	*28,919*	*130%*
North Bay						
GGT buses	1,397	2,205	63%	2,564	2,205	116%
GGT ferries	906	1,700	53%	1,663	1,700	98%
subtotal	*2,303*	*3,905*	*59%*	*4,227*	*3,905*	*108%*
South Bay						
BART	9,545	10,360	92%	11,210	14,000	80%
Caltrain	1,986	3,250	61%	4,067	6,400	64%
SamTrans	575	940	61%	410	940	44%
Ferries	0	0	0%	76	300	25%
subtotal	*12,106*	*14,550*	*83%*	*15,763*	*21,640*	*73%*
Total All Screenlines	**34,613**	**38,307**	**90%**	**57,600**	**54,464**	**106%**

Source: AECOM, 2011; LCW Consulting, 2011.

Improvement Measures

This section presents the improvement measures that could be implemented in conjunction with the proposed projects. As discussed above, the proposed projects would result in no significant effects on the transportation system; therefore, no mitigation measures would be required.

Improvement Measure TR-1 (Pedestrians; applies to SFMOMA Expansion). The following sidewalk improvements could be considered:

Third Street Sidewalk Extension. As an improvement measure to enhance the pedestrian environment, the project sponsor should work with MTA and DPW to design and construct a sidewalk extension on Third Street in front of the existing Third Street entrance into SFMOMA. The project sponsor should be required to fund the design and construction of this improvement.

The sidewalk extension should be about 7 feet in width (the parking lane is about 7 feet wide) and about 85 feet in length, and would be centered on the museum entrance (which is aligned with the midblock crosswalk). As part of this improvement, a consolidated 39-foot-wide passenger zone and 20-foot-wide red zone would be provided between the sidewalk extension and Minna Street. A 59-foot-wide passenger zone would be provided south of the sidewalk extension. The 85-foot long sidewalk extension, red zone and two passenger zones would eliminate six of the seven on-street metered parking spaces on Third Street that are adjacent to the project site (i.e., three spaces north of the existing midblock crosswalk and three spaces south of the midblock crosswalk).

On-street parking on both sides of Third Street is currently prohibited during the morning and afternoon commute periods (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.). On the east side of Third Street, the peak period on-street parking prohibition does not result in an additional travel lane since the curb lane is a right-turn only lane between Minna Street and Mission Street, and the bus lane that is adjacent to the parking lane merges to the curb north of Mission Street. Instead, the current parking prohibition reduces conflicts between vehicle parking and the adjacent bus lane during the peak commute periods. During the AM peak period, however, the curb lane functions as a right-turn only lane for drivers destined to the SFMOMA Parking Garage via Minna Street.

The sidewalk extension would not substantially affect traffic operations on Third Street because the curb lane is currently used for on-street parking, and the proposed sidewalk extension would remove conflicts between parking vehicles and the adjacent bus lane. Drivers using the parking lane during the AM peak period when parking prohibitions are in place to access Minna Street would need to remain within the mixed-flow travel lanes, and then merge through the bus lane into the passenger loading/unloading zone at the approach to Minna Street, similar to other right-turn lanes along Third Street. It is anticipated that the sidewalk extension would result in a negligible increase in travel times for those drivers destined to the SFMOMA Parking Garage.

Consolidation and reconfiguration of the passenger zone would also improve pedestrian conditions by providing a longer zone and relocating it away from the pedestrian crosswalk. The sidewalk extension would enhance the pedestrian environment by providing additional sidewalk space to pedestrians traveling along Third Street, pedestrians waiting to cross at the midblock crosswalk by shortening the distance pedestrians have to cross Third Street, and pedestrians congregating in the vicinity of the museum entrance.

Howard Street Sidewalk Extension. As an improvement measure to enhance the pedestrian environment, the project sponsor should work with MTA and DPW to design and construct a sidewalk extension on Howard Street in front of the new entrance into SFMOMA. Since modifications to the Howard Street sidewalk and roadway network are currently being considered as part of the Transit Center District Plan and ENTRIPS, this improvement measure would be revisited by the Planning Department, MTA, and the project sponsor following completion of these studies. If the Planning Department and MTA determine that the sidewalk extension on Howard Street adjacent to the project site is feasible within the future context of Howard Street, it should be implemented by SFMOMA.

The Howard Street sidewalk extension would be in proximity to the proposed Howard Street entrance into the museum. The sidewalk extension should be 7 feet in width (the parking lane is about 7 feet wide) and about 40 feet in length, or as determined by MTA and DPW. Adjacent to the extension would be the proposed passenger loading zone about 50 feet in width. The 40-foot-long sidewalk extension and 50-foot-long passenger loading zone would occupy the 90-foot frontage of the SFMOMA Expansion site on Howard Street. This space is currently the driveway for the existing fire station, as well as three general metered parking spaces, which would be removed. The sidewalk extension would not affect traffic operations on Howard Street, and would reduce conflicts between parking vehicles and the adjacent travel lane.

Improvement Measure TR-2 (Bicycles; applies to Fire Station Relocation and Housing Project). Although the Fire Station Relocation and Housing Project would have a less-than-significant impact on bicyclists at the new fire station, following full occupation of the new fire station, the Planning Department, in consultation with the SFFD and MTA, should periodically monitor bicycle conditions along Folsom Street during testing of emergency equipment. If the Planning Director, or his or her designee, determines that the proposed equipment testing procedures encroach on the bicycle lane and result in bicycle hazards, then the SFFD should consider no longer testing fire equipment on the south side of Folsom Street. Instead, SFFD would utilize an alternative fire equipment testing area on Falmouth Street, which is a location that would not conflict with bicycles.

Improvement Measure TR-3 (Loading; applies to Housing Project). To ensure that residential move-in and move-out activities do not impede traffic flow on Shipley Street, move-in and move-out operations, as well as larger deliveries should be scheduled and coordinated through building management. Building management should require that curb parking spaces on Shipley Street are reserved via the San Francisco Police Department in advance for all move-in and move-out activities.

Improvement Measure TR-4 (Transportation Demand Management (TDM) Plan; applies to SFMOMA Expansion). As an improvement measure to reduce the use of single-occupant vehicles and to increase the use of rideshare, transit, bicycle, and walk modes for employees, volunteers, and visitors, SFMOMA should formalize a TDM Plan that addresses travel to SFMOMA by employees and visitors. The project sponsor should retain the services of a transportation consultant to review existing TDM elements, prepare a TDM Plan, and recommend additional measures for consideration by SFMOMA. As part of the TDM Plan, the consultant could prepare a stand alone summary that could be incorporated into the employee manual, and also enhance the TDM information on the public website to better publicize alternative transportation options to visitors.

Improvement Measure TR-5 (Construction). The following construction period measures could be considered:

Traffic Control Plan for Construction (applies to SFMOMA Expansion). As an improvement measure to reduce potential conflicts between construction activities and pedestrians, transit, and autos at the SFMOMA Expansion site, the contractor should prepare a traffic control plan for project construction. The project sponsor and construction contractor(s) would meet with DPW, MTA, the Fire Department, Muni Operations and other City agencies to coordinate feasible measures to reduce traffic congestion, including temporary transit stop relocations (not anticipated, but if determined necessary) and other measures to reduce potential traffic and transit disruption and pedestrian circulation effects during construction of the SFMOMA Expansion. The contractor would be required to comply with the City of San Francisco's Regulations for Working in San Francisco Streets, which establish rules and permit requirements so that construction activities can be conducted safely and with the least possible interference to pedestrians, bicyclists, transit and vehicular traffic. The traffic control plan would address how passenger loading/unloading, and deliveries and service vehicles would be accommodated at the W Hotel during project construction.

Carpool and Transit Access for Construction Workers (applies to SFMOMA Expansion). As an improvement measure to minimize parking demand associated with construction workers, the construction contractor could be required by the project sponsor to encourage carpooling and transit access to the project sites by construction workers.

Construction Truck Traffic (applies to SFMOMA Expansion). As an improvement measure to minimize construction traffic impacts on Third Street, Minna Street, and Howard Street, and on pedestrian, transit, and traffic operations, the construction contractor could be required to retain San Francisco Police Department traffic control officers during peak construction periods.

Project Construction Updates for Adjacent Businesses and Residents (applies to SFMOMA Expansion and Fire Station Relocation and Housing Project). As an improvement measure to minimize construction impacts on access for nearby institutions and businesses, DPW could require the project sponsor to 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, and lane 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.

Improvement Measure TR-6 (Parking; applies to Housing Project). As an improvement measure to reduce the Housing Project's parking demand and parking shortfall and to encourage use of alternative modes, the developer of the Housing Project at 935 Folsom Street could provide a transportation insert for the move-in packet. This packet could provide information on transit service

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(Muni and BART lines, schedules and fares), information on where FastPasses could be purchased, and information on the 511 Regional Rideshare Program.

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E. NOISE

This section discusses the anticipated noise impacts associated with implementation of the proposed Fire Station Relocation and Housing Project. It also describes existing noise conditions in the vicinity of the project site, describes criteria for determining the significance of noise impacts, presents project characteristics related to noise, and estimates the potential noise effects that would result from development of the Fire Station Relocation and Housing Project, including noise associated with project construction and operation, project-related vehicular traffic, emergency vehicle sirens and horns, and other noise sources. Where appropriate, mitigation measures are identified to reduce project-related noise impacts to a less-than-significant level. This section has been prepared with assistance from the Department of Public Health.

As discussed in the Noise section of the Initial Study (included in Appendix A), the proposed SFMOMA Expansion would not result in a substantial permanent increase in ambient noise levels in the site vicinity, would not expose persons to noise levels in excess of standards established in the local general plan or noise ordinance, would not expose persons to or generate high levels of groundborne vibration or groundborne noise, would not expose persons to high levels of airport-related noise, and would not be substantially affected by existing noise levels with implementation of the specified mitigation measures. In addition, the analysis in the Initial Study found that the Fire Station Relocation and Housing Project would not result in a temporary or periodic (construction-period) increase in ambient noise levels existing without the project with the implementation of the specified mitigation measures. In addition, that project would not expose persons to or generate high levels of groundborne vibration or groundborne noise, and would not expose persons to high levels of airport-related noise. The analysis in this section of the EIR does not include an evaluation of the topics already analyzed in the Initial Study and focuses on the operational period impacts of the Fire Station and Relocation Project.

Setting

This setting section begins with an introduction to several key concepts and terms that are used in evaluating noise. It then explains the various agencies that regulate the noise environment in

San Francisco and summarizes key standards that are applied to proposed development. This setting section concludes with a description of current noise sources that affect the Fire Station Relocation and Housing Project site and the noise conditions that are experienced in the project site vicinity.

Noise Background. Noise is generally defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is the number of complete vibrations or cycles per second of a wave that results in the range of tone from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment, and it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound’s effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effects on adjacent sensitive land uses. Sensitive land uses refers to land uses that contain persons who are particularly sensitive to noise, such as residential uses, hospitals, and schools.

<u>Definition of basic noise terminology and concepts</u>. 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 (or amplitude) of an ambient sound, and the decibel (dB) scale is used to quantify sound intensity. A decibel (dB) is a unit of measurement which indicates the relative intensity of a sound. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect.

Because sound can vary in intensity by over one million times within the range of human hearing, a logarithmic loudness scale[1] is used to keep sound intensity numbers at a convenient and manageable level. Thus, a 10 dB increase in the level of a continuous noise represents a perceived doubling of loudness, while a 20 dB increase is 100 times more intense, and a 30 dB increase is 1,000 times more intense. As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level. Noise levels diminish or attenuate as distance from the source increases based on an inverse square rule, depending on how the noise source is physically configured. The noise level from a single-point source, such as a single piece of construction equipment at ground level, attenuates at a rate of 6 dB for each doubling of distance (between the single-point source of noise and the noise-sensitive receptor of concern). Heavily-traveled roads with few gaps in traffic behave as continuous line sources and attenuate roughly at a rate of 3 dB per doubling of distance.

Since the human ear is not equally sensitive to all pitches (sound frequencies) within the entire spectrum, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity in a process called "A-weighting," expressed as "dBA." The dBA or A-weighted decibel refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies. Table IV.E-1 contains a list of typical acoustical terms and definitions. Table IV.E-2 shows some representative noise sources and their corresponding noise levels in dBA.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. The equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. The predominant rating scales for human communities in the State of California are the L_{eq}, the community noise equivalent level (CNEL), and the day-night average level (L_{dn}), based on A-weighted decibels (dBA). CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10

[1] Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. The logarithmic decibel scale allows an extremely wide range of acoustic energy to be characterized in a manageable notation.

dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and L_{dn} are within 1 dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours. Typical A-weighted sound levels from various sources are described in Table IV.E-2.

Table IV.E-1: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit that denotes the ratio between two quantities proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 decibels to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Sound Exposure Level, SEL	The cumulative sound exposure from a single noise event. Over a stated time period or event, the logarithm of the ratio of a given time integral of squared frequency-weighted sound pressure to the product of the reference sound pressure of 20 micropascals and the reference duration of 1 second.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: *Handbook of Acoustical Measurements and Noise Control,* Harris, C.M., 1998. This document is available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

Table IV.E-2: Typical A-Weighted Sound Levels

Noise Level	Extremes	Home Appliances at 10 feet	Speech at 3 feet	Motor Vehicles at 50 feet	Railroad Operations at 100 feet	General Type of Community Environment
120	Commercial Jet Aircraft at 500 ft					
110				Sirens	Horns	
100				Diesel Truck (Not Muffled)	Horns	
90		Shop Tools	Shout	Diesel Truck (Muffled)	Locomotive at 50 mph; Rail Cars at 50 mph	
80		Vacuum Cleaner	Loud Voice	Automobile at 70 mph	Rail Cars at 50 mph; Locomotive Idling	Major Metropolis (Daytime)
70		Dishwasher	Normal Voice	Automobile at 40 mph		Urban (Daytime)
60		Air Conditioner	Normal Voice (Back to Listener)	Automobile at 20 mph		Suburban (Daytime)
50		Refrigerator				Rural (Daytime)
40						
30						
20						
10						
0	Threshold of Hearing					

Source: Compiled by LSA Associates, Inc., 2009.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of maximum levels denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions, and addresses the annoying aspects of intermittent noise.

Typical sound levels in the noise environment. Noise impacts can be organized into three categories. The first is audible noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 dBA or greater, since, as described earlier, this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1 and 3 dBA. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than 1 dBA that are inaudible to the human ear.

Research on Siren Noise in San Francisco. In 2010, the San Francisco Department of Public Health and the University of California at San Francisco (UCSF) Department of Nursing conducted a study on noise, sirens, and health in the Lower Polk Street neighborhood. The study focused on five sites (four with residential land uses and one with office uses) in the neighborhood where emergency siren noise was measured and recorded. Noise levels were measured using a calibrated noise dosimeter. The measurements were taken from a window at the busiest edge of the building. An audio recorder was also used to identify the source of noise events. In addition, an interview was conducted which collected data from five volunteer participants. The data included household demographics and experiences of traffic noise at their residence.

The study found that at Location 1 (outside of a second story living room window on Polk Street between Bush and Pine Streets) 44 emergency siren events occurred in one day. These events averaged 83.3 dBA with five events in excess of 100 dBA. These noise levels would be the equivalent of shouting at a few feet and capable of inducing physical health effects.[2] The number of emergency vehicle events ranged from four to 34 at the other study locations. The highest average level of noise recorded at all study locations was 86 dBA.

[2] *Report Regarding Emergency Siren Noise*, San Francisco Department of Public Health, October 6, 2010. This document is available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

The study concluded that such levels are capable of causing significant sleep disturbance, annoyance, and stress. Possible solutions identified in the study include: reducing the frequency and level of emergency responses, designing a roadway system to yield an emergency right-of-way, developing a public education program to improve yielding of right-of-way to emergency vehicles, and planning medical facilities and emergency routes to reduce siren exposure. Siren noise in the Lower Polk Neighborhood was identified as a health problem and has generated complaints from residents.

The Lower Polk Street study also identified the limitations of the research. The sample was a convenience sample, based on volunteer participants. Therefore, there is likely selection bias present in the sample, as those that volunteered are most concerned about noise levels. An additional limitation to the study was that the samples were measured from the exterior of windows. Well-insulated windows and walls can substantially decrease interior noise levels. In addition, the Lower Polk Neighborhood experiences a high concentration of requests for emergency services; therefore, most other neighborhoods in the City would not be exposed to such high levels of emergency vehicle-related noise.

Existing Noise Environment. Noise impacts associated with the SFMOMA Expansion were analyzed and addressed in the Initial Study (see Appendix A) and were found to be less than significant. The San Francisco Fire Department Station No. 1 (Fire Station No. 1) would be relocated as part of the project from 676 Howard Street to 935 Folsom Street. The existing building at 935 Folsom Street (formerly used for apparel manufacturing and as a commercial laundry) would be demolished and, in addition to construction of a new fire station fronting Folsom Street, a residential building containing up to 13 units would be constructed on the portion of the site fronting Shipley Street.

<u>Ambient Noise Levels</u>. Ambient noise levels in the vicinity of the Fire Station Relocation and Housing Project site are influenced primarily by traffic along Folsom Street, which is a major easterly one-way thoroughfare that connects the Mission District and the Embarcadero. Noise from traffic on Interstate 80 (I-80) located approximately 630 feet southeast of the Fire Station Relocation and Housing Project site, also contributes to the ambient noise environment. According to the San Francisco City-wide

Noise Map,[3] noise levels along Folsom Street and other local streets in the vicinity of the site range up to 70.0 dBA L_{dn} or greater.

Sensitive Receptors. The Fire Station Relocation and Housing Project site is in a mixed-use urban area containing a variety of building types and uses. Building types include older commercial, mixed residential/commercial, live/work, and industrial structures, as well as newer residential buildings. Nearby land uses include residential; live/work; PDR; hotel; and surface parking uses.

Residential uses in the general two-block area around the project site are predominantly multi-family flats or higher-density buildings, including the lofts at 249 Shipley Street directly to the south of the project site at the intersection of Shipley and Falmouth Streets. In addition, there is a 2-story building immediately to the west of the site across Falmouth Street, with apartments above an adult business. At 955-65 Folsom Street is a 4-story condominium loft building. Mid-rise lofts at 239-250 Clara Street are on the next block south of the project site. On Folsom Street, one block to the east between Third and Fourth Streets, are the Yerba Buena Lofts and the residential building at 829 Folsom Street. On the northeast side of the open vehicle yard is a 4-story structure (located at 917 Folsom Street) that contains a hotel with a bar on the ground floor. There are no schools, hospitals, or convalescent homes in the immediate vicinity of the Fire Station Relocation and Housing Project site.

Regulatory Framework. The following section summarizes the regulatory framework related to noise, including federal, State and San Francisco plans, policies and standards. Regulations regarding construction-period noise-generating activities are summarized here for informational purposes only, because construction-period noise impacts were scoped out of detailed analysis in the Initial Study (see Appendix A).

State Noise Insulation Standards. The State of California has established regulations that help prevent adverse impacts to occupants of buildings located near noise sources. Referred to as the "State Noise Insulation Standard," it requires buildings to meet performance standards through design and/or

[3] *Areas Potentially Requiring Noise Insulations*, San Francisco, City and County of, March, 2009. Website: www.sf-planning.org/index.aspx?page=2426.

building materials that would offset any noise source in the vicinity of the receptor. State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are found in the California Code of Regulations, Title 24 (known as the Building Standards Administrative Code), Part 2 (known as the California Building Code), Appendix Chapters 12 and 12A. 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 noise sources, the noise insulation standards set an interior standard of 45 dBA CNEL in any habitable room with all doors and windows closed. In addition, the standards require preparation of an acoustical analysis demonstrating the manner in which dwelling units have been designed to meet this interior standard, where such units are proposed in an area with exterior noise levels greater than 60 dBA CNEL.

The Governor's Office of Planning and Research (OPR) has established land use compatibility guidelines for determining acceptable noise levels for specified land uses. The City of San Francisco has adopted the OPR's land use compatibility guidelines, as discussed below and shown in Table IV.E-3.

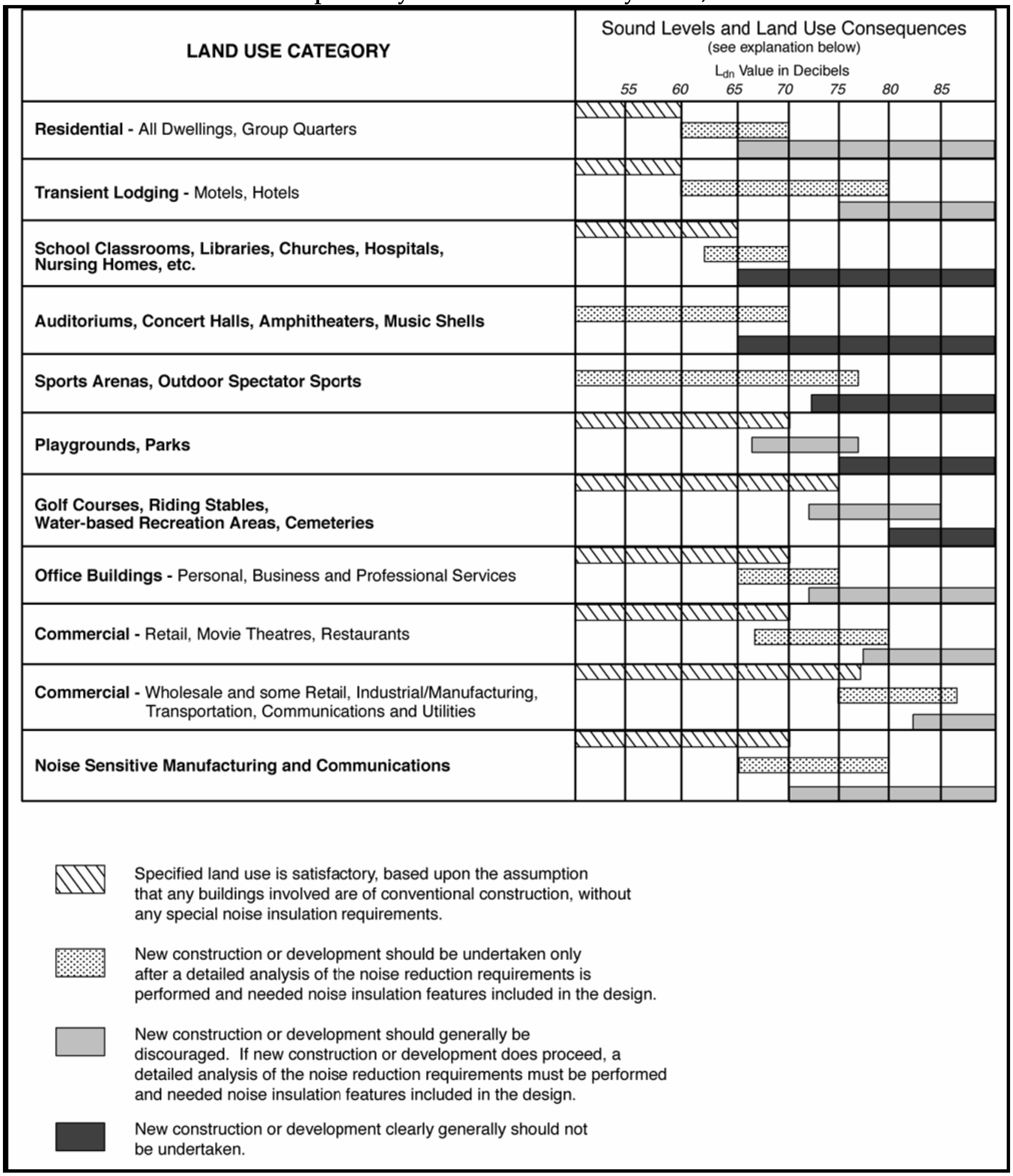
San Francisco General Plan. San Francisco addresses noise policies in the General Plan's Environmental Protection Element.[4] This element includes a Transportation Noise section that provides general guidance for reducing transportation noise through "sound land use planning and transportation planning." It also states "in a fully developed city, such as San Francisco, where land use and circulation patterns are by and large fixed, the ability to reduce the noise impact through a proper relationship of land use and transportation facility location is limited." [5]

The General Plan focuses on the effect of noise on the community due to ground transportation noise sources and establishes the "Land Use Compatibility Chart for Community Noise" for determining

[4] *City of San Francisco General Plan*, San Francisco, City and County of, December 2, 2004.

[5] *San Francisco General Plan, Environmental Protection, Transportation Noise*, San Francisco, City and County of, December 2, 2004.

Table IV.E-3: Land Use Compatibility Chart for Community Noise, dBA



Source: *San Francisco General Plan*, San Francisco, December 2, 2004.

when noise reduction requirements should be analyzed, such as providing sound insulation for affected properties. The standards in the land use compatibility standards for community noise determine the maximum acceptable noise environment for each newly developed land use, and are shown in Table IV.E-3. Although Table IV.E-3 presents a range of noise levels that are considered compatible or incompatible with various land uses, the maximum "satisfactory" noise level is 60 dBA L_{dn} for residential and hotel uses; 65 dBA L_{dn} for schools, classrooms, libraries, churches and hospitals; 70 dBA L_{dn} for playgrounds, parks, offices, retail commercial uses, and noise-sensitive manufacturing/ communication uses; and 77 dBA L_{dn} for other commercial uses such as wholesale, certain retail, industrial/manufacturing, transportation, communications, and utilities uses.

If these uses are proposed to be located in areas with noise levels that exceed these guidelines, a detailed analysis of noise reduction requirements will normally be necessary prior to final building review and approval. Overall, the General Plan recognizes that transportation noise remains a problem and guides the City to manage incompatible transportation noise levels through various transportation noise-related policies (see also Chapter III, Plans and Policies). The City's background noise levels map identifies the Fire Station Relocation and Housing Project site to be exposed to traffic noise levels above 70 dBA. According to the City's General Plan, new development should incorporate noise insulation features if the noise levels exceed the sound level guidelines shown in the land use compatibility chart.

The noise policies of the General Plan also regulate the use of emergency sirens by fire engines. The General Plan states that warbling sirens (i.e., those with multiple frequencies) should be replaced by conventional sirens and measures should be taken to assure that the use of all sirens is restricted to assure the emergency vehicle the right-of-way only in genuine emergencies.

San Francisco Noise Ordinance. The City's noise ordinance regulates construction-related noise. Section 2907 of Article 29 of the Police Code states that it is unlawful for any person to operate any powered construction equipment if the operation of such equipment emits noise in excess of 80 dBA when measured at a distance of 100 feet from such equipment.[6] Construction equipment used in connection with emergency work is exempt. Construction work that creates a noise level greater than 5 dBA of the ambient noise level is prohibited between the hours of 8:00 p.m. and 7:00 a.m. unless a special permit is granted by the City. Noise from emergency vehicle use and operations, including sirens and emergency equipment testing, is exempt from the City's noise ordinance.[7]

Section 2909 of Article 29 of the Police Code establishes stationary source noise limits for residential, commercial, industrial, and public uses. At residential properties, the section prohibits persons from generating noise levels greater than 5 dBA over ambient noise levels outside the property plane, or noise levels greater than 5 dBA at 3 feet from any wall, floor, or ceiling. In addition, fixed noise sources are prohibited from increasing the noise level in a sleeping or living room in a dwelling unit beyond 45 dBA between 10:00 p.m. to 7:00 a.m. or beyond 55 dBA between 7:00 a.m. and 10:00 p.m., with open windows, except where building ventilation allows windows to remain closed. At commercial and industrial properties, the section prohibits persons from generating noise levels greater than 8 dBA over ambient noise levels outside the property plane. At public properties, persons are prohibited from producing noise levels greater than 10 dBA over ambient noise levels at a distance of 25 feet or more, with certain exceptions.

The Fire Station Relocation and Housing Project would also be subject to the following four mitigation measures identified in the Mitigation Monitoring and Reporting Program prepared for the Eastern Neighborhoods Rezoning and Area Plans.[8]

> <u>Mitigation Measure F-3: Interior Noise Levels</u>: For new development including noise-sensitive uses located along streets with noise levels above 60 dBA (L_{dn}), as shown in EIR Figure 18, where such development is not already subject to the California Noise Insulation Standards in Title 24 of the California Code of Regulations, the project sponsor shall conduct a detailed

[6] *Regulation of Noise, Noise Ordinance*. Article 29. San Francisco, 2008.

[7] *Noise Sirens, and Health, Presented by SFDPH to Lower Polk Street Neighbors, San Francisco Department of Public Health, October 7, 2008*. This document is available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

[8] *Mitigation Monitoring and Reporting Program, Eastern Neighborhoods Rezoning and Area Plans*, San Francisco Planning Department, July 10, 2008. This document is available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

analysis of noise reduction requirements. Such analysis shall be conducted by person(s) qualified in acoustical analysis and/or engineering. Noise insulation features identified and recommended by the analysis shall be included in the design, as specified in the San Francisco General Plan Land Use Compatibility Guidelines for Community Noise to reduce potential interior noise levels to the maximum extent feasible.

Mitigation Measure F-4: Siting of Noise-Sensitive Uses: To reduce potential conflicts between existing noise-generating uses and new sensitive receptors, for new development including noise-sensitive uses, the Planning Department shall require the preparation of an analysis that includes, at a minimum, a site survey to identify potential noise-generating uses within 900 feet of, and that have a direct line-of-sight to, the project site, and including at least one 24-hour noise measurement (with maximum noise level readings taken at least every 15 minutes), prior to the first project approval action. The analysis shall be prepared by persons qualified in acoustical analysis and/or engineering and shall demonstrate with reasonable certainty that Title 24 standards, where applicable, can be met, and that there are no particular circumstances about the proposed project site that appear to warrant heightened concern about noise levels in the vicinity. Should such concerns be present, the Department may require the completion of a detailed noise assessment by person(s) qualified in acoustical analysis and/or engineering 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.

Mitigation Measure F-5: Siting of Noise-Generating Uses: To reduce potential conflicts between existing sensitive receptors and new noise-generating uses, for new development including commercial, industrial or other uses that would be expected to generate noise levels in excess of ambient noise, either short-term, at nighttime, or as a 24-hour average, in the proposed project site vicinity, the Planning Department shall require the preparation of an analysis that includes, at a minimum, a site survey to identify potential noise-sensitive uses within 900 feet of, and that have a direct line-of-sight to, the project site, and including at least one 24-hour noise measurement (with maximum noise level readings taken at least every 15 minutes), prior to the first project approval action. The analysis shall be prepared by persons qualified in acoustical analysis and/or engineering and shall demonstrate with reasonable certainty that the proposed use would comply with the use compatibility requirements in the General Plan and in Police Code Section 2909, would not adversely affect nearby noise-sensitive uses, and that there are no particular circumstances about the proposed project site that appear to warrant heightened concern about noise levels that would be generated by the proposed use. Should such concerns be present, the Department may require the completion of a detailed noise assessment by person(s) qualified in acoustical analysis and/or engineering prior to the first project approval action.

Mitigation Measure F-6: Open Space in Noisy Environments: To minimize effects on development in noisy areas, for new development including noise-sensitive uses, the Planning Department shall, through its building permit review process, in conjunction with noise analysis required pursuant to Mitigation Measure F-4, require that open space required under the Planning Code for such uses be protected, to the maximum feasible extent, from existing ambient noise levels that could prove annoying or disruptive to users of the open space. Implementation of this measure could involve, among other things, site design that uses the building itself to shield on-site open space from the greatest noise sources, construction of noise barriers between noise sources and open space, and appropriate use of both common and private open space in multi-family dwellings, and implementation would also be undertaken consistent with other principles of urban design.

Impacts

This section analyzes the potential noise impacts that could result from implementation of the proposed Fire Station Relocation and Housing Project. This section begins with a list of significance criteria, which establish the thresholds for determining whether a project impact is significant. The latter part of this section presents the potential noise impacts associated with the project. Mitigation measures are identified, as appropriate.

Significance Criteria. The proposed Fire Station Relocation and Housing Project would have a significant effect on noise if it would:

- Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project; and
- Be substantially affected by existing noise levels.

Methods

<u>Use of Existing Data</u>
Ambient noise levels in the vicinity of the Fire Station Relocation and Housing Project site are influenced primarily by traffic along Folsom Street, which is a major easterly one-way thoroughfare that connects the Mission District and the Embarcadero. According to the San Francisco City-wide Noise Map,[9] noise levels along Folsom Street and local streets in the vicinity of the site range up to 70 dBA L_{dn} or greater. According to the City's land use compatibility standards, the maximum satisfactory noise level for new residential uses without the need to incorporate noise insulation into a project is 60 dBA L_{dn}. The guidelines state that new residential development should be generally discouraged at noise levels 65 dBA L_{dn} and above (new residential development in areas subject to noise levels between 60 and 70 dBA L_{dn} should be undertaken "only after a detailed analysis of the noise mitigation requirements is made and needed noise insulation features included in the design").

[9] *Areas Potentially Requiring Noise Insulations*, San Francisco, City and County of, March, 2009. Website: <u>www.sf-planning.org/index.aspx?page=2426</u>.

Single-Event Noises vs. Ambient Noise Levels

Ambient noise levels are the all-encompassing noise associated with a given environment at a specified time, comprising the sum of the sound energy from many sources at many directions, near and far. As noted in the setting section, there are many ways to rate noise for various time periods. The rating scale used in the City's land use compatibility standards is the day-night average level (L_{dn}) based on A-weighted decibels (dBA). L_{dn} is the time-varying noise over a 24-hour period, with a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). Other noise rating scales of importance when assessing the annoyance factor include the equivalent continuous sound level (L_{eq}), which is the total sound energy of time-varying noise over a sample period, and the maximum noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period.

Single-event noise sources that result in exceedances of the background ambient noise levels, such as the sounding of emergency vehicle sirens, can result in levels of annoyance and sleep disturbance. Such noise levels are typically measured in terms of the average noise level L_{eq} over their period of occurrence or in terms of the maximum noise level L_{max}. Noise from emergency vehicle use and operations, including sirens and emergency vehicle testing, is exempt from the City's Noise Ordinance and General Plan noise requirements. The analysis of this noise source is therefore provided for informational purposes.

Impacts. The following section presents a discussion of the impacts related to noise that could result from implementation of the proposed Fire Station Relocation and Housing Project. Where appropriate, mitigation measures are identified in order to reduce project-related noise impacts to less-than-significant levels.

Impact NO-1: **Noise from both emergency and non-emergency vehicle operations and emergency equipment testing associated with the Fire Station Relocation and Housing Project would not expose persons to or generate noise levels in excess of applicable standards established in the local general plan or noise ordinance, or applicable standards of other agencies, or result in a**

substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. (Less Than Significant)

Traffic noise impacts were evaluated qualitatively using the project-related trip generation numbers from the transportation study prepared for the project (and summarized in Section IV.D, Transportation and Circulation). Impacts were determined based on the significance criteria stated above. An increase of 3 dBA in noise is considered to be the minimum change in environmental noise perceptible to the human ear; therefore, for purposes of this analysis, a 3 dBA or greater increase in traffic noise would be considered a significant impact. In general, traffic noise increases of less than 3 dBA are not perceptible to most people, while a 5 dBA increase is readily noticeable.[10] A 3 dBA increase in noise would only occur if the project would cause traffic volumes to double (a 100 percent increase) compared to existing traffic volumes. Project-related traffic noise levels were also evaluated based on the established land use compatibility standards.

<u>Non-Emergency Vehicle Operational Noise Impacts</u>

Based on the transportation study prepared for the project, the fire station relocation would generate 170 daily vehicle trips and the housing project would generate 130 daily vehicle trips, for a combined total of 300 daily trips. These trips do not include emergency responses, which are discussed below. This small number of daily project vehicle trips would be less than 10 percent of the existing trips on surrounding roadways and would thus not result in a perceptible increase in traffic noise on roadways in the project vicinity (traffic would need to double in volume to result in a perceptible increase in noise). As development of the Fire Station Relocation and Housing Project would not create a significant increase in non-emergency vehicle traffic noise, no mitigation would be required.

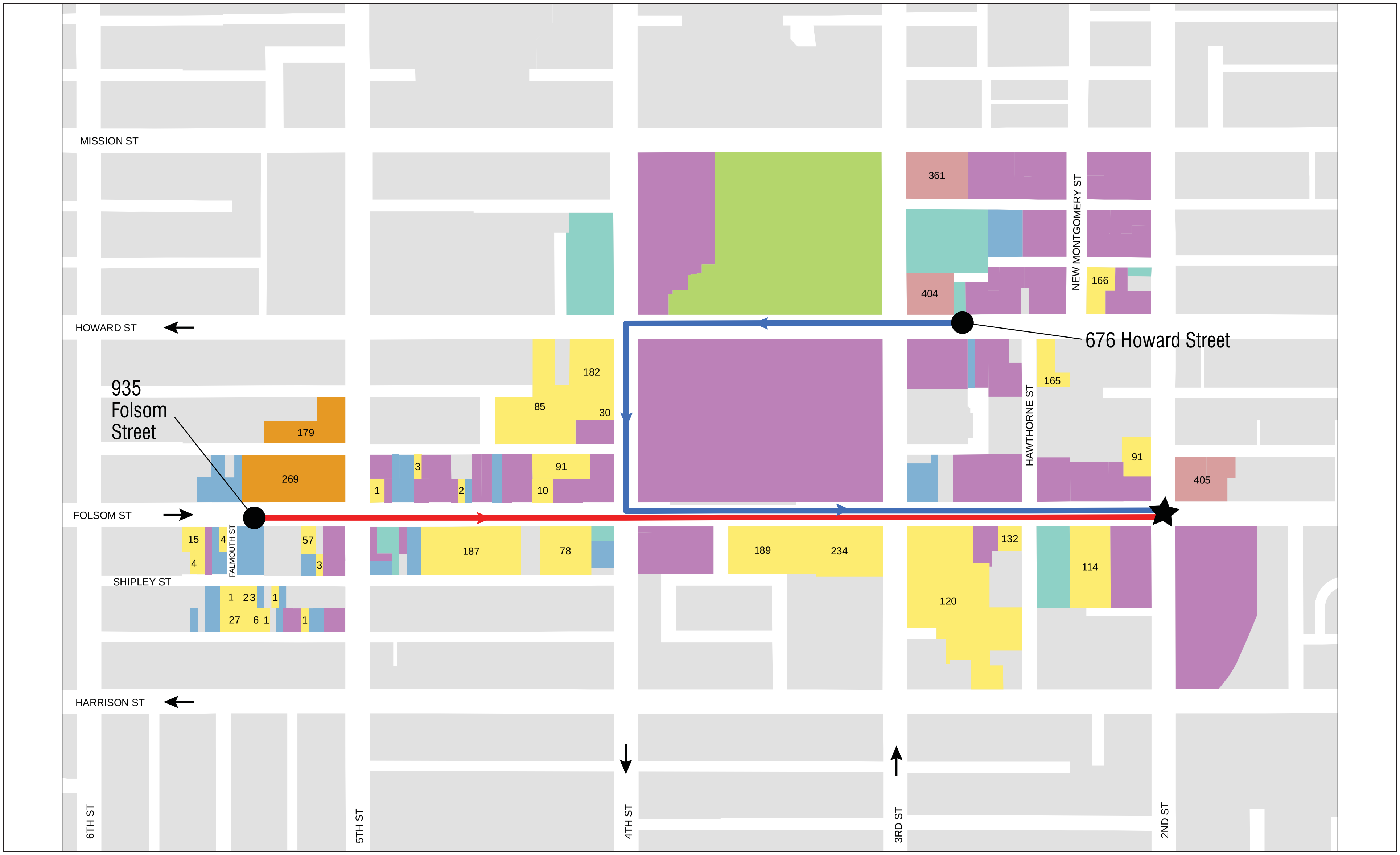
[10] *Technical Noise Supplement*, California Department of Transportation Environmental Program, Environmental Engineering – Noise Air Quality, and Hazardous Waste Management Office, October, 1998. This document is available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

Emergency Vehicle Operational Noise Impacts

As noted previously, noise from emergency vehicle use and operations, including sirens and emergency equipment testing, is exempt from the City's Noise Ordinance. Therefore, noise from emergency vehicle operations and equipment testing of the Fire Station Relocation and Housing Project would not expose persons to or generate noise levels in excess of applicable standards established by the City or other agencies. The following discussion describes potential less-than-significant effects of emergency vehicle use and operations on permanent ambient noise levels.

New emergency vehicle routes from the relocated fire station could change the exposure patterns of sensitive receptors to emergency vehicle-related noise compared to existing routes from Fire Station No. 1. An analysis was undertaken to determine whether new routes would be likely to expose more residents to high noise levels compared to existing routes. As part of this evaluation, before- and after-project implementation emergency vehicle routes to four potential representative destinations were plotted, and residential uses were identified around each of these routes. The four representative destinations are: 1) Second and Market Streets; 2) Second and Folsom Streets; 3) Fifth and Folsom Streets; and 4) Sixth and Market Streets. Routes to each of these destinations (from the existing Fire Station No. 1 at 676 Howard Street and the future proposed fire station at 935 Folsom Street) are shown in Figures IV.E-1 through IV.E-4. These figures also show the number of residential units along each of the routes. Emergency responses to the four representative destinations were also evaluated as part of the project traffic analysis to determine whether the relocation of Fire Station No. 1 would change emergency response times. Please refer to Section IV.D, Transportation and Circulation, for additional detail.

It must be emphasized that the routes shown in Figures IV.E-1 through IV.E-4 are representative of the routes taken by the San Francisco Fire Department (SFFD) to specific destinations, and are not necessarily the exact routes that would be taken by the SFFD to the specified destination. On a day-to-day basis, customized routes to destinations are developed at the time the SFFD receives an emergency call, based on local traffic conditions and other considerations. Although the four destinations are representative of areas with a high demand for SFFD services, calls requesting



Land Use

91 Residential (With Units)
91 Residential Entitled (Unbuilt)
91 Visitor-serving Uses Including Hotels (With Rooms)
Example Route, Existing
Example Route, Future
Cultural, Institutional, Educational, Medical
Production, Distribution, Repair
Open Space
Commercial
Origin
Destination

SOURCE: LEDDY MAYTUM STACY ARCHITECTS, 2011.

FIGURE IV.E-1

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Representative Emergency Routes – Second and Folsom Streets

Land Use

91 Residential (With Units)
91 Residential Entitled (Unbuilt)
91 Visitor-serving Uses Including Hotels (With Rooms)
Example Route, Existing
Example Route, Future
Cultural, Institutional, Educational, Medical
Production, Distribution, Repair
Open Space
Commercial
Origin
Destination

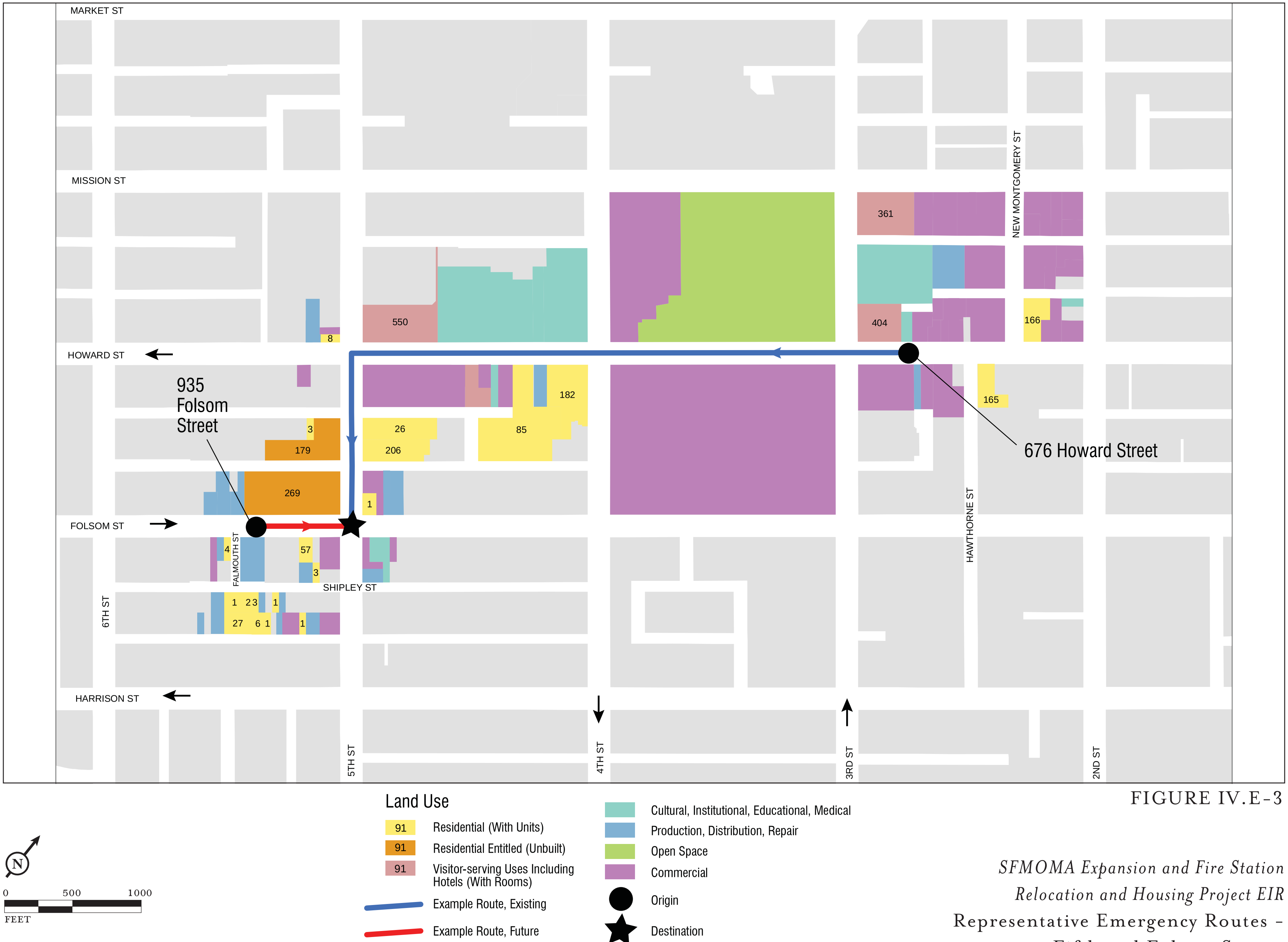
0 500 1000
FEET

SOURCE: LEDDY MAYTUM STACY ARCHITECTS, 2011.

FIGURE IV.E-2

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Representative Emergency Routes – Second and Market Streets



SOURCE: LEDDY MAYTUM STACY ARCHITECTS, 2011.

FIGURE IV.E-3

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Representative Emergency Routes – Fifth and Folsom Streets

Land Use

- 91 Residential (With Units)
- 91 Residential Entitled (Unbuilt)
- 91 Visitor-serving Uses Including Hotels (With Rooms)
- Example Route, Existing
- Example Route, Future
- Cultural, Institutional, Educational, Medical
- Production, Distribution, Repair
- Open Space
- Commercial
- Origin
- Destination

N

0 500 1000
FEET

SOURCE: LEDDY MAYTUM STACY ARCHITECTS, 2011.

FIGURE IV.E-4

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Representative Emergency Routes – Sixth and Market Streets emergency service occur throughout (and beyond) Fire Station No. 1's primary response area. In addition, the sirens and horns used by the SFFD are used on an as-needed basis; thus emergency vehicle-related noise patterns would not be homogeneous along the representative routes. Therefore, this analysis has been undertaken for illustrative purposes only, and is not intended to definitively quantify the numbers of residents exposed to SFFD-related noise under existing and project conditions. Please refer to Section IV.I, Public Services, for an evaluation of the fire station relocation on emergency response services.

A comparison of the number of residents that would be exposed to high emergency vehicle noise levels along routes to each of the four representative destinations under existing and project conditions is shown in Table IV.E-4. The number of residential units along each route was tallied, and then multiplied by 1.8 persons (the average household size in the Census Tracts covering the routes).[11] For the purpose of this analysis, hotels units located along these representative response routes are also included in the tallies of residential units. The total number of residential and transient lodging units was used in order to provide a conservative analysis of the total number of persons who could be exposed to high emergency vehicle noise levels. By including both the residential and transient lodging units in the tallies for the response routes from both points of origin, an equivalent comparison can be made of the number of persons affected by emergency vehicle-related noise under baseline (existing) and project conditions.

Table IV.E-4: Potential Exposure to Emergency Vehicle Noise

Representative Destination	Existing Conditions (Number of Residents/ Number of Residential Units)	Project Conditions (Number of Residents/ Number of Residential Units)
Second/Folsom Streets	3,897/2,165	3,582/1,990
Second/Market Streets	4,572/2,540	3,924/2,180
Fifth/Folsom Streets	3,551/1,973	601/334
Sixth/Market Streets	5,512/3,062	4,108/2,282
TOTAL	**17,532/9,740**	**12,215/6,786**

Source: San Francisco Planning Department and LSA Associates, Inc., 2011.

[11] Average Household Size is 1.8 based on 2010 Census Block Group 1, Census Tracts 178.01, 178.02, and 615.

As noted previously, noise from emergency vehicle use and operations, including sirens and emergency equipment testing, is exempt from the City's Noise Ordinance. However, the illustrative analysis summarized in Table IV.E-4 suggests that the number of residents along the representative routes that would be affected by high levels of emergency vehicle noise would remain roughly the same or be reduced under project conditions (when Fire Station No. 1 relocates to 935 Folsom Street). As discussed in Section IV.D, Transportation and Circulation, response times to the representative destinations would generally be reduced, on average, with relocation of the fire station. Therefore, the duration of siren and horn use would also be expected to decrease with relocation of the fire station.

The degree to which residential units along emergency access routes could be exposed to high noise levels, based on the insulative quality of building facades, could also change as a result of the proposed projects. The sound- insulating effectiveness of a single wall is dependent on both weight and on the level of effective sealing of any wall openings (such as windows and doors); there is a gain of about 5 dB in sound insulation or transmission loss for each doubling of the mass of a wall. Based on the U.S. EPA's Protective Noise Levels,[12] with a combination of walls, doors, and windows, standard construction for northern California buildings built to late 20th century residential building standards provides more than 25 dBA in exterior-to-interior noise reduction with windows closed and 15 dBA or more noise reduction with windows open. Buildings built prior to the mid 20th century would be likely, on average, to realize smaller exterior-to-interior noise reductions.

For illustrative purposes, the sound-reducing qualities (and potential interior exposure to high noise levels associated with emergency vehicles) of two representative buildings in the vicinity of the Fire Station Relocation and Housing Project site are examined: 1) an early 20th century 4-story brick mixed-use building, such as the one located at the southeast quadrant of Sixth and Howard Streets and 2) a late 20th century 7-story residential building, such as the one located at the northwest quadrant of Sixth and Tehama Streets.

[12] EPA 550/9-79-100, November, 1978.

Older structures similar to the building at Sixth and Howard Streets that may have only single-pane windows with metal frames could be expected to provide 5 dBA less in exterior-to-interior noise reduction (i.e., noise would be reduced by a total of 20 dBA) with windows closed. Any upgrades in sealing around wall openings (such as windows and doors) or any wall assembly upgrades (such as added insulation or double-pane windows) would be expected to increase this noise reduction capability to comparable levels of performance to structures built after the mid 20th century. Structures built after the mid 20th century, similar to the late 20th century structure located at Sixth and Tehama Streets, would be expected to provide more than 25 dBA in exterior-to-interior noise reduction with windows closed. It should be noted that grants (to private property owners) are available through the Redevelopment Agency for façade improvements, including window replacement, for buildings in the Sixth Street corridor (please refer to Chapter III, Plans and Policies, for a discussion of other activities associated with the South of Market Redevelopment Plan). Buildings with ground-floor retail uses receive priority in the awarding of grants. As an example of one grant program, the Sixth Street Economic Revitalization Program offers matching grants and free architectural services to Sixth Street property and business owners to improve the facades and interiors of their buildings.

As noted previously, the 2010 study on noise, sirens, and health in the Lower Polk Street neighborhood conducted by the San Francisco Department of Public Health and the UCSF Department of Nursing indicated that the highest average level of noise recorded at all study locations was 86 dBA. Although the study does not specify the noise metric, it can reasonably be assumed these measurements are in terms of L_{max}. As was noted in the report, these noise levels would be the equivalent of shouting at a few feet and capable of inducing significant sleep disturbance, annoyance and stress.[13]

However, a noted limitation to the study is that the noise levels were measured from the exterior of windows. Well-insulated windows and walls can substantially reduce interior noise levels. Assuming insulative qualities for the types of buildings described above, residential buildings built in the early 20th century could experience noise levels of up to 66 dBA L_{max} from emergency vehicle siren noise in

[13] *Report Regarding Emergency Siren Noise*, San Francisco Department of Public Health, October 6, 2010. This document is available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

rooms with exterior walls facing the street. Buildings built in the later half of the 20th century would be expected to experience noise levels of up to 61 dBA L_{max} due to emergency vehicle siren noise in rooms with exterior walls facing the street. Rooms that do not front the street where emergency vehicular noise could occur would be expected to experience a minimum of 5 to 10 dBA in further reduction in noise levels due to building shielding and/or attenuation from interior walls and distance from the source. Thus noise levels from siren noise sources would be expected to range from 56 dBA to 61 dBA L_{max} in rooms that do not front the street in early 20th century structures of the type discussed above; noise levels would be expected to range from 51 dBA to 56 dBA L_{max} in rooms that do not front the street for late 20th century structures described above.

The San Francisco Controller's Office has identified a series of recommendations that would reduce residential noise exposures to emergency vehicle noise sources. [14] These recommendations, listed below, would be expected to reduce the number of responses and/or the level of response, thus reducing siren noise exposure.

- Remove street alarm boxes, and install false alarm deterrents on any boxes that remain;
- Decrease response to street alarm boxes by sending only a medic unit rather than full suppression resources;
- Require commercial alarm verification;
- Improve call triage and Emergency Communications Department systems to reduce Code 3 dispatches (i.e., responses requiring the use of sirens and flashing lights); and
- Change the required number of Emergency Medical Technicians (EMTs) or paramedics for different types of medical calls, based in part on reduced number of Code 3 responses.

The SFFD is actively seeking to reduce residential noise exposures to emergency vehicle-related noise. According to the DPH report on siren noise impacts on communities in the Polk and

[14] *A Review of San Francisco's Fire and EMS Functions*, San Francisco, City and County, Office of the Controller, April 28, 2004. Website: www.sfcontroller.org/index.aspx?page=122.

Tenderloin Areas,[15] GPS-based signalization control systems (similar to the one that was installed on a pilot section of Polk and Post Streets) are capable of satellite identification of multiple emergency vehicles and regulating stop signals. Such a system permits the clearance of intersections and the free flow of emergency vehicles, and would be expected to result in less need to use sirens and air horns. The implementation of planned signal preemption at Fifth/Folsom and Sixth/Folsom Streets as part of the proposed Fire Station Relocation and Housing Project would tend to further improve SFFD-related noise levels, beyond potential improvements occurring with respect to relocation of Fire Station No. 1.

Therefore, based on the above analysis, it is expected the number of residents along the representative routes that would be affected by high levels of emergency vehicle noise would remain roughly the same or be reduced under project conditions. In addition, with anticipated improved response times to representative destinations, the duration of siren and horn use would also be expected to decrease with relocation of the fire station.

Reductions in noise levels would also be expected to occur as a result of the proposed traffic signal preemption system that would be linked to the nearby intersections of Fifth/Folsom Streets and Sixth/Folsom Streets (which would facilitate the movement of emergency vehicles through those intersections and could reduce the duration of siren and horn use). A traffic signal preemption system is a traffic control system to improve emergency response times and traffic safety (and reduce the use of emergency vehicle horns and sirens) by temporarily overriding signalized intersections to benefit emergency vehicles. In general, traffic signal preemption provides an emergency vehicle the ability to preempt a traffic signal in order to have the "green" light in the direction of the responding vehicle. The signal would preempt to green for the direction of the emergency vehicle, and would hold red in all other directions. Should Folsom Street become a two-way street, the traffic preemption equipment would be adjusted to hold to red at the intersections of Fifth/Folsom Streets and Sixth/Folsom Streets until the emergency vehicle clears one of the intersections. Please refer to Chapter II, Project Description, for additional information about the proposed traffic signal preemption system.

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[15] City and County of San Francisco Department of Public Health, 2010. *Report Regarding Emergency Siren Noise*. October 6.

However, even with the implementation of signal preemption, some use of sirens and horns would be necessary for safe emergency vehicle operations.

SFFD operational activities would also include the testing of equipment, such as starting and running the fire trucks, chain saws, "jaws of life," portable generators, and other equipment; checking hoses; and raising ladders, for a period of time each morning between approximately 8:45 and 9:30 a.m. on Folsom Street. Testing of the ladder truck would occur on Falmouth Street. Similar testing of emergency equipment occurs every day at approximately the same time at the current location of Fire Station No. 1 at 676 Howard Street and at every other fire station in the City.[16]

On June 24, 2011, the SFFD staged equipment testing at 935 Folsom Street, and noise levels were measured during the test.[17] The ambient noise level along Folsom Street was measured at 72 dBA, and the ambient noise level along Shipley Street was measured at 50 to 55 dBA. Emergency equipment testing creates maximum noise events that exceed ambient noise levels for short periods of time. The equipment testing generated maximum noise levels at the 900 Folsom Street mixed-use project site (across Folsom Street from the Fire Station Relocation and Housing Project site) of approximately 85 dBA and maximum noise levels at 240 Shipley Street (to the south of the site) of approximately 75 dBA. The effect of the emergency equipment testing on L_{eq} and L_{dn} noise levels was also calculated. At 900 Folsom Street, the L_{eq} during the 1-hour period when equipment testing occurred increased from 70 dBA to 72 dBA and the L_{dn} remained unchanged. At 240 Shipley Street, the L_{eq} during the 1-hour period when equipment testing occurred increased from 54 dBA to 58 dBA and the L_{dn} remained unchanged. Accordingly, because emergency equipment testing would be temporary, would not result in a substantial permanent increase in ambient noise levels, and because such noise is exempt from the City's Noise Ordinance, the impact of emergency equipment testing on noise would be considered less than significant.

[16] Personal communication with Thomas Doudiet, Assistant Deputy Chief, San Francisco Fire Department, May 6, 2011. This document is available for review at the Planning Department in Case File No. 2010.0275E.

[17] *935 Folsom Street, SFFD Apparatus Acoustical Measurement Results*, Charles M. Salter Associates, Inc., June 29, 2011. This document is available at the Planning Department in Case File No. 2010.0275E.

<u>Impact NO-2</u>: Noise from stationary sources associated with the Fire Station Relocation and Housing Project 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 Incorporated)

The proposed project would expose a new noise-sensitive use, the proposed housing project, to existing stationary noise sources, including mechanical equipment (such as an emergency generator), parking lot activities, and internal fire station alarms. The project would introduce additional stationary noise sources to the noise environment, including building heating, ventilation, and air conditioning (HVAC) systems and a backup generator, as well as regular testing of equipment.

New mechanical devices associated with building HVAC systems and a backup generator would be installed as part of construction of the Fire Station Relocation and Housing Project. The operation of this equipment would be subject to Section 2909 of Article 29 (the Noise Ordinance) of the Police Code, which limits noise from building operations. Standard design features (e.g., installation of relatively quiet models, orientation or shielding to protect sensitive uses, installation within an enclosure) are available to ensure that such equipment would not have a significant noise effect. Therefore, with implementation of Mitigation Measure NO-2, below, requiring incorporation of the above-mentioned design features, this impact would be reduced to a less-than-significant level.

Other noise effects related to project operations, such as project-related deliveries and parking lot activity would be similar to existing noise levels from current activities around the project site. Because the site is located in an urban environment with high traffic volumes along Folsom Street, other types of project-related activities (i.e., deliveries and parking lot activity) associated with the project would not be expected to result in a significant change in ambient noise levels. However, these operational noise sources could potentially affect the sensitive receptors of the housing project and existing residential uses in the area. Implementation of Mitigation Measure NO-2 would reduce this impact to a less-than-significant level.

Mitigation Measure NO-2: The project sponsor shall incorporate standard industrial noise control measures for stationary equipment. Such measures may include enclosing equipment in sound- attenuating structures, using buildings to shield these noise sources from sensitive receptors, or mounting equipment on resilient pads to reduce both groundborne and airborne vibration noises. The project sponsor shall adopt noise performance standards to ensure that operational noise from stationary sources would not exceed noise guidelines set forth in the Noise Ordinance for fixed source noise level standards. The project sponsor shall use standard design features/approaches, including installation of relatively quiet models of mechanical equipment, installation of exhaust silencers, orientation or shielding to protect sensitive uses, and installation within enclosures when necessary to reduce stationary, or fixed source, noise levels to below the established threshold when measured at the property line of the nearest affected sensitive receptor. In addition, once design plans have been finalized, the project sponsor shall prepare a detailed final acoustical analysis report with building design noise reduction requirements that would maintain acceptable interior noise levels and that would reduce stationary noise impacts to a less-than-significant level. This report shall be submitted to the Department of Building Inspection (DBI) prior to issuance of a building permit.

Impact NO-3: Residential uses constructed as part of the Fire Station Relocation and Housing Project would be substantially affected by existing traffic noise levels. (Less Than Significant With Mitigation Incorporated)

Although the proposed Fire Station Relocation and Housing Project would not result in a substantial permanent increase in project-related traffic noise volumes, the project would be required to comply with the City's land use compatibility standards for proposed new development. According to the San Francisco City-wide Noise Map,[18] noise levels along Shipley Street adjacent to the proposed Fire Station Relocation and Housing Project site range up to 65.0 dBA L_{dn}. According to the City's land use compatibility standards, the maximum satisfactory noise level for new residential uses without the need to incorporate noise insulation into a project is 60 dBA L_{dn}. The guidelines state that new

[18] *Areas Potentially Requiring Noise Insulations*, San Francisco, City and County of, March, 2009. Website: www.sf-planning.org/index.aspx?page=2426.

residential development should be generally discouraged at noise levels 65 dBA L_{dn} and above (new residential development in areas subject to noise levels between 60 and 70 dBA L_{dn} should be undertaken "only after a detailed analysis of the noise mitigation requirements is made and needed noise insulation features included in the design").

Therefore, mitigation would be required to reduce noise impacts on sensitive receptors within the proposed residential development. Noise impacts on the proposed housing project's outdoor open space (which has not yet been designed, but was analyzed at a conceptual level) are discussed in the Noise section of the Initial Study (included in Appendix A); mitigation measures are identified that would reduce such impacts to a less-than-significant level. For ambient noise levels that range from 60 dBA L_{dn} to 70 dBA $L_{dn,}$ San Francisco's land use compatibility standards for new residential development require an analysis of how building design would reduce interior noise to 45 dBA L_{dn}. Based on the EPA's Protective Noise Levels,[19] with a combination of walls, doors, and windows, standard construction for northern California buildings built to residential standards would provide more than 25 dBA in exterior-to-interior noise reduction with windows closed and 15 dBA or more with windows open. With windows open, rooms within 50 feet of the outermost travel lane of Shipley Street would not meet the interior noise standard of 45 dBA L_{dn} for residential land uses (i.e., 65 dBA – 15 dBA = 50 dBA). As a result, an alternative form of ventilation, such as air conditioning or passive ventilation systems, would be required to ensure that windows could remain closed for a prolonged period of time. With windows closed, interior noise levels would meet the 45 dBA L_{dn} interior noise standard (i.e., 65 dBA – 25 dBA = 40 dBA). Therefore, the project sponsor would be required to include an alternative form of ventilation within the proposed residential project, such as air conditioning or passive ventilation systems, to ensure that windows can remain closed for a prolonged period of time. Implementation of the following mitigation measure would reduce the impact of existing noise levels on the proposed multifamily residential project to a less-than-significant level.

[19] EPA 550/9-79-100, November, 1978.

Mitigation Measure NO-3: The project sponsor shall implement the following mitigation measures from the Mitigation Monitoring and Reporting Program prepared for the Eastern Neighborhoods Rezoning and Area Plans:[20] Mitigation Measures F-3 (Interior Noise Levels); F-4 (Siting of Noise-Sensitive Uses); and F-6 (Open Space in Noisy Environments). In particular, the project sponsor shall prepare a detailed final acoustical analysis report with building design noise reduction requirements, once design plans have been finalized, to maintain acceptable interior noise levels, and subsequently include appropriate noise insulation features in the proposed design of the multifamily residential project. Such features may include the incorporation of alternative ventilation systems, such as air conditioning or passive ventilation, to permit windows to remain closed for prolonged periods of time. Any passive ventilation systems must include appropriate noise insulation features. This report shall be submitted to the DBI prior to issuance of a building permit.

Impact NO-4: The Fire Station Relocation and Housing Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the site would not result in potentially significant cumulative noise impacts. (Less Than Significant)

Construction activity in the vicinity of the Fire Station Relocation and Housing Project site, including demolition, excavation, and building construction activities, could occur in conjunction with other planned and foreseeable projects. However, such activities would be conducted in compliance with the San Francisco Noise Ordinance, which would reduce adverse effects to noise levels. Therefore, the impacts of the Fire Station Relocation and Housing Project on cumulative construction-related noise levels would not be considered significant.

As discussed in the impact section above, the proposed Fire Station Relocation and Housing Project would result in less-than-significant impacts related to stationary noise, with implementation of the identified mitigation measures. Prior analysis presented in the Eastern Neighborhoods Rezoning and

[20] *Mitigation Monitoring and Reporting Program, Eastern Neighborhoods Rezoning and Area Plans*, San Francisco Planning Department, July 10, 2008. This document is available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

Area Plan Draft EIR considered future noise impacts related to stationary noise sources. This analysis concluded that development related to the Eastern Neighborhoods program would increase noise from stationary sources, but not to the extent that it would result in significant noise impacts. As with the proposed Fire Station Relocation and Housing Project, all of the cumulative projects (including those undertaken as part of the Eastern Neighborhoods program) would be expected to include standard mitigation measures related to incorporation of appropriate noise insulation design features (e.g., installation of relatively quiet models of mechanical equipment, orientation or shielding to protect sensitive uses, and installation within an enclosure) into their respective project designs so as to comply with the City's Noise Ordinance, which would ensure that noise impacts from stationary and operational sources would be less than significant. These measures would ensure that noise impacts from stationary and operational noise sources as a result of these future cumulative projects, in combination with the proposed project, would be less-than-significant.

As discussed in the impacts section above, the proposed Fire Station Relocation and Housing Project would result in less-than-significant impacts related to non-emergency traffic noise and emergency vehicle siren noise. It is reasonably anticipated that traffic related to implementation of the proposed project would remain the same under future conditions, as is projected under existing-plus-project conditions, and would thus make a correspondingly less-than-considerable contribution to future ambient noise levels. Prior analysis presented in the Eastern Neighborhoods Rezoning and Area Plan Draft EIR considered future traffic noise conditions. That analysis concluded that development related to the Eastern Neighborhoods program would incrementally increase future traffic-generated noise levels; however, with incorporation of mitigation measures,[21] traffic noise impacts would be reduced to less-than-significant levels. Project-related emergency vehicle noise would similarly not result in a cumulatively considerable increase in ambient noise levels in the vicinity of the project sites since the projects involve relocating an existing and operational fire station. Because a fire station serving the area is currently operational, and overall demand for emergency services is not expected to substantially increase with implementation of the proposed project projects, no cumulatively considerable increase in siren noise would occur as a result of project implementation. Overall,

[21] *Eastern Neighborhoods Rezoning and Area Plan Draft EIR*, San Francisco Planning Department, Case No 2004.0160E, Chapter V, Mitigation Measures F-3 to F-6. Website: www.sfgov.org/site/planning_index.asp?id=65696

it is expected that the cumulative projects, in combination with the SFMOMA Expansion and Fire Station Relocation and Housing Project, would not result in cumulatively considerable noise impacts.

F. AIR QUALITY

This section discusses the anticipated effects of the proposed SFMOMA Expansion and Fire Station Relocation and Housing Project on air quality in the region. The analysis in this section is based on methodologies, assumptions, and significance thresholds recommended in the recently adopted air quality assessment guidelines of the Bay Area Air Quality Management District (BAAQMD).[1] This section describes existing air quality, impacts of the projects on local carbon monoxide (CO) levels, impacts of vehicular emissions that have regional effects, and exposure of sensitive receptors to toxic air contaminants (TACs). Mitigation measures to reduce or eliminate significant air quality impacts are identified, where appropriate. Detailed air quality modeling results are included the Air Quality Technical Report included as Appendix C. The effects of the project on greenhouse gas emissions (which contribute to global climate change) are discussed in Section IV.G, Greenhouse Gas Emissions.

As discussed in the Air Quality section of the Initial Study (included in Appendix A), the proposed projects would not create objectionable odors affecting a substantial number of people. Some of the air quality analysis in the Initial Study is presented in this section for informational purposes.

Setting

The following discussion provides an overview of existing air quality conditions in the Bay Area region and in San Francisco. Ambient standards and the regulatory framework related to air quality are summarized. Climate, air quality conditions, and typical air pollutant types and sources are also described.

Existing Climate and Air Quality. The following discussion provides a brief summary of regional air quality, local climate and air quality, and air pollution climatology.

Regional Air Quality. The City and County of San Francisco is located in the San Francisco Bay Area Air Basin (SFBAAB), a large shallow air basin ringed by hills that taper into a number of sheltered

[1] *CEQA Air Quality Guidelines,* BAAQMD, May, 2011. Website: www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_May%202011_5_3_11.ashx.

valleys around the perimeter. Two primary atmospheric outlets exist. One is through the strait known as the Golden Gate, a direct outlet to the Pacific Ocean. The second extends to the northeast, along the west delta region of the Sacramento and San Joaquin Rivers.

Local Climate and Air Quality. Air quality is a function of both local climate and local sources of air pollution. The potential for high pollutant concentrations developing at a given location depends upon the quantity of pollutants emitted into the atmosphere in the surrounding area or upwind, and the ability of the atmosphere to disperse the contaminated air. Air quality is the balance of the natural dispersal capacity of the atmosphere and emissions of air pollutants from human uses of the environment. Pollutants can be diluted by mixing in the atmosphere both vertically and horizontally. Vertical mixing and dilution of pollutants are often suppressed by inversion conditions, when a warm layer of air traps cooler air close to the surface. During the summer, inversions are generally elevated above ground level, but are present over 90 percent of both the morning and afternoon hours. In winter, surface-based inversions dominate in the morning hours, but frequently dissipate by afternoon.

Topography can restrict horizontal dilution and mixing of pollutants by creating a barrier to air movement. Summertime in San Francisco is characterized by cool marine air and persistent coastal stratus and fog, with average maximum temperatures between 60 and 70 degrees Fahrenheit, and minimum temperatures between 50 and 55 degree Fahrenheit. The mornings will typically find the entire City overcast followed by clearing on the warmer bay side, but only partial clearing on the cooler ocean side. The summertime temperature gradient across the City is generally from northwest to southeast, with the warmer readings farthest from the coast and in the wind-sheltered valleys east of the Coast Range bisector. These differences are enhanced further by a strong afternoon and evening sea-breeze that is a result of the temperature (and consequently pressure) difference between the Pacific Ocean and the interior valleys of California. These westerly winds are channeled through the Golden Gate and lesser breaks in the high terrain of the Coast Range, reaching a maximum during the afternoon with speeds between 20 and 30 miles per hour being typical.[2] Although air pollutant

[2] *Climate of San Francisco, NOAA Technical Memorandum, MWSWR-126*, Null, E. Jan, 1978. Website: ggweather.com/sf/narrative.html.

emissions are relatively high due to motor vehicle traffic as well as stationary sources, winds are generally strong enough to carry the pollutants away before they can accumulate.

Criteria Air Pollutants and Health Effects. Both State and federal governments have established health-based Ambient Air Quality Standards for six criteria air pollutants: carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter (PM). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. California Ambient Air Quality Standards and National Ambient Air Quality standards for criteria air pollutants are listed in Table IV.F-1. Ambient air quality data from nearby air monitoring stations are shown in Table IV.F-2, while health effects are summarized in Table IV.F-3. As shown in Table IV.F-3, long-term exposure to elevated levels of criteria pollutants could result in potential health effects. However, emission thresholds established by an air district are used to manage total regional emissions within an air basin based on the air basin's attainment status for criteria pollutants. These emission thresholds were established for individual projects that would contribute to regional emissions and pollutant concentrations and may adversely affect or delay the projected attainment target year for certain criteria pollutants.

Because of the conservative nature of the thresholds and the basin-wide context of individual project emissions, there is no direct correlation between a single project and localized health effects. One individual project having emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like nitrogen oxides (NOx) and reactive organic gases (ROG).

Overall, the potential for an individual project to significantly degrade regional air quality or contribute to a significant health risk is small, even if the emission thresholds are exceeded by that project. Because of the overall improvement trend in air quality in the air basin, it is unlikely that regional air quality would worsen or that the overall health risk would increase compared to current conditions, as a result of emissions from an individual project.

Table IV.F-1: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [a]		Federal Standards [b]		
		Concentration [c]	Method [d]	Primary [c,e]	Secondary [c,f]	Method [g]
Ozone (O_3)	1-Hour	0.09 ppm (180 μg/m³)	Ultraviolet Photometry	No Federal Standard	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 μg/m³)		0.075 ppm (147 μg/m³)		
Respirable Particulate Matter (PM_{10})	24-Hour	50 μg/m³	Gravimetric or Beta Attenuation	150 μg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 μg/m³		–		
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	No Separate State Standard		35 μg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 μg/m³	Gravimetric or Beta Attenuation	15 μg/m³		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m³)	None	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m³)		–		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.03 ppm (57 μg/m³)	Gas Phase Chemiluminescence	53 ppb [h] (100 μg/m³)	Same as Primary Standard	Gas Phase Chemiluminescence
	1-Hour	0.18 ppm (339 μg/m³)		100 ppb [h]	None	
Lead[j]	Rolling 3-Month Average	–	Atomic Absorption	0.15 μg/m³	Same as Primary Standard	High-Volume Sampler and Atomic Absorption
	30-day average	1.5 μg/m³		–		
	Calendar Quarter	–		1.5 μg/m³		
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	–	Ultraviolet Fluorescence	0.030 ppm (80 μg/m³)	–	Spectrophotometry (Pararosaniline Method)
	24-Hour	0.04 ppm (105 μg/m³)		0.14 ppm (365 μg/m³)	–	
	3-Hour	–		–	500 ppb[i] (1300 μg/m³)	
	1-Hour	0.25 ppm (655 μg/m³)		75 ppb[i] (196 μg/m³)	–	

Table IV.F-1 *Continued*

Pollutant	Averaging Time	California Standards [a]		Federal Standards [b]		
		Concentration [c]	Method [d]	Primary [c,e]	Secondary [c,f]	Method [g]
Visibility-Reducing Particles	8-Hour	Extinction coefficient of 0.23 per kilometer - visibility of 10 miles or more (0.07–30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		**No Federal Standards**		
Sulfates	24-Hour	25 μg/m^3	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 μg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride [k]	24-Hour	0.01 ppm (26 μg/m^3)	Gas Chromatography			

[a] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, suspended particulate matter—PM_{10}, $PM_{2.5}$, and visibility reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 μg/m^3 is equal to or less than 1 For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current federal policies.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] Any equivalent procedure which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.

[e] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect public health.

[f] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[g] Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

[h] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that the EPA standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm respectively.

[i] On June 2, 2010, the U.S. EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. EPA also proposed a new automated Federal Reference Method (FRM) using ultraviolet technology, but will retain the older pararosaniline methods until the new RFM has adequately permeated State monitoring networks. The EPA also revoked both the existing 24-hour SO_2 standard of 0.14 ppm and the annual primary SO_2 standard of 0.030 ppm, effective August 23, 2010. The secondary SO_2 standard was not revised at that time; however, the secondary standard is undergoing a separate review by EPA. Note that the new standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the new primary national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[j] National lead standard, rolling 3-month average; final rule signed October 15, 2008.

[k] The ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source: CARB, 2010.

Table IV.F-2: Ambient Air Quality at the San Francisco – Arkansas Street Monitoring Station

Pollutant	Standard	2007	2008	2009
Carbon Monoxide (CO)				
Maximum 1-hour concentration (ppm)		1.60	2.29	2.86
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		1.60	2.29	2.86
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O_3)				
Maximum 1-hour concentration (ppm)		0.060	0.082	0.072
Number of days exceeded:	State: > 0.09 ppm	0	0	0
Maximum 8-hour concentration (ppm)		0.053	0.066	0.056
Number of days exceeded:	State: > 0.07 ppm	0	0	0
	Federal: > 0.08 ppm	0	0	0
Coarse Particulates (PM_{10})				
Maximum 24-hour concentration (μg/m^3)		65.7	41.2	35.3
Number of days exceeded:	State: > 50 μg/m^3	2	0	0
	Federal: > 150 μg/m^3	0	0	0
Annual arithmetic average concentration (μg/m^3)		20.9	21.1	ND
Exceeded for the year:	State: > 20 μg/m^3	Yes	Yes	-
	Federal: > 50 μg/m^3	No	No	-
Fine Particulates ($PM_{2.5}$)				
Maximum 24-hour concentration (μg/m^3)		45.2	29.4	35.5
Number of days exceeded:	Federal: > 35 μg/m^3	5	0	1
Annual arithmetic average concentration (μg/m^3)		8.6	ND	ND
Exceeded for the year:	State: > 12 μg/m^3	No	-	-
	Federal: > 15 μg/m^3	No	-	-
Nitrogen Dioxide (NO_2)				
Maximum 1-hour concentration (ppm)		0.069	0.062	0.059
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.016	0.016	0.015
Exceeded for the year:	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2)				
Maximum 1-hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	State: > 0.25 ppm	-	-	-
Maximum 3-hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	Federal: > 0.5 ppm	-	-	-
Maximum 24-hour concentration (ppm)		0.006	0.004	ND
Number of days exceeded:	State: > 0.04 ppm	0	0	-
	Federal: > 0.14 ppm	0	0	-
Annual arithmetic average concentration (ppm)		0.001	0.000	ND
Exceeded for the year:	Federal: > 0.030 ppm	0	0	-

ppm = parts per million
μg/m^3 = micrograms per cubic meter
ND = No data. There was insufficient (or no) data to determine the value.
Sources: California ARB and U.S. EPA, 2011.

Table IV.F-3: Health Effects of Air Pollutants

Pollutant	Health Effects	Examples of Sources
Suspended Particulate Matter ($PM_{2.5}$ and PM_{10})	• Reduced lung function • Aggravation of the effects of gaseous pollutants • Aggravation of respiratory and cardio respiratory diseases • Increased cough and chest discomfort • Soiling • Reduced visibility	• Stationary combustion of solid fuels • Construction activities • Industrial processes • Atmospheric chemical reactions
Ozone (O_3)	• Breathing difficulties • Lung damage	• Formed by chemical reactions of air pollutants in the presence of sunlight; common sources are motor vehicles, industries, and consumer products
Carbon Monoxide (CO)	• Chest pain in heart patients • Headaches, nausea • Reduced mental alertness • Death at very high levels	• Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Lead (Pb)	• Organ damage • Neurological and reproductive disorders • High blood pressure	• Metals processing • Fuel combustion • Waste disposal
Sulfur Dioxide (SO_2)	• Reduced lung function • Aggravated asthmatic symptoms • Increased risk of cardio-pulmonary disease.	• Combustion of petroleum-derived fuels
Vinyl Chloride	• Dizziness • Drowsiness • Headaches • Liver Damage	• Landfills • Sewage plants • Hazardous waste sites.
Nitrogen Dioxide (NO_2)	• Lung damage	• See carbon monoxide sources
Toxic Air Contaminants	• Cancer • Chronic eye, lung, or skin irritation • Neurological and reproductive disorders	• Cars and trucks, especially diesels • Industrial sources such as chrome platers • Neighborhood businesses such as dry cleaners and service stations • Building materials and products

Sources: CARB and U.S. EPA, 2008.

Air pollutants and their sources along with potential health effects are described below.

Ozone. Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving ROG and NOx. The main sources of ROG and NOx, often referred to as ozone precursors, are combustion processes (including combustion in 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. Table IV.F-1 shows that, according to BAAQMD published data, the most stringent applicable standards (the State 1-hour standard of 9 parts per hundred million (pphm) and the federal 8-hour standard of 8 pphm) were not exceeded in San Francisco between 2007 and 2009.

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. While CO transport is limited, it disperses with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations near congested roadways or intersections may reach unhealthful levels that adversely affect local sensitive receptors (e.g., residents, schoolchildren, the elderly, hospital patients, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS) or with extremely high traffic volumes. 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 IV.F-2, no exceedances of State CO standards were recorded between 2007 and 2009. Measurements of CO indicate hourly maximums ranging between 15 to 25 percent of the more stringent State standard, and maximum 8-hour CO levels at approximately 30 percent of the allowable 8-hour standard.

Particulate Matter. Particulate matter is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from manmade and natural sources. Particulate matter is measured in two size ranges: PM_{10} for particles less than 10 microns in diameter and $PM_{2.5}$ for particles less than 2.5 microns in diameter. In the Bay Area, motor vehicles generate about half of the air basin's particulates, through tailpipe emissions as well as brake pad and tire wear. Wood burning in fireplaces and stoves, industrial facilities, and ground-disturbing activities such as construction are other sources of such fine particulates. These fine particulates are small enough to be inhaled into the deepest parts of the human lung and can cause adverse health effects. According to the California Air Resources Board (CARB), studies in the United States and elsewhere have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks, and studies of children's health in California have demonstrated that particle pollution may significantly reduce lung function in children. The CARB also reports that State-wide 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.[3]

Nitrogen Dioxide. NO_2 is a reddish brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 can increase the risk of acute and chronic respiratory disease and reduce visibility. NO_2 may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. Table IV.F-2 shows that the standard for NO_2 is being met in the Bay Area, and pollutant trends suggest that the air basin will continue to meet these standards for the foreseeable future. On January 22, 2010 the U.S. Environmental Protection Agency (U.S. EPA) strengthened the health-based National Ambient Air Quality Standards (NAAQS) for NO_2.

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.[4] Table IV.F-2 shows that the standard for SO_2 is being met in the Bay Area, and pollutant trends suggest that the air basin will continue to meet these standards for the foreseeable future.

Lead. Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the

[3] *Recent Research Findings: Health Effects of Particulate Matter and Ozone Air Pollution*, California Air Resources Board, January 2004. Website: www.arb.ca.gov/research/health/fs/PM-03fs.pdf.

[4] BAAQMD, 2010.

phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufactures.

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the U.S. EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The U.S. EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of the U.S. EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically.

Toxic Air Contaminants. Toxic air contaminants (TACs) are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. 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 another.

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 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, in order to provide a quantitative estimate of health risks.[5] As part of ongoing efforts to identify and assess potential health risks to the public, the BAAQMD has collected and compiled air toxics emissions data from industrial and commercial sources of air pollution throughout the Bay Area. Monitoring data and emissions inventories of TACs help the BAAQMD determine health risk to Bay Area residents.

[5] 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 suggests a potential public health risk. Such an assessment generally evaluates chronic, long term effects, including the increased risk of cancer as a result of exposure to one or more TACs.

Ambient monitoring concentrations of TACs indicate that pollutants emitted primarily from motor vehicles (1,3-butadiene and benzene) account for slightly over one half of the average calculated cancer risk from ambient air in the Bay Area.[6] According to the BAAQMD, ambient benzene levels declined dramatically in 1996 with the advent of Phase 2 reformulated gasoline. Due to this reduction, the calculated average cancer risk based on monitoring results has been reduced to 143 in one million: however, this risk does not include the risk resulting from exposure to diesel particulate matter or other compounds not monitored.

Diesel particulate matter (DPM), which is emitted in diesel engine exhaust, was identified as a toxic air contaminant by the CARB in 1998. Unlike TACs emitted from industrial and other stationary sources noted above, most diesel particulate matter is emitted from mobile sources—primarily "off-road" sources such as construction and mining equipment, agricultural equipment, and truck-mounted refrigeration units, as well as trucks and buses traveling on freeways and local roadways. Agricultural and mining equipment are not commonly used in San Francisco, while construction equipment typically operates for a limited time at changeable locations. As a result, the readily identifiable locations where diesel particulate matter is emitted in the project area include high-traffic roadways and other areas with substantial truck traffic.

Although not specifically monitored, recent studies indicate that exposure to diesel particulate matter may contribute significantly to a cancer risk (approximately 500-700 in one million) that is greater than all other measured TACs combined.[7] The CARB's Diesel Risk Reduction Plan is intended to substantially reduce diesel particulate matter emissions and associated health risks through introduction of ultra-low-sulfur diesel fuel – a step already implemented – and cleaner-burning diesel engines. The technology for reducing diesel particulate matter emissions from heavy-duty trucks is well established, and both State and federal agencies are moving aggressively to regulate engines and emission control systems to reduce and remediate diesel emissions. CARB anticipates that by 2020, average State-wide diesel particulate matter concentrations will decrease by 85 percent from levels in 2000 with full

[6] *Toxic Air Contaminant Control Program Annual Report 2003 Volume 1*, BAAQMD, August 2007. This document is available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

[7] Ibid.

implementation of the Diesel Risk Reduction Plan, meaning that the State-wide health risk from diesel particulate matter would have decreased from 540 cancer cases in one million to 21.5 cancer cases in one million. It is likely that the Bay Area cancer risk from diesel particulate matter will decrease by a similar factor by 2020.

High Volume Roadways. Air pollutant exposures and their associated health burdens vary considerably within places in relation to sources of air pollution. Motor vehicle traffic is perhaps the most important source of intra-urban spatial variation in air pollution concentrations. Air quality research consistently demonstrates that pollutant levels are substantially higher near freeways and busy roadways and human health studies have consistently demonstrated that children living within approximately 300 to 700 feet of freeways or busy roadways have reduced lung function and higher rates of respiratory disease.[8] At present, it is not possible to attribute the effects of roadway proximity on non-cancer health effects to one or more specific vehicle types or vehicle pollutants. Engine exhaust, from diesel, gasoline, and other combustion engines, is a complex mixture of particles and gases, with collective and individual toxicological characteristics. Four epidemiological studies on roadways and health impacts conducted in California populations are described below.

- In Oakland, California, children at schools in proximity to high volume roadways experienced more asthma and bronchitis symptoms.[9]
- In a low-income population of children in San Diego, children with asthma living within 550 feet of high traffic volumes were more likely than those residing near lower traffic volumes to have more medical care visits for asthma.[10]

[8] "Epidemiologic evidence for asthma and exposure to air toxics: linkages between occupational, indoor, and community air pollution research," *Environ Health Perspectives*, Delfino, RJ., 2002. This document is available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

[9] "Traffic-related air pollution and respiratory health: East Bay Children's Respiratory Health Study," *American Journal of Respiratory and Critical Care Medicine*, Kim, J. et al., 2004. This document is available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

[10] "Examining Associations Between Childhood Asthma and Traffic Flow Using a Geographic Information System," *Environmental Health Perspectives*, English P., Neutra R., Scalf R. Sullivan M. Waller L. Zhu L., 1999. This document is available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

- In a study of Southern California school children, residence location within 75 meters (246 feet) of a major road was associated with an increased risk of asthma.[11]
- In a study conducted in 12 Southern California communities, children who lived within 500 feet of a freeway had reduced growth in lung capacity compared to those living greater than 1,500 feet from a freeway.[12]

Federal and State regulations control air pollutants at the regional level by limiting vehicle and stationary source emissions. However, air quality regulations have not limited the use of vehicles and generally have not protected sensitive land uses from air pollution "hot spots" associated with proximity to transportation facilities. Because of the robust evidence relating proximity to roadways and a range of non-cancer and cancer health effects, the CARB created guidance for avoiding air quality conflicts in land use planning in its *Air Quality and Land Use Handbook: A Community Health Perspective*.[13] In its guidance, the CARB advises that new sensitive uses (e.g. residences, schools, day care centers, playgrounds, and hospitals) not be located within 500 feet of a freeway or urban roads carrying 100,000 vehicles per day or more, or within 1,000 feet of a distribution center (warehouse) that accommodates more than 100 trucks or more than 90 refrigerator trucks per day.

CARB guidance suggests that the use of these guidelines should be customized for individual land use decisions, and take into account the context of development projects. The *Air Quality and Land Use Handbook* specifically states that these recommendations are advisory and acknowledges that land use agencies must balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

[11] "Traffic, susceptibility, and Childhood Asthma," *Environmental Health Perspectives*, McConnell, R. B., K. Yao, L. Jerrett, M. Lurmann, F. Gilliland, F. Kunzli, N. Gauderman, J. Avol, E. Thomas, D. Peter, J., 2006. This document is available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

[12] "The effect of air pollution on lung development from 10 to 18 years of age," *New England Journal of Medicine*, Gauderman WJ, Avol E, Gilliland F, Vora H, Thomas D, Berhane K, McConnell R, Kuenzli N, Lurmann F, Rappaport E, Margolis H, Bates D, Peters J.. September, 2004 and March, 2005. This document is available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

[13] *Air Quality and Land Use Handbook: A Community Health Perspective*, California Environmental Protection Agency and Air Resources Board, 2005. Website: www.arb.ca.gov/ch/landuse.htm.

Odors. Odors are also an important element of local air quality conditions. Specific activities allowed within each of the land use categories in the San Francisco General Plan can raise concerns related to odors on the part of nearby neighbors. Major sources of odors include restaurants and manufacturing plants. Other odor producers include the industrial facilities within the region. BAAQMD Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds. This regulation limits the "discharge of any odorous substance which causes the ambient air at or beyond the property line…to be odorous and to remain odorous after dilution with four parts of odor-free air." The BAAQMD must receive odor complaints from 10 or more complainants within a 90-day period in order for the limitations of this regulation to go into effect. If this criterion has been met, an odor violation can be issued by the BAAQMD if a test panel of people can detect an odor in samples collected periodically from the source. While sources that generate objectionable odors must comply with air quality regulations, the public's sensitivity to locally produced odors often exceeds regulatory thresholds.

Sensitive Receptors. Occupants of facilities such as schools, day care centers, parks and playgrounds, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory disease. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions, compared to commercial and industrial areas, because people generally spend longer periods of time at their residences, with greater associated exposure to ambient air quality conditions. Recreational uses are also considered sensitive compared to commercial and industrial uses due to greater exposure to ambient air quality conditions. Residents surrounding the project sites and employees of the proposed new fire station would be considered sensitive receptors (typically, employees are not considered sensitive receptors; however, fire fighters and other emergency personnel are considered sensitive receptors since their work schedules dictate extended periods of time at the fire station). The locations of the sensitive receptors most susceptible to air pollution in the vicinity of the project sites are shown in Figure IV.F-1.

FIGURE IV.F-1

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR
Sensitive Receptors

SOURCES: GOOGLE EARTH, 2010; SFMOMA; LSA ASSOCIATES, INC., 2011.

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Regulatory Framework. The U.S. EPA and the CARB regulate direct emissions from motor vehicles.[14] The BAAQMD is primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development), as well as for monitoring ambient pollutant concentrations. The BAAQMD's jurisdiction encompasses seven counties—Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara and Napa—and portions of Solano and Sonoma Counties.

Federal Clean Air Act. The 1970 Federal Clean Air Act (last amended in 1990, United States Code (USC) 7401 et seq.) authorized the establishment of national health-based air quality standards and also set deadlines for the attainment of these standards. The Federal Clean Air Act amendments of 1990 changed deadlines for attaining National Ambient Air Quality Standards, as well as the remedial actions required of areas in the nation that exceed the standards. Under the Clean Air Act, State and local agencies in areas that exceed the National Ambient Air Quality Standards are required to develop State Implementation Plans to show how they will achieve, by specific dates, the National Ambient Air Quality Standards for ozone.

The Clean Air Act requires that projects receiving federal funds demonstrate conformity with the approved State Implementation Plan and local air quality attainment plan for the region. Conformity with the State Implementation Plan requirements would satisfy the Federal Clean Air Act requirements.

California Clean Air Act. In 1988, the California Clean Air Act required that all regional air districts in the State endeavor to achieve and maintain California Ambient Air Quality Standards for O_3, CO, SO_2 and NO_2 by the earliest practical date. Plans for attaining California Ambient Air Quality Standards are submitted by the air districts to the CARB every 3 years. The California Clean Air Act provides air districts with new authority to regulate indirect sources and mandates that these districts focus particular attention on reducing emissions from transportation and area-wide emission sources. Each

[14] The CARB's responsibilities include establishing State ambient air quality standards, emissions standards, and regulations for mobile emissions source (e.g. autos, trucks), as well as overseeing the efforts of county-wide and multi-county air pollution control districts that have primary responsibility over stationary sources.

air district plan must achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. Additional physical development within a region that increases vehicle trips would tend to impede the emissions reduction goals of the California Clean Air Act. The State standards for these pollutants (O_3, CO, NO_2 and SO_2) are more stringent than the national standards.

Bay Area Air Quality Management District. The BAAQMD is the regional agency responsible for air quality regulation within the San Francisco Bay Air Basin. The BAAQMD has permit authority over most types of stationary emission sources and can require stationary sources to obtain permits; it can also impose emission limits, set fuel or material specifications, and establish operational limits to reduce air emissions. The BAAQMD regulates new or expanding stationary sources of TACs.

The BAAQMD is responsible for developing a Clean Air Plan which guides the region's air quality planning efforts to attain the California Ambient Air Quality Standards. The BAAQMD's 2010 Clean Air Plan is the latest Clean Air Plan which contains district-wide control measures to reduce ozone precursor emissions (i.e., ROG and NO_x) and particulate matter.

The Bay Area 2010 Clean Air Plan, which was adopted on September 15, 2010 by the BAAQMD's board of directors, will:

- Update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone;
- Provide a control strategy to reduce ozone, particulate matter (PM), air toxics, and greenhouse gases in a single, integrated plan;
- Review progress in improving air quality in recent years; and
- Establish emission control measures to be adopted or implemented in the 2010 to 2012 timeframe.

The City of San Francisco is within the jurisdiction of the BAAQMD. Air quality conditions in the San Francisco Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen dramatically. Exceedances of air quality standards occur primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons.

The BAAQMD operates a regional monitoring network that measures the ambient concentrations of criteria pollutants, O_3, CO, PM_{10} and $PM_{2.5}$, and SO_2. Ozone is a by-product of precursor emissions of NO_x and reactive organic compounds ROGs.

San Francisco General Plan. The Air Quality Element of the General Plan is composed of six sections, each of which focuses on air quality improvement measures. The Air Quality Element establishes a goal of clean air planning to reduce the level of pollutants in the air, and to protect and improve public health, welfare and quality of life of the citizens of San Francisco and the residents of the metropolitan region. The General Plan also recognizes that the majority of air pollutants are generated on roadways from vehicle emissions. Policy 3.7 calls for assessment of air quality hazards through modeling and prevention of new air quality hazards through building design.

Policy 3.7: Exercise air quality modeling in building design for sensitive land uses such as residential developments that are located near the sources of pollution such as freeways and industries.

The Air Quality Element also requires that air quality be taken into considerations when project approval is considered. Certain land uses, such as some types of industrial uses and freeways, emit air pollutants that could be hazardous to human health, particularly the health of sensitive receptors such as children, the elderly, and people with respiratory diseases. When reviewing new housing projects or other land uses to be used by sensitive receptors, the Air Quality Element requires that the location of industrial sites or other sources of air pollution be considered in the design of the project to orient the air intake of the building away from the sources of pollution. Conversely, the sponsors of future industrial and other air polluting development should consider the existence of sensitive receptors in the vicinity.

San Francisco Health Code Construction Dust Control. San Francisco Health Code Article 22B, Construction Dust Control, requires, for construction projects within 1,000 feet of sensitive receptors (residence, school, childcare center, hospital or other health-care facility or group-living quarters), preparation of a site-specific dust control plan. That plan must include a number of equivalent measures to minimize visible dust. These measures contain all the dust control measures presented in the BAAQMD CEQA Guidelines; however, the San Francisco Health Code requirements increase the watering frequency and add monitoring, recordkeeping, third-party verification, and community outreach requirements not found in the BAAQMD guidelines.

San Francisco Health Code Air Quality Assessment and Ventilation Requirement for Urban Infill Residential Developments. The San Francisco Health Code Article 38 requires an air quality assessment to evaluate the concentration of $PM_{2.5}$ from local roadway traffic that may affect a residential development site. If the air quality assessment indicates that the concentration of $PM_{2.5}$ at the site would be greater than 0.2 $\mu g/m^3$ (micrograms per cubic meter), 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.

Monitoring Station Data and Attainment Area Designation. Pollutant monitoring results for the years 2007 to 2009 at the San Francisco – Arkansas Street ambient air quality monitoring station (the closest station to the project sites) indicate that air quality in the project area has generally been good. Table IV.F-2 shows that exceedances of the state PM_{10} standard have infrequently occurred in San Francisco. It is estimated that the State 24-hour PM_{10} standard was exceeded 2 days between 2007 and 2009.[15] The BAAQMD began monitoring $PM_{2.5}$ concentrations in San Francisco in 2002. The federal 24-hour $PM_{2.5}$ standard was not exceeded until 2006, when the standard was lowered from 65 $\mu g/m^3$ to 35 $\mu g/m^3$. The federal standard was exceeded five times in 2007. The State annual average standard was not exceeded in 2007. No data for the vicinity of the project sites is available for the years 2008 and 2009.

[15] PM_{10} is sampled every sixth day; therefore, actual days over the standard can be estimated to be six times the numbers listed in the table.

Impacts

This section analyzes the impacts related to air quality that could result from implementation of the proposed projects. The section begins with the significance criteria, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the proposed projects. Project and cumulative impacts are considered, and mitigation measures are identified, as appropriate. The potential for the projects to expose persons to odors was addressed in the Initial Study (see page 97 of the Initial Study, included as Appendix A), and therefore is not discussed in this section.

Significance Criteria. Implementation of the SFMOMA Expansion and Fire Station Relocation and Housing Project would have a significant effect on air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal, State, or regional ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Result in a cumulative air quality impact in combination with past, present and reasonably foreseeable future projects in the vicinity.

The BAAQMD provides various quantitative thresholds that can be used to better define the above criteria. For ROG,[16] NO_x[17] or $PM_{2.5}$ an operational net increase of 54 pounds per day (or 10 tons per year) would be considered significant, while a net increase of PM_{10} of 82 pounds per day (or 15 tons

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[16] Reactive Organic Gases (ROG) are classes of organic compounds that transform with heat and sunlight to form smog or ozone. The criteria air pollutant SO_2 is a reactive organic gas.

[17] Nitrogen Oxide (NO_x) refers to NO and NO_2. NO_2 is the indicator of the larger form of nitrogen oxides.

per year) would be significant. The BAAQMD also has construction related CEQA thresholds, including maximum average daily emissions for ROG and NO_x of 54 pounds per day, maximum PM_{10} exhaust emissions of 82 pounds per day and maximum $PM_{2.5}$ emissions of 54 pounds per day. (Implementation of the BAAQMD's best management practices are required to reduce fugitive dust PM_{10} and $PM_{2.5}$ emissions during construction to a less-than-significant level.) CO concentrations would be significant if the project leads to or contributes to CO concentrations exceeding the State Ambient Air Quality Standard of 9 ppm averaged over 8 hours and 20 ppm for 1 hour (i.e., if it creates a "hot spot"). Generally, if a project results in an increase in ROG, NO_x, or PM that exceeds the significance criteria, then it would also be considered to contribute considerably to a significant cumulative effect. For projects that would not lead to a significant increase of ROG, NO_x, or PM emissions, the cumulative effect is evaluated based on a determination of the consistency of the project with the regional Clean Air Plan.

For health risks and hazards resulting from emissions of TACs, the BAAQMD recommends either that a project be found to be in compliance with a "qualified community risk reduction plan," or that significance thresholds be used for both construction and operational emissions based on commonly-used standards employed in health risk assessment. The thresholds for project-specific impacts are an increase in lifetime cancer risk of 10 chances in one million, an increase in the non-cancer risk equivalent to a chronic or acute "hazard index" greater than 1.0, or an increase in the annual average concentration of $PM_{2.5}$ in excess of 0.3 $\mu g/m^3$. The City of San Francisco's threshold is more restrictive at 0.2 $\mu g/m^3$. The BAAQMD also recommends cumulative thresholds for cancer risk of 100 in one million, a hazard index greater than 10.0, and a $PM_{2.5}$ concentration greater than 0.8 $\mu g/m^3$. Unlike the volume-based thresholds for criteria pollutants noted above, the toxic air contaminant thresholds are used for specific receptor locations when a risk analysis is required for specific project components, such as stationary sources (common in industrial operations) or the use of diesel-powered equipment, including construction equipment.

It should be noted that the emission thresholds were established based on the attainment status of the air basin in regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety according to the U.S. EPA, these emission thresholds are regarded as conservative and would tend to overstate an individual project's contribution to health risks.

Analysis Methodology. In general, the proposed projects could result in two types of air quality impacts. First, the projects could result in air pollution through increased generation of air pollutants, such as through increased vehicle travel, demand for energy, and construction activity. Second, the projects could increase the employee or residential population in proximity to pre-existing or new sources of air pollution, increasing exposure and hazard. This analysis identifies air quality impacts associated with implementation of the proposed projects on local and regional land uses. The methodology for the analysis is described below with additional detail provided in the Air Quality Technical Report found in Appendix C.

Construction**.** Demolition of existing buildings and site clearing and excavation would generate fugitive dust (PM_{10} and $PM_{2.5}$). (Potential emissions of airborne hazardous building materials were already addressed in the Initial Study prepared for the project, included in Appendix A.) Project construction emissions were estimated using the California Emission Estimator Model (CalEEMod) version 2011.1.1, which uses emission factors from the OFFROAD model. The analysis takes into account implementation of all PM_{10} control measures recommended by the BAAQMD and as required under the San Francisco Health Code Article 22B. The model results include a 33 percent reduction of load factors to account for the overestimation of NO_x and PM emissions in the OFFROAD model.

Operation. The operational and area source emissions of criteria air pollutants for the proposed projects were also estimated using CalEEMod, with project-specific land use data and trip generation estimates included in the transportation study prepared for the projects. The projects would generate criteria pollutant emissions associated with vehicle traffic and from on-site area sources (i.e., natural gas combustion for space and water heating, and combustion of other fuels by building and grounds maintenance equipment).

As with all San Francisco fire stations, the relocated fire station would perform equipment testing each morning of the week, including starting and running the fire trucks, chain saws, "jaws of life," portable generators, and other equipment; checking hoses; and raising ladders, for a period of time each morning between approximately 8:45 and 9:30 a.m. on Folsom Street. Testing of the ladder truck would occur on Falmouth Street. Similar testing of emergency equipment occurs every day at approximately the same time at the current location of Fire Station No. 1 at 676 Howard Street and at every other fire station in the City.[18]

Typically, each power tool and generator is run for no more than 15 to 30 seconds before being shut off and returned to its storage place on the vehicle. Water from the nearest hydrant is run through the pump for up to 1 minute, and after the vehicle motors are turned off, fluid levels are checked. All equipment is cleaned as necessary before being put back into the station. Without specific emissions data for this equipment, it was assumed that the emissions will be similar to those listed for concrete/industrial saws. It was further assumed that modeling five of the concrete/industrial saws running for 1 hour each would conservatively characterize these testing emissions. The running of the engines, trucks, and rescue vehicles for 15 minutes each was also included.

The Fire Station Relocation and Housing Project would include the use of an emergency generator, which would run on diesel fuel. The San Francisco Fire Department (SFFD) would test the generator for 30 minutes, once per month. Emergency generator emissions were calculated using emission factors from the BAAQMD for emergency generators at a similar facility. See Appendix C for the emissions factors used.

To identify impacts, the net increase in emissions over existing conditions associated with the proposed projects was compared with the BAAQMD significance criteria.

As noted in Chapter II, Project Description, the relocation of Fire Station No. 1 would not result in an overall increase in travel demand (as travel demand associated with the relocated fire station would be the same as travel demand at the existing fire station located at 676 Howard Street); therefore, the relocation of Fire Station No. 1 would not result in new regional emissions. However, to be

[18] Personal communication with Thomas Doudiet, Assistant Deputy Chief, San Francisco Fire Department, May 6, 2011. This document is available for review at the Planning Department in Case File No. 2010.0275E.

conservative, trips generated by the fire station, including emergency vehicle operations, were included in the emissions analysis.

The CalEEMod files used to develop the criteria pollutant emissions inventory for the projects can be found in Appendix C.

Toxic Air Contaminants. Diesel-powered construction equipment creates exhaust that contributes to ozone smog that is itself considered a TAC. Construction emissions from the proposed projects were calculated using the OFFROAD model built into CalEEMod, based on data provided by the project sponsor concerning the composition of the construction fleet and duration of use. Worker trips and project-related diesel trucks that deliver materials to the project site were also considered in the analysis.

The analysis identified permitted TAC sources within 1,000 feet of the boundaries of the project sites using BAAQMD's Stationary Source Screening Analysis tool. Sources identified with a cancer risk greater than zero were reported and mapped.

The health risk analysis follows the BAAQMD's Health Risk Screening Analysis,[19] California Air Pollution Control Officers Association[20] (CAPCOA), and California Office of Environmental Health and Hazard Assessment[21] (OEHHA) guidance for air modeling required in Health Risk Assessments (HRAs). AERMOD is the preferred regulatory model because it uses a refined meteorology and topography input. Typically, 1 year of meteorology data must be organized in a special file format to use AERMOD. However, a readily-available meteorological file for the AERMOD program is not available for use at the project sites. Therefore, as an alternative, the ISCST-3 program was used because a compatible meteorological file from nearby Mission Bay was readily available.

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[19] *Recommended Methods for Screening and Modeling Local Risks and Hazards*, BAQMD, May 2010. This document is available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

[20] *Health Risk Assessment for Development Projects,* California Air Pollution Control Officers Association, July 2009. This document is available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

[21] *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, Office of Environmental Health Hazards Assessment (OEHHA), August 2003. This document is available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

The Health Risk Assessment utilizes the following methodology:

- Detailed information on the existing stationary sources for emissions of $PM_{2.5}$ and TACs was identified by the BAAQMD and the San Francisco Environmental Planning Division (EPD) for inclusion in the analysis.
- The location and nature of subject emission sources were documented, as well as detailed emissions calculations for all sources, including time-of-day emission profiles for non-constant sources (i.e., back-up generators or idling fire engines).
- Utilizing OEHHA, BAAQMD, CAPCOA, and EPD guidance, estimates for point, volume and area sources were developed. Some sources were characterized as multiple sources (gasoline dispensing is typically modeled as a volume and point source). TACs to be analyzed include acetaldehyde, acrolein, benzene, 1,3-butadiene, ethylbenzene, formaldehyde, hexane, methanol, methyl ethyl ketone, naphthalene, propylene, styrene, toluene, and xylenes.
- The ISCST3 air dispersion model used unit emissions for each source, allowing use of the HARP health risk assessment post-processor to automatically process air dispersion modeling results that were predicted using a unitized emission rate.
- Using the maximum concentrations obtained from the model, a health risk assessment for cancer risk, non-cancer risk (chronic and acute) and $PM_{2.5}$ concentrations utilizing age sensitivity factors, as appropriate, was prepared.

Cumulative impacts of the project were evaluated based on the BAAQMD CEQA Guidelines, discussed under the significance criteria.

Impacts. This section discusses the air quality impacts associated with implementation of the proposed projects. Mitigation measures are identified where appropriate.

<u>Impact AQ-1</u>: Implementation of the proposed SFMOMA Expansion and Fire Station Relocation and Housing Project would not conflict with or obstruct implementation of the local applicable air quality plan. (Less Than Significant)

The applicable air quality plan is the BAAQMD's 2010 Clean Air Plan, which was adopted on September 15, 2010. The Clean Air Plan is a comprehensive plan to improve Bay Area air quality and protect public health. The Clean Air Plan defines a control strategy to reduce emissions and reduce ambient concentrations of air pollutants; safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, with an emphasis on protecting the communities most heavily affected by air pollution; and reduce greenhouse gas emissions to protect the climate. Consistency with the Clean Air Plan can be determined if the project supports the goals of the Clean Air Plan, includes applicable control measures from the Clean Air Plan, and if the project would not disrupt or hinder implementation of any control measures from the Clean Air Plan.

The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project would result in short-term construction-related criteria air pollutant emissions. However, these emissions would not be significant and would be limited to the project's construction period. As discussed in further detail below, the projects' operational emissions would also not be significant. Therefore, the projects would support the primary goals of the BAAQMD's 2010 Clean Air Plan.

The proposed projects would be consistent with the type of development promoted by the Clean Air Plan's Transportation Control Measure for Local Land Use Strategies, which support and promote land use patterns, policies and infrastructure investments that support higher density mixed use, residential, and employment development near transit in order to facilitate walking, bicycling, and transit use. The proposed projects would be generally consistent with this strategy, based on the proximity of the sites to transit and other urban amenities. In addition, SFMOMA and the SFFD currently implement measures intended to reduce the use of private vehicles. These include participation in subsidized pre-tax transit vouchers and emergency ride home programs. The projects would also not preclude the extension of a transit line or bike path, and would not provide excessive parking beyond applicable parking requirements.

Therefore, the proposed projects would incorporate all feasible air quality plan control measures and would not hinder implementation of the 2010 Clean Air Plan.

Impact AQ-2: Construction of the proposed SFMOMA Expansion and Fire Station Relocation and Housing Project could violate an air quality standard or contribute substantially to an existing or projected air quality violation. (Less Than Significant)

Site preparation activities, such as demolition, excavation, grading, foundation construction, and other ground-disturbing construction activity would affect localized air quality during the construction phases of the proposed projects. The movement of heavy equipment would create fugitive dust (particulate matter, including PM_{10} and $PM_{2.5}$) and other pollutants related to diesel fuel combustion. Construction activities, in particular soil movement for foundation excavation and site grading, would create the potential for wind-blown dust to create localized particulate matter concentrations near the project sites. Although more of a nuisance than a health hazard to most people, the dust could affect persons with respiratory diseases immediately downwind of the sites, as well as any sensitive electronics or communications equipment. Seniors, children, or other potentially sensitive receptors near the project sites may be exposed to airborne dust associated with demolition and ground-disturbance activities.

Heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2, NO_x, VOCs, soot particulate ($PM_{2.5}$ and PM_{10}), and toxic air contaminants in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and generally limited to the immediate area surrounding the construction sites.

The proposed construction schedule for all improvements on both project sites encompasses a maximum duration of approximately 24 months (construction of the SFMOMA Expansion is expected to take 24 months; construction of the Fire Station Relocation and Housing Project is expected to take 12 months each). Construction-related emissions are presented in Table IV.F-4.[22]

[22] The CARB has acknowledged that the emission factors from the OFFROAD model overestimate NOx and PM emissions by at least 33 percent. Therefore a 33 percent reduction in load factors was applied to the model emission estimates.

Table IV.F-4: Project Construction Emissions in Pounds Per Day

Project Construction	ROG	NO_x	Exhaust $PM_{2.5}$	Exhaust PM_{10}
SFMOMA Expansion	30.0	39.0	1.9	1.9
Fire Station Relocation and Housing Project	6.4	13.0	0.9	0.9
Total Construction Emissions	36.4	52.0	2.8	2.8
BAAQMD Thresholds	54.0	54.0	54.0	82.0
Exceed Threshold? (Yes/No)	**No**	**No**	**No**	**No**

Notes:
OFFROAD emission estimates include a 33 percent load factor reduction.
NA = Not Applicable, the BAAQMD does not have threshold.
BMP = Best Management Practices
Source: LSA Associates, 2011.

In May of 2006, the Mayor of San Francisco ordered all City departments to use the fuel blend B20[23] in all diesel vehicles which would include construction equipment for the proposed fire station project, with full implementation by December 2007. The motivation for converting to biodiesel was the desire for cleaner emissions. According to the EPA, switching to B20 will reduce exhaust emissions of ROG by 20 percent and CO and PM by 12 percent. NO_X emissions of B20 range from 2 percent lower to up to 2 percent higher than standard diesel fuel. The emissions shown in Table IV.F-4 are based on standard diesel fuel. Even with a potential 2 percent increase in emissions of NO_X, the use of B20 would not result in a significant level of any pollutant emissions.

As shown in Table IV.F-4, above, construction emissions would not exceed the BAAQMD-established threshold for ROG, NO_X, $PM_{2.5}$, and PM_{10} exhaust emissions. Therefore, construction emissions from these pollutants would not violate air quality standards or contribute significantly to an existing or projected air quality violation.

One potential effect of construction activities would be locally elevated levels of PM_{10} and $PM_{2.5}$ fugitive dust emissions downwind of construction activity. Construction dust could be generated at levels that would create an annoyance to occupants of nearby properties. The San Francisco Construction Dust Ordinance (Ordinance 176-08, effective July 30, 2008) discussed in the Regulatory

[23] B20 is a fuel blend of 20 percent biodiesel and 80 percent regular diesel.

Framework subsection, above, would reduce 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, and to minimize public nuisance complaints.

The Ordinance requires that all site preparation work, demolition, or other construction activities within San Francisco which have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specified dust control measures whether or not the activity requires a permit from the Department of Building Inspection (DBI). The Director of DBI may waive this requirement for activities on sites of less than ½-acre that are unlikely to result in any visible wind-blown dust. The project sponsor and the contractor responsible for construction activities at the project site are required to use practices to control construction dust on the site that result in dust control levels which are acceptable to the Director of DBI. 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 7 days) greater than 10 cubic yards or 500 square feet of excavated materials, backfill material, import material, gravel, sand, road base, or soil shall be covered with a 10 mil (0.01 inch) polyethylene plastic (or equivalent) tarp, braced down, or use other equivalent soil stabilization techniques.

Impact AQ-3a: Construction of the proposed SFMOMA Expansion could generate fugitive dust emissions. (Less Than Significant)

For project sites greater than ½-acre in size, such as the SFMOMA Expansion site, the Ordinance requires that the project sponsor submit a Dust Control Plan for approval by the San Francisco Health Department. 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. Since sensitive receptors exist within 1,000 feet of the SFMOMA Expansion's construction activities, the project would be ineligible for a waiver of this requirement.

Site-specific Dust Control Plans under the Ordinance require the project sponsor to carry out the following tasks:

- 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 hauling trucks to the size of the truck bed and securing with a tarpaulin;
- Enforce a 15 mph 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; and

- Apply soil stabilizers to inactive areas; and sweep adjacent streets to reduce particulate emissions.

The Ordinance requires that the project sponsor designate an individual to monitor compliance with dust control requirements. The above regulations and procedures set forth by the San Francisco Health Code would ensure that the BAAQMD-recommended Best Management Practices would be employed. According to the BAAQMD significance threshold for construction impacts, implementation of these measures would ensure that construction dust impacts of the SFMOMA Expansion would be less than significant.

Impact AQ-3b: Construction of the proposed Fire Station Relocation and Housing Project could generate fugitive dust emissions. (Less Than Significant With Mitigation Incorporated)

The Fire Station Relocation and Housing Project site comprises 14,400 square feet (less than ½ acre), and therefore a Dust Control Plan is not required. However, the BAAQMD requires the implementation of Best Management Practices to reduce construction impacts to a less-than-significant level. Implementation of Mitigation Measure AQ-3 would require implementation of the BAAQMD's Best Management Practices and would reduce fugitive dust emissions. Although the project would not exceed the exhaust PM thresholds, the BAAQMD requires the implementation of the following measure to reduce impacts to a less-than-significant level:

Mitigation Measure AQ-3: Consistent with guidance from the BAAQMD, the following actions shall be required of construction contracts and specifications for the Fire Station Relocation and Housing Project:

- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.
- Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

- Clear signage indicating that idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure, Title 13, Section 2485 of California Code of Regulations (CCR)) shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- A publicly visible sign shall be posted with the telephone number and person to contact at the City of San Francisco regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

According to the BAAQMD, if control measures of the type set forth in Mitigation Measure AQ-3 are implemented, then air pollution from construction activity emissions associated with the Fire Station Relocation and Housing Project would be considered less than significant.

<u>Impact AQ-4</u>: Operation of the proposed SFMOMA Expansion and Fire Station Relocation and Housing Project could violate an air quality standard or contribute substantially to an existing or projected air quality violation. (Less Than Significant)

Long-term criteria air pollutant emission impacts would be those associated with changes in permanent usage of the project sites. Mobile source emissions would result from vehicle trips associated with the proposed projects. Area source emissions would result from project-related operational increases in energy (natural gas and electricity) use for the proposed projects.

The CalEEMod Version 2011.1.1 computer program was used to calculate long-term emissions associated with the proposed projects. Project operational emissions for the proposed projects are based on trip generation numbers provided in the transportation study. According to the study, on a peak attendance day (Saturday) the SFMOMA Expansion would generate a total of 2,695 person trips of which, after accounting for a reduction in trips due to transit trips and other alternative modes of travel, 962 would be vehicle trips. The proposed housing project would generate 130 person trips. Trips generated by the fire station relocation would not be new regional trips (as the existing Fire Station No. 1 located at 676 Howard Street generates approximately the same number of trips that would be generated as part of the project). However, in order to evaluate a worst case scenario, the 170 fire station-related trips were included in the analysis. Project-related long-term stationary emissions from natural gas and electricity use are also included in the calculation, in addition to emissions from the proposed emergency generator. CalEEMod output sheets are included in the Air Quality Technical Report included in Appendix C.

The daily increase in emissions associated with operation of the proposed projects (project-related trip generation and operational increases in energy use) is identified in Table IV.F-5 for ROG and NO_x (two precursors of ozone) and particulate matter (PM_{10} and $PM_{2.5}$). Annual emissions are shown in Table IV.F-6. The BAAQMD has established thresholds of significance for ozone precursors and $PM_{2.5}$ of up to 54 pounds per day (or 10 tons per year) and up to 82 pounds per day for PM_{10} (or 15 tons per year). Project-related emissions shown in Tables IV.F-5 and IV.F-6 would not exceed these thresholds of significance for ROG, NO_x or PM_{10}. Therefore, the proposed projects would have a less-than-significant impact on regional emissions of ROG, NO_x, or PM_{10}.

Similar to existing conditions at the existing station located at 676 Howard Street, firefighters would test equipment in front of the proposed relocated fire station, including starting and running the fire trucks for a period of time. Emissions associated with fire station operations would be similar to existing conditions on a regional level; however, associated emissions are included in the health risk assessment to determine localized impacts that could result from the fire station relocation.

Table IV.F-5: Project Operational Emissions in Pounds Per Day

Land Use	Pollutant Emissions (pounds/day)			
	Reactive Organic Gases	Nitrogen Oxides	PM_{10}	$PM_{2.5}$
Proposed SFMOMA Expansion Project				
Area	6.5	0.0	0.0	0.0
Energy	0.2	1.6	0.1	0.1
Mobile	4.5	7.8	5.6	0.4
Total SFMOMA Expansion Project Operational Emissions	11.2	9.4	5.7	0.5
Proposed Fire Station Relocation and Housing Project				
Area	0.5	0.0	0.0	0.0
Energy	2.8	26.0	2.0	2.0
Mobile (Includes On-road Fire Truck Emissions)	2.6	5.0	3.8	0.3
Daily Equipment Testing	9.2	6.1	0.5	0.5
Emergency Generator	0.2	1.5	0.0	0.0
Proposed Fire Station Relocation and Housing Project Operational Emissions	15.3	39.6	6.3	2.8
Total Project Emissions – Both Projects	26.2	48.4	12.0	3.3
BAAQMD Operational Significance Threshold	**54.0**	**54.0**	**82.0**	**54.0**
Exceed Threshold? (Yes/No)	**No**	**No**	**No**	**No**

Source: LSA Associates, Inc., 2011.

Table IV.F-6: Project Operational Emissions in Tons Per Year

Sources	Pollutant Emissions (tons/year)			
	Reactive Organic Gases	Nitrogen Oxides	PM_{10}	$PM_{2.5}$
Proposed SFMOMA Expansion Project				
Area	1.20	0.00	0.00	0.00
Energy	0.03	0.30	0.02	0.02
Mobile	0.75	1.40	0.83	0.08
Total SFMOMA Expansion Project Operational Emissions	1.98	1.70	0.85	0.10
Proposed Fire Station Relocation and Housing Project				
Area	0.08	0.00	0.00	0.00
Energy	0.52	4.70	0.36	0.36
Mobile (Includes On-road Fire Truck Emissions)	0.43	0.88	0.55	0.05
Daily Equipment Testing	1.70	1.10	0.09	0.09
Emergency Generator	0.08	0.28	0.00	0.00
Total Fire Station Relocation and Housing Project Operational Emissions	2.81	6.96	1.0	0.50
Total Project Emissions – Both Projects	**4.79**	**8.66**	**1.85**	**0.60**
BAAQMD Operational Significance Threshold	**10.00**	**10.00**	**15.00**	**10.00**
Exceed? (Yes/No)	**No**	**No**	**No**	**No**

Source: LSA Associates, Inc., 2011.

<u>Impact AQ-5</u>: The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project would not result in substantial levels of CO and would not make a cumulatively considerable contribution to existing levels of CO. (Less Than Significant)

The BAAQMD has established a screening methodology that provides a conservative indication of whether the implementation of a proposed project would result in significant CO emissions. According to the BAAQMD's CEQA Guidelines, a proposed project would result in a less- than-significant impact to localized CO concentrations if the following screening criteria are met:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, and the regional transportation plan and local congestion management agency plans.
- Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The proposed projects would not conflict with the Metropolitan Transportation Commission for designated roads or highways, regional transportation plan, or other agency plans, as level of service would not significantly deteriorate on any regional roadway. In addition, traffic volumes on roadways in the vicinity of the project sites are less than 44,000 vehicles per hour and the projects are expected to generate a maximum of less than 300 peak hour vehicle trips. Therefore, the proposed projects would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour and would not result in localized CO concentrations that would exceed State or federal standards.

<u>Impact AQ-6a</u>: Construction of the proposed SFMOMA Expansion would not expose sensitive receptors to substantial pollutant concentrations and result in a considerable contribution to cumulatively significant levels of $PM_{2.5}$ and toxic air contaminants on off-site receptors. (Less Than Significant)

Construction Emissions Health Risk Assessment

As described above, site preparation activities, such as demolition, excavation, grading, foundation construction, and other ground-disturbing construction activity would affect localized air quality during the construction phases of the proposed projects. Emissions from construction equipment would include directly-emitted particulate matter ($PM_{2.5}$ and PM_{10}), and toxic air contaminants such as diesel exhaust particulate matter. As shown in Table IV.F-4, emissions of these pollutants would not exceed the significance criteria for regional emissions. However, diesel exhaust particulate mater could expose sensitive receptors to substantial pollutant concentrations of toxic air contaminants, resulting in an increased health risk.

To estimate the potential health risks associated with construction of the proposed projects, a dispersion model was used to translate the emissions from the source location to a concentration at the receptor locations in the vicinity of the project sites. The closest receptor location in this modeling assessment is considered the Maximum Exposed Individual (MEI). The vicinity of the SFMOMA Expansion contains a mixture of uses, with many restaurants, museums, and office buildings. Sensitive receptors include the St. Regis Hotel and Residences, located immediately north of the SFMOMA Expansion site and the Paramount Apartments, located approximately 250 feet northeast of the SFMOMA Expansion site. The residents of One Hawthorne are located approximately 300 feet southeast of the project site. The Academy of Art University is also located east and north of the site. The Fire Station and Relocation and Housing Project site is also in a mixed use neighborhood, with residential units located throughout the area, the closest being on Falmouth Street, approximately 20 feet from the Fire Station Relocation and Housing Project site.

For the purposes of this assessment, diesel equipment exhaust at each project site was modeled as a single source which covered the size of the construction site. Two receptor grids were established, one at 5 feet to represent adult breathing height and the other at 65 feet to represent the upper floors of nearby residences. Meteorological data representing the conditions for the project study area were obtained from the Mission Bay Station meteorological reporting site (Site ID: 5803, 300 meter mixing height) for the years 2004 and 2005.

The maximum incremental cancer risk from exposure to DPM was calculated following the guidelines established by OEHHA. Assuming that the emissions of PM_{10} exactly represent DPM, the equation used to determine exposure to DPM through inhalation is presented below:

Inhalation cancer risk = (Cair * DBR * A * EF * ED * $1x10^{-6}$) / AT * Inhalation Cancer Potency Factor, where:

C_{air}	=	Concentration of PM_{10} in air
DBR	=	Adult Daily breathing rate
A	=	Inhalation absorption factor
EF	=	Exposure frequency
ED	=	Exposure duration
AT	=	Averaging time period over which exposure is averaged in days (25,550 days for a 70-year cancer risk)
CRAF	=	Cancer Risk Adjustment Factor

Source: OEHHA Guidelines, August 2003 and BAAQMD's Recommended Methods for Screening and Modeling Local Risks and Hazards, May 2010

Modeling results were used to determine the annual average concentration of DPM in the air during construction activities. For residential risk, the BAAQMD-recommended 80th percentile breathing rate of 302L/kg-day, which was used in the equation and the exposure frequency, was assumed to be 350 days per year.[24] Exposure duration was assumed to be 70 years for operations and 2 years for construction. The inhalation absorption factor was based on the conservative assumption that all pollution would be absorbed. To determine incremental cancer risk, the estimated dose through inhalation was multiplied by the OEHHA-established cancer potency slope factor for DPM, which is 1.1 $(mg/kg\text{-}day)^{-1}$. Results include the Cancer Risk Adjustment Factor (CRAF), which is an age-sensitive factor derived by the BAAQMD to account for the exposure of prenatal and very young children. For the 2-year construction health risk assessment, a CRAF of 10 was applied, while for the long-term 70 year analysis, a CRAF of 1.7 was applied.

Non-cancer health risk is based on a hazard index for both acute (short-term) and chronic (long-term) exposures. The hazard index is established by the OEHHA and is the ratio of the predicted incremental exposure concentration from project emissions to the referenced exposure level (REL) that could cause adverse health effects. The REL is the inhalation exposure concentration at which no adverse health effects would be anticipated following exposure. The OEHHA has established a diesel exhaust chronic REL of 5.0 μg/m^3. This REL represents the level below which exposure to DPM would not result in adverse health effects.

The chronic risk level is calculated as follows:

Inhalation chronic risk = C_{air} / Inhalation Chronic REL

where: C_{air} = annual concentration of DMP and Inhalation Chronic REL = 5.0

The hazard quotient for each of the non-carcinogenic substances from project emissions is then added to produce a Hazard Index. A Hazard Index of greater than one is considered significant. The REL is then compared to the annual average exposure of the MEI to determine the Hazard Index for that individual.

Acute Emission Impacts

Similarly, the acute hazard index is established by the OEHHA and is the ratio of the predicted incremental exposure concentration to the referenced exposure level (REL) that could cause adverse acute health effects. The Acute REL is the inhalation exposure concentration at which no adverse acute health effects would be anticipated following exposure. For instance, the OEHHA has established an acrolein Acute REL of 2.5 μg/m^3. This REL represents the level below which exposure to acrolein would not result in adverse health effects.

The acute risk level is calculated as follows:

Inhalation chronic risk = C_{air} / Inhalation Acute REL

where: C_{air} – 1 hour concentration of acrolein and Inhalation Acute REL = 2.5

This is repeated for all TACs with acute RELs and the resulting acute hazard indices at each receptor added up and reported as the total acute hazard index. Using the same methodology to determine the

[24] *Air Toxics NSR Program Health Risk Screening Analysis Guidelines*, BAAQMD, January 2010. This document is available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

concentrations of TACs at all receptors of interest, concentrations of $PM_{2.5}$ have been calculated. The concentrations of $PM_{2.5}$ were then compared with the appropriate BAAQMD thresholds to determine significance.

Carcinogenic and Chronic Impacts

Existing residents in the vicinity of the SFMOMA Expansion would be exposed to TAC emissions generated during construction of the project. It should be noted that this is a conservative analytic assumption as it assumes that the MEI would be exposed to the annual average concentration of TAC emissions throughout the construction period, when during the actual construction process equipment location would vary within the project site (and TAC concentrations around the site would change). The comprehensive receptor grid described above allows the examination of TAC concentrations throughout the area surrounding the construction site. The condominiums of the St. Regis Hotel and Residences, the Paramount Apartments, and One Hawthorne were evaluated in the health risk assessment. As shown in Table IV-F-7, the MEI (in this case, the Paramount Apartments) would be exposed to an incremental cancer risk of 0.37 in one million, which is below the threshold of 10 in one million. TAC exposure from the SFMOMA Expansion construction emissions would result in a chronic hazard index of 0.00098, which is well below the BAAQMD threshold of 1.0; therefore, chronic non-cancer health impacts at existing residential receptors would be less than significant. Results of the analysis also indicate that the maximum $PM_{2.5}$ concentration would be 0.00049$\mu g/m^3$ near the SFMOMA site, which is below the BAAQMD's significance threshold of 0.3 $\mu g/m^3$. Therefore, $PM_{2.5}$ concentrations from construction-related DPM emissions would be less than significant and no mitigation would be required. ISCST3 model output sheets for construction of the SFMOMA Expansion are included in Appendix C.

Although – compared to the Paramount Apartments – the St. Regis Hotel and Residences are located closer to the proposed SFMOMA Expansion site, directly across Minna Street, the Paramount Apartments, located just under 300 feet from the site, would be exposed to higher construction emission concentrations and a higher health risk. The lower concentrations at the St. Regis would primarily be due to the fact that the residents of the St. Regis are located above the 21st floor, which allows for dilution of pollutant concentrations in the air prior to reaching the level of the actual residences. Hotel rooms on lower levels are not considered sensitive receptors.

Table IV.F-7: SFMOMA Expansion Inhalation Health Risks from Project Construction

MEI Location	Carcinogenic Inhalation Health Risk with CRAF	Chronic Inhalation Hazard Index	Acute Inhalation Health Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Paramount Apartments	0.37 in 1 million	0.0098	0.0010	0.00049
St. Regis Hotel and Residences	0.0021 in 1 million	4.7×10^{-6}	8.8×10^{-6}	2.3×10^{-5}
Threshold	**10 in one million**	**1.0**	**1.0**	**0.30**
Exceed Threshold? (Yes/No)	**No**	**No**	**No**	**No**

Note: CRAF = Cancer Risk Adjustment Factor

Source: LSA Associates, Inc. June 2011.

<u>Impact AQ-6b</u>: **Construction of the proposed Fire Station Relocation and Housing Project could expose sensitive receptors to substantial pollutant concentrations and result in a considerable contribution to cumulatively significant levels of $PM_{2.5}$ and toxic air contaminants. (Significant and Unavoidable)**

The analysis of inhalation health risks associated with construction of the Fire Station Relocation and Housing Project includes an analysis of the health risk to residents located approximately 20 feet from the proposed fire station and also represents future residents of the site, assuming – conservatively – that the housing project would be built and occupied prior to the completion of the fire station. Model results are shown in Table IV.F-8. The incremental increase in inhalation cancer risk associated with the MEI near the construction site would be 12 in one million, which is above the threshold of 10 in one million. The maximum chronic hazard index would be 0.026, well below the threshold of 1.0. Table IV.F-8 also shows that the maximum $PM_{2.5}$ concentration from construction activities on the Fire Station Relocation and Housing Project site would be 0.013 $\mu g/m^3$ which is below the significance threshold of 0.3 $\mu g/m^3$. Therefore, $PM_{2.5}$ concentrations from construction-related DMP emissions would be less than significant. However, the inhalation cancer risk would exceed the BAAQMD's established threshold and would be considered significant. Therefore, mitigation to reduce this impact would be required. ISCST3 model output sheets for construction of the Fire Station Relocation and Housing Project are included in Appendix C.

Table IV.F-8: Fire Station Relocation and Housing Project Inhalation Health Risks from Project Construction

MEI Location	Carcinogenic Inhalation Health Risk with CASF	Chronic Inhalation Hazard Index	Acute Inhalation Health Index	Annual PM2.5 Concentration ($\mu g/m^3$)
Residents located 20 feet from the Fire Station Relocation and Housing Project site	12 in 1 million	0.026	0.008	0.013
Threshold	**10 in one million**	**1.0**	**1.0**	**0.30**
Exceed Threshold? (Yes/No)	**Yes**	**No**	**No**	**No**

Note: CASF = Cancer Age Sensitivity Factors

Source: LSA Associates, Inc. April 2011.

Mitigation Measure AQ-6: To reduce the health risk associated with construction of the Fire Station Relocation and Housing Project, all off-road construction equipment shall be equipped with Tier 3 (Tier 2 if greater than 750 hp) diesel engines or better. The following types of equipment were identified as candidates for retrofitting with CARB-certified Level 3 verified diesel emission controls (Level 3 VDECs, which are capable of reducing DPM emissions by 85 percent or better), due to their expected operating modes (i.e., fairly constant use at high revolution per minute):

- Excavators
- Backhoes
- Rubber-Tired Bulldozers
- Concrete Boom Pumps
- Concrete Trailer Pumps
- Concrete Placing Booms
- Soil Mix Drill Rigs
- Soldier Pile Rigs
- Shoring Drill Rigs

All diesel generators used for project construction shall meet Tier 4 emissions standards. To the extent that the above listed types of equipment are used for project construction, those equipment types shall be required to meet DPM emission standards equivalent to Tier 3 (Tier 2 if greater than 750 hp) engines with Level 3 VDECs, if feasible. For the purposes of this mitigation measure, "feasibility" refers to the availability of newer equipment in the subcontractor's fleet that meets these standards, or the availability of older equipment in the subcontractor's fleet that can be feasibly modified to incorporate Level 3 VDECs. It should be noted that for specialty equipment types (e.g. drill rigs, shoring rigs and concrete pumps) it may not be feasible for construction contractors to modify their current, older equipment to accommodate the particulate filters, or for them to provide newer models with these filters preinstalled. Therefore, this mitigation measure may be infeasible. Should it be determined by the construction contractor or their subcontractors that compliance with the emissions control requirements of this mitigation measure is infeasible for any one of the above listed construction equipment, the construction contractor shall demonstrate an alternative method of compliance that achieves an equivalent reduction in the project's fleetwide DPM and other TAC emissions. If alternative means of compliance with the emissions exhaust requirements are further determined to be infeasible, the construction contractor shall document, to the satisfaction of the Environmental Review Officer, that the contractor has complied with this mitigation measure to the extent feasible and why full compliance with the mitigation measure is infeasible.

Mitigation Measure AQ-6 calls for all off-road construction equipment to be equipped with Tier 3 diesel engines or better. Because the analysis is based on default construction equipment and a site-specific construction equipment inventory was not available at the time of this analysis, it is not possible to quantify the resulting reduction in DPM for the mitigated scenario. However, even with implementation of the most effective measures to reduce DPM emissions, (which would occur if Level 3 VDECs were applied to all off-road construction equipment), construction health risks may not be mitigated to below the excess incremental cancer risk significance threshold of 10 in a million. Therefore, even with all feasible mitigation, the project's construction emissions would remain a significant and unavoidable health risk to nearby sensitive receptors.

Impact AQ-7: The proposed Fire Station Relocation and Housing Project could expose new (on-site) sensitive receptors to substantial pollutant concentrations in the form of cumulatively considerable levels of $PM_{2.5}$ and toxic air contaminants from on-site and off-site sources. (Less Than Significant)

The Fire Station Relocation and Housing Project could locate new sensitive receptors near existing sources of toxic air contaminants associated with both stationary sources and roadway DPM emissions. The BAAQMD has established a significance threshold for individuals exposed to an increased incremental cancer risk per individual toxic air contaminant source of 10 in one million and/or non-cancer risk hazard indices greater than or equal to one.

To determine the increased health risk to future residents of the project site, a health risk assessment was conducted for the 13 proposed residences which would be located south of the fire station. This HRA includes emissions of $PM_{2.5}$ and TACs from the following sources: existing stationary sources as identified by BAAQMD and Planning Department staff, TAC emissions from vehicles operating on high volume roadways, and diesel emissions from the proposed fire station emergency generator. Stationary sources included this analysis are listed in Table IV.F-9. TACs analyzed include acetaldehyde, acrolein, benzene, 1,3-butadiene, ethylbenzene, formaldehyde, hexane, methanol, methyl ethyl ketone, naphthalene, propylene, styrene, toluene, and xylenes.

Table IV.F-9: Stationary Sources within 1,000 Feet of Receptor

Stationary Source Name	Location	Distance from Proposed Residences on Shipley Street (feet)
The Moscone Center	747 Howard Street	860
CDC San Francisco LLC	888 Howard Street	915
Knox SRO	241 6th Street	975
Salvation Army Silver Crest	133 Shipley Street	1000
Howard Street Assoc LLC c/o TMG Partners	875 Howard Street	975
Shell Oil Company	300 5th Street	365
Carlos Arroyo & Sons	980 Folsom Street	390
The Salvation Army	832 Folsom Street	625
Bee Automotive	240 6th Street	625
Bryant Auto Body, LLC	974 Folsom Street	700
Chevron Station # 90087	1000 Harrison Street	725
AT&T Mobility /AT&T Services	951 Howard Street	790
Eugene Coleman Community House	328 Tehama Street	960
840 Harrison Street Properties, LLC	840 Harrison Street	1,000

Source: BAAQMD, Stationary Source Screening Analysis Tool, June, 2011.

The same receptor grids and meteorological data files used for the construction HRA were used for this assessment. Vehicle emissions for local roadways with average daily traffic (ADT) of 10,000 vehicles or more and within 1,000 feet of the project site were modeled including Interstate 80 (I-80) and Sixth, Fifth, Howard, Folsom, and Harrison Streets. For the purposes of this analysis, perimeter roadways were modeled as discrete sources located along the lanes closest to the proposed residences. This simplifies the modeling and also makes the results of the analysis more conservative (overstating the health risk levels) by modeling vehicles that are actually spread over various number of lanes of traffic as if they all travel in the lane closest to the residence. The modeled roadway sources were extended beyond the project study area, allowing the model to account for variations in wind direction. The derivation of the PM_{10}, ROG and $PM_{2.5}$ emission rates for vehicles on modeled roadways was based on the total ADT and the average speed from the CARB's EMFAC2007 model, details of which can be found in the Air Quality Technical Report (Appendix C).

The ISCST-3 air dispersion model was used, utilizing unit emissions for each source. The HARP health risk assessment post-processor was then used to process the air dispersion modeling results to produce the various health risk levels to the future residents of the site. The HARP model allows for only a single emission rate for the entire 70-year health risk evaluation period; therefore, a median set of emission factors from the year 2025 was used to represent the long-term 70-year evaluation period. The age sensitivity factor developed by the BAAQMD to account for exposure of prenatal and very young children was then applied to the HARP results.

Carcinogenic and Chronic Impacts. The results for carcinogenic and chronic impacts are shown in Table IV.F-10. Results of the analysis indicate that the single source with the highest risk would be from the fire station equipment testing, with a risk level of 1.19 in one million, which is less than the threshold of 10 in one million. The Chronic Hazard Index would also be below the threshold at 0.0011.

Cumulative results of the analysis indicate that the total inhalation cancer risk at the proposed residential units on the Fire Station Relocation and Housing Project site would be 2.41 in one million, which is less than the threshold of 100 in one million. The cumulative maximum chronic hazard indices would be 0.00152, below the chronic index threshold of 10.0.

Acute Emission Impacts. The acute inhalation Hazard Index standard for noncarcinogenic TACs is 1.0. As shown in Table IV.F-9, the maximum acute Hazard Index would be 7.45E-05, which is below the threshold of 1.0. Therefore, the potential for short-term acute exposure would be less than significant.

Table IV.F-10 also shows that the peak annual concentration of $PM_{2.5}$ from the single largest source to future residents would be 8.28E-04 μg/m^3. This is below the significance threshold of 0.20 μg/m^3. Therefore, $PM_{2.5}$ concentrations to which future residents of the site would be exposed would be less than significant.

Table IV.F-10: Inhalation Health Risks to Future Residents of the Project

Emissions Source	Carcinogenic Inhalation Health Risk (with CRAF)	Chronic Inhalation Health Index	Acute Inhalation Health Index	Annual $PM_{2.5}$ Concentration (μg/m^3)
Fire Station Sources				
Daily Equipment Testing	1.19 in 1 million	0.0011	0.014	0.00020
Emergency Generator	0.000074 in 1 million	2.75E-08	1.77E-09	1.45E-09
Roadway Vehicle Exhaust				
Sixth Street Traffic	0.084 in 1 million	2.84E-05	5.89E-06	1.69E-04
I-80 Traffic	0.68 in 1 million	2.42E-04	7.45E-05	8.28E-04
Fifth Street Traffic	0.033 in 1 million	1.10E-05	5.30E-06	6.58E-05
Howard Street Traffic	0.027 in 1 million	9.22E-06	4.19E-06	5.71E-05
Folsom Street Traffic	0.13 in 1 million	4.42E-05	7.86E-06	2.65E-04
Harrison Street Traffic	0.048 in 1 million	1.62E-05	7.72E-06	9.64E-05
Permitted Stationary Sources within 1,000 feet				
The Moscone Center	0.0019 in 1 million	7.05E-07	1.64E-08	3.23E-07
CDC San Francisco LLC	0.0010 in 1 million	3.87E-07	1.45E-08	1.75E-07
Knox SRO	0.015 in 1 million	5.64E-06	1.64E-08	2.59E-06
Salvation Army Silver Crest	0.0023 in 1 million	8.36E-07	2.13E-08	3.84E-07
Howard Street Assoc LLC c/o TMG Partners	0.0011 in 1 million	3.91E-07	1.34E-08	1.79E-07
Shell Oil Company	0.12 in 1 million	5.03E-05	3.66E-04	0.00E+00
Bryant Auto Body, LLC	0.000059 in 1 million	6.71E-07	2.27E-05	0.00E+00
Chevron Station # 90087	0.0740 in 1 million	2.98E-05	2.82E-04	0.00E+00
AT&T Mobility /AT&T Services	0.0000 in 1 million	7.78E-09	1.62E-08	3.34E-09
Eugene Coleman Community House	0.0001 in 1 million	4.66E-08	1.05E-08	2.14E-08
Total 70-Year Risk Levels	**2.41 in 1 million**	**1.52E-03**	**1.45E-02**	**1.69E-03**
Threshold	**100 in 1 million**	**10.0**	**10.0**	**0.80**
Exceed Threshold? (Yes/No)	**No**	**No**	**No**	**No**

Note: CRAF= Cancer Risk Adjustment Factor

Shaded cells are those corresponding to the individual source with the highest risk levels.

Source: LSA Associates, Inc., 2011.

As discussed in the Regulatory Setting section above, the San Francisco Health Code Article 38 requires an air quality assessment to evaluate the concentration of $PM_{2.5}$ from local roadway traffic that may affect a residential development site. If the air quality assessment indicates that the concentration of $PM_{2.5}$ at the site would be greater than 0.2 $\mu g/m^3$, 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 resulting $PM_{2.5}$ associated with roadway concentrations at the project site would also be below the 0.2 $\mu g/m^3$ concentration requirement established by Article 38 of the San Francisco Health Code. Therefore, measures to reduce this impact would not be required.

As shown in Table IV.F-10, the exposure level to future residents of the housing component of the Fire Station Relocation and Housing Project from all known individual sources of TACs in the project vicinity would result in a maximum risk level that is below the BAAQMD's carcinogenic criteria of significance (10 in one million), the chronic and acute hazard indices of 1.0, and the $PM_{2.5}$ threshold of 0.3 $\mu g/m^3$.

Emission exposure levels for SFFD personnel employed at the relocated fire station would be less than those at the existing fire station. The new station would be located within 1,000 feet of 10 emission sources identified by the BAAQMD, resulting in a total risk of 2.31 in one million risk level (assuming a 70 year exposure duration) in comparison to the existing fire station site that has 15 identified sources with a total risk level of 52 in one million. The new station is closer to some high volume traffic sources, such as I-80. However, the health risk assessment indicates that the increase in acute or chronic cancer health risk associated with these sources would minimal. Therefore, relocated SFFD personnel would not be exposed to a substantial increase in pollutant concentrations at the relocated fire station.

Impact AQ-8: The proposed Fire Station Relocation and Housing Project would emit toxic air contaminants and $PM_{2.5}$, but not at levels that would result in significant impacts to nearby sensitive receptors. (Less Than Significant)

An analysis of the proposed operations at the fire station was performed for the new on-site receptors as described under Impact AQ-7 above. The existing residents surrounding the project site would also be exposed to increased emission concentrations with implementation of the project. A summary of the increased risk levels is shown in Table IV.F-11.

Table IV.F-11: Inhalation Health Risks to Residents in the Vicinity of the Project Site

Emissions Source	Carcinogenic Inhalation Health Risk (with CRAF)	Chronic Inhalation Health Index	Acute Inhalation Health Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Fire Station Sources				
Daily Equipment Testing	1.19 in 1 million	0.0011	0.014	0.00020
Emergency Generator	0.000074 in 1 million	2.75E-08	1.77E-09	1.45E-09

Note: CRAF= Cancer Risk Adjustment Factor

Source: LSA Associates, Inc., 2011.

As shown in Table IV.F-11 above, the operations of the relocated fire station would not significantly affect off-site receptors.

Impact AQ-9: Implementation of the proposed SFMOMA Expansion and Fire Station Relocation and Housing Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute, in a considerable manner, to adverse cumulative air quality impacts. (Less Than Significant)

Cumulative Construction Emission Impacts

The projects would contribute criteria pollutants to the area during temporary project construction. Depending on construction schedules and actual implementation of projects in the area, generation of fugitive dust and pollutant emissions during construction could result in substantial short-term increases in air pollutants. However, each project would be required to comply with the BAAQMD's standard construction measures and the City's Dust Control Ordinance. Therefore, the proposed projects would have a less than significant short-term cumulative impact on regional fugitive dust emissions.

Cumulative Operational Impacts

As shown in Tables IV.F-5 and IV.F-6, above, the proposed projects – taken together – would generate less-than-significant volumes of regional emissions. According to the BAAQMD, a project that results in regional emissions that exceed the significance criteria would also result in a cumulatively considerable impact. A project that would individually result in less-than-significant impacts would also then not result in a cumulatively considerable impact. As shown in the project-specific air quality impacts discussion above, the proposed projects would not result in individually significant impacts and therefore would also not make a cumulatively considerable contribution to regional air quality impacts.

<u>Impact AQ-10</u>: Implementation of the proposed SFMOMA Expansion and Fire Station Relocation and Housing Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute in a considerable manner to adverse cumulative health risk impacts. (Less Than Significant)

Cumulative Toxic Emission Impacts

Construction Emissions. Cumulative construction impacts are the sum of emissions from project construction, known construction projects within 1,000 feet, and existing stationary, roadway and non-permitted sources in the project vicinity.

There are numerous potential construction sites within the vicinity of the SFMOMA Expansion and Fire Station Relocation and Housing Project sites. Four construction sites have been identified within 1,000 feet of the MEI for the SFMOMA Expansion, while 17 potential cumulative construction sites have been identified within 1,000 feet of the MEI for the Fire Station Relocation and Housing Project. Table IV.F-12 lists these projects, with the distance from the MEI noted.

Detailed construction emissions for these projects are not available, so for purposes of this analysis the methodology described in the BAAQMD's Screening Tables for Air Toxics Evaluation During Construction[25] was used to estimate the potential contribution of cumulative construction projects to health risk levels, hazards, and $PM_{2.5}$ concentrations. Results are shown in Table IV.F-12. In most cases, the distance from the cumulative construction project to each MEI is greater than the minimum offset screening distance, which indicates that the potential health effect on the MEI from the proposed cumulative construction projects would be much lower than the individual source thresholds. However, five of the cumulative construction projects are within the BAAQMD screening distance and for purposes of this analysis are assumed to contribute a 10 in one million carcinogenic risk, 0.1 chronic hazard index, and 0.1 μg/m^3 of $PM_{2.5}$.

Table IV.F-12: Potential Construction Projects Within 1,000 Feet of Project Sites

Project Location	Project Characteristics	Offset Required for Combined Risk w/ CRAF (m)	Distance from MEI (m)	Distance to MEI shorter than minimum offset distance?
SFMOMA Expansion				
49 Kearny Street	Residential	100	140	No
706 Mission Street	Mixed	175	160	Yes
134-140 New Montgomery Street	Mixed	175	240	No
2 New Montgomery Street	Residential	250	100	Yes
Fire Station Relocation and Housing Project				
938 Howard Street	Mixed	175	260	No
226 Sixth Street	Residential	175	240	No
42 Harriet Street	Residential	125	270	No
48 Harriet Street	Residential	95	260	No
260 Fifth Street	Mixed	175	180	No
900 Folsom Street	Mixed	175	140	Yes
468 Clementina Street	Residential	125	140	No
452 Tehama Street	Mixed	125	190	No
870 Harrison Street	Mixed	125	260	No
397 Fifth Street	Mixed	125	190	No
205 Shipley Street	Mixed	175	120	Yes
345 Sixth Street	Mixed	125	130	No
935 Folsom Street	Mixed	125	60	Yes
854 Folsom Street	Mixed	95	270	No
374 Fifth Street	Residential	125	160	No
960 Harrison Street	Residential	95	120	No
200-214 Sixth Street	Residential	125	270	No

Source: LSA Associates, Inc., 2011.

[25] BAAQMD, 2011.

As described above, the stationary permitted sources and mobile emissions for roadways surrounding the relocated fire station and new residential site were modeled. These results were added to the health risk levels calculated for the construction of the relocated fire station and new residential site. The approximated cumulative health risk levels of all the construction operations are shown in Tables IV.F-13 and IV.F-14.

Table IV.F-13: SFMOMA Expansion Project Cumulative Health Risks from Project Construction

Emissions Source	Carcinogenic Inhalation Health Risk with CRAF	Chronic Inhalation Health Index	Acute Inhalation Health Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
SFMOMA Expansion Construction	0.40 in 1 million	0.0011	0.0022	0.00030
Traffic on Major Roadways	1.0 in 1 million	0.00035	0.00011	0.0015
Permitted Stationary Sources	52 in 1 million	0.15	0.00067	0.06
Cumulative Construction Projects	20 in 1 million	0.2	0.2	0.2
Cumulative Total At Paramount Apartments	73.4 in 1 million	0.20	0.20	0.26
BAAQMD Cumulative Threshold	**100 in 1 million**	**10**	**10**	**0.80**
Exceed Threshold? (Yes/No)	**No**	**No**	**No**	**No**

Note: CRAF = Cancer Risk Age Factors

Source: LSA Associates, Inc. June 2011.

Table IV.F-14: Fire Station and Relocation Project Cumulative Health Risks from Project Construction

Emissions Source	Carcinogenic Inhalation Health Risk with CRAF	Chronic Inhalation Health Index	Acute Inhalation Health Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Fire Station Relocation and Housing Project Construction	9.8 in 1 million	0.026	0.037	0.011
Traffic on Major Roadways	1.0 in 1 million	0.00035	0.00011	0.0015
Permitted Stationary Sources	2.31 in 1 million	0.03	0.00067	0.12
Cumulative Construction Projects	30 in 1 million	0.3	0.3	0.3
Cumulative Total Across Falmouth Street, 20 feet from the Fire Station Relocation and Housing Project Construction site	41 in 1 million	0.33	0.34	0.31
BAAQMD Cumulative Threshold	**100 in 1 million**	**10**	**10**	**0.80**
Exceed Threshold? (Yes/No)	**No**	**No**	**No**	**No**

Note: CRAF = Cancer Risk Age Factors

Source: LSA Associates, Inc. June 2011.

These tables show a summary of the lifetime excess cancer risk, chronic non-cancer health index, and $PM_{2.5}$ concentrations for all sources evaluated at the MEI for each construction site. In all cases the estimated cumulative cancer risk, chronic noncancer hazard index and $PM_{2.5}$ concentrations are below the BAAQMD CEQA cumulative thresholds of 100 in one million, 1.0, and 0.8 $\mu g/m^3$, respectively. Therefore, the construction of the proposed projects in combination with cumulative construction projects and existing sources would not make a considerable contribution to a cumulative air quality impact.

Cumulative Operational Health Risk Assessment. As shown in Table IV.F-10, the sum of all health risks from stationary and mobile sources in the vicinity of the residential component of the Fire Station Relocation and Housing Project vicinity would be 2.41 in one million, which is well below the cumulative threshold of 100 in one million. Also shown in Table IV.F-10, the total cumulative emissions would also be well below the chronic inhalation health index and acute inhalation index, and would not result in annual $PM_{2.5}$ concentrations that would exceed the established thresholds. Therefore, implementation of the residential uses associated with the Fire Station Relocation and Housing Project would not result in considerable cumulative health risk impacts. The SFMOMA Expansion project does not include residential uses; therefore there would be no cumulative operational health risk impacts associated with the SFMOMA Expansion project.

G. GREENHOUSE GAS EMISSIONS

This section discusses the anticipated contribution of the proposed SFMOMA Expansion and Fire Station Relocation and Housing Project to greenhouse gas (GHG) emissions.

Setting

The following section defines GHGs and discusses federal, State, regional, and local policies that seek to reduce GHG emissions.

Greenhouse Gases

Gases that trap heat in the atmosphere are referred to as GHGs because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHGs has been implicated as the driving force for global climate change. The primary GHGs are carbon dioxide, methane, nitrous oxide, ozone, and water vapor.

While the primary GHGs in the atmosphere are naturally occurring, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) are largely emitted from human activities, accelerating the rate at which these compounds occur within earth's atmosphere. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural practices and landfills. Other GHGs include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes. Greenhouse gases are typically reported in "carbon dioxide-equivalent" measures (CO_2E).[1]

There is international scientific consensus that human-caused increases in GHGs have and will continue to contribute to global warming. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to

[1] Because of the differential heat absorption potential of various GHGs, GHG emissions are frequently measured in "carbon dioxide-equivalents," which present a weighted average based on each gas's heat absorption (or "global warming") potential.

include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.[2]

The Air Resources Board (ARB) estimated that in 2006 California produced about 484 million gross metric tons of CO_2E ($MMTCO_2E$), or about 535 million U.S. tons.[3] The ARB found that transportation is the source of 38 percent of the State's GHG emissions, followed by electricity generation (both in-State and out-of-State) at 22 percent, and industrial sources at 20 percent. Commercial and residential fuel use (primarily for heating) accounted for 9 percent of GHG emissions.[4] In the Bay Area, fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) and the industrial and commercial sectors are the two largest sources of GHG emissions, each accounting for approximately 36 percent of the Bay Area's 95.8 $MMTCO_2E$ emitted in 2007.[5] Electricity generation accounts for approximately 16 percent of the Bay Area's GHG emissions followed by residential fuel usage at 7 percent, off-road equipment at 3 percent, and agriculture at 1 percent.[6]

Regulatory Setting

Federal, State, regional, and local policies related to GHG emissions are described below.

Federal Policies. Currently, there is no federal legislation requiring reductions in GHG emissions. Rather, the United States Environmental Protection Agency (EPA) administers a variety of voluntary programs and partnerships with GHG emitters in which the EPA partners with industries producing and utilizing synthetic GHGs to reduce emissions of particularly potent GHGs. There are federal

[2] California Climate Change Portal. Frequently Asked Questions About Global Climate Change. Available online at: http://www.climatechange.ca.gov/publications/faqs.html. Accessed November 8, 2010.

[3] California Air Resources Board (ARB). "California Greenhouse Gas Inventory for 2000-2006— by Category as Defined in the Scoping Plan." http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_2009-03-13.pdf. Accessed March 2, 2010.

[4] Ibid.

[5] Bay Area Air Quality Management District. Source Inventory of Bay Area Greenhouse Gas Emissions: Base Year 2007, Updated: February 2010. Available online at: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/Emission%20Inventory/regionalinventory2007_2_10.ashx. Accessed March 2, 2010.

[6] Ibid.

actions requiring increasing automobile efficiency, an endangerment finding for CO_2, and a recently finalized regulation requiring large sources of GHG emissions to be reported to the EPA. In addition, there are several bills pending in Congress that are attempting to regulate GHG emissions in the United States; most of these bills require a cap and trade program in which GHG emissions would be reduced through a market-driven approach.

In December 2009, in response to a U.S. Supreme Court ruling, the EPA made a finding under the Clean Air Act that current and projected atmospheric concentrations of the six generally recognized GHGs— CO_2, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride—"threaten the public health and welfare of current and future generations," and that emissions of these gases from new cars and trucks "contribute to the greenhouse gas pollution which threatens public health and welfare." While not in itself imposing any regulatory requirements, this "endangerment finding" under the Clean Air Act was required before the EPA could issue regulations, and allowed the agency to adopt GHG emissions standards that it proposed in September 2009, in conjunction with new fuel economy standards simultaneously proposed by the National Highway Traffic Safety Administration of the U.S. Department of Transportation.

The standards, published in the Federal Register on May 7, 2010, and effective 60 days thereafter, on July 6, 2010, apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016, and require automakers to improve fleetwide fuel economy and reduce fleetwide GHG emissions by approximately 5 percent each year. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile in model year 2016, equivalent to 35.5 miles per gallon (mpg) if the automotive industry were to meet this CO_2 level entirely through fuel economy improvements. In a related action, in June 2009, the EPA granted California a waiver under the federal Clean Air Act, allowing the State to impose its own, stricter GHG regulations for vehicles beginning in 2009 (see below).

State Policies. In 2006, the California Legislature passed Assembly Bill No. 32 (California Health and Safety Code Division 25.5, Sections 38500, et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires the ARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective State-wide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions).

Pursuant to AB 32, the ARB adopted a Scoping Plan in December 2008, outlining measures to meet the 2020 GHG reduction limits. In order to meet these goals, California must reduce its GHG emissions by 30 percent below projected 2020 business as usual emissions levels, or about 15 percent from today's levels.[7] The Scoping Plan estimates a reduction of 174 million metric tons of CO_2E ($MMTCO_2E$) (about 191 million U.S. tons) from the transportation, energy, agriculture, forestry, and high global warming potential sectors (see Table IV.G-1, below). The ARB has identified an implementation timeline for the GHG reduction strategies in the Scoping Plan.[8] Some measures may require new legislation to implement, some will require subsidies, some have already been developed, and some will require additional effort to evaluate and quantify. Additionally, some emissions reductions strategies may require their own environmental review under CEQA or the National Environmental Policy Act (NEPA).

As of March 18, 2011, the San Francisco Superior Court has enjoined implementation of the Scoping Plan after finding that the ARB's public review process and alternatives analysis violated CEQA and the ARB's certified regulatory program. The Scoping Plan may not be implemented until the ARB fulfills its obligations under CEQA and the certified regulatory program, as described in the court's ruling.

AB 32 also anticipates that local government actions will result in reduced GHG emissions. The ARB has identified a GHG reduction target of 15 percent from current levels for local governments themselves and notes that successful implementation of the plan relies on local governments' land use planning and urban growth decisions, because local governments have primary authority to plan,

[7] California Air Resources Board, California's Climate Plan: Fact Sheet. Available online at: http://www.arb.ca.gov/cc/facts/scoping_plan_fs.pdf. Accessed March 4, 2010.

[8] California Air Resources Board. AB 32 Scoping Plan. Available Online at: http://www.arb.ca.gov/cc/scopingplan/sp_measures_implementation_timeline.pdf. Accessed March 2, 2010.

zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions.

Table IV.G-1: GHG Reductions from the AB 32 Scoping Plan Sectors[9]

GHG Reduction Measures By Sector	**GHG Reductions ($MMT\ CO_2E$)**
Transportation Sector	62.3
Electricity and Natural Gas	49.7
Industry	1.4
Landfill Methane Control Measure (Discrete Early Action)	1
Forestry	5
High Global Warming Potential GHGs	20.2
Additional Reductions Needed to Achieve the GHG Cap	34.4
Total	**174**
Other Recommended Measures	
Government Operations	1-2
Agriculture- Methane Capture at Large Dairies	1
Methane Capture at Large Dairies	1
Additional GHG Reduction Measures	
Water	4.8
Green Buildings	26
High Recycling/ Zero Waste Commercial Recycling Composting Anaerobic Digestion Extended Producer Responsibility Environmentally Preferable Purchasing	9
Total	**42.8-43.8**

Source: San Francisco Planning Department, 2010.

The Scoping Plan relies on the requirements of Senate Bill 375 (SB 375) to implement the carbon emission reductions anticipated from land use decisions. SB 375 was enacted to align local land use

[9] Ibid.

and transportation planning to further achieve the State's GHG reduction goals. SB 375 requires regional transportation plans, developed by Metropolitan Planning Organizations (MPOs), to incorporate a "sustainable communities strategy" in their regional transportation plans (RTPs) that would achieve GHG emission reduction targets set by the ARB. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development. SB 375 would be implemented over the next several years and the Metropolitan Transportation Commission's 2013 RTP would be its first plan subject to SB 375.

Senate Bill 97 (SB 97) required the Office of Planning and Research (OPR) to amend the state *CEQA Guidelines* to address the feasible mitigation of GHG emissions or the effects of GHGs. In response, OPR amended the *CEQA Guidelines* to provide guidance for analyzing GHG emissions. Among other changes to the *CEQA Guidelines*, the amendments add a new section to the CEQA Checklist (*CEQA Guidelines* Appendix G) to address questions regarding the potential for projects to emit GHGs.

Regional Policies. The Bay Area Air Quality Management District (BAAQMD) is the primary agency responsible for air quality regulation in the nine county San Francisco Bay Area Air Basin. As part of its role in air quality regulation, the BAAQMD has prepared the CEQA air quality guidelines to assist lead agencies in evaluating air quality impacts of projects and plans proposed in the Air Basin. The guidelines provide procedures for evaluating potential air quality impacts during the environmental review process, consistent with CEQA requirements. On June 2, 2010, the BAAQMD adopted revised CEQA air quality thresholds of significance and issued revised guidelines that supersede the 1999 air quality guidelines. The *2010 CEQA Air Quality Guidelines* provide, for the first time, CEQA thresholds of significance for greenhouse gas emissions. OPR's amendments to the *CEQA Guidelines* as well as BAAQMD's *2010 CEQA Air Quality Guidelines* and thresholds of significance have been incorporated into this analysis accordingly.

Local Regulations. San Francisco has a history of environmental protection policies and programs aimed at improving the quality of life for San Francisco's residents and reducing impacts on the environment. The following plans, policies and legislation are expected to contribute to the City's efforts to minimize GHG emissions.

Transit First Policy. In 1973, San Francisco instituted the Transit First Policy, which added Section 16.102 to the City Charter, with the goal of reducing the City's reliance on freeways and meeting transportation needs by emphasizing mass transportation. The Transit First Policy gives priority to public transit investments; adopts street capacity and parking policies to discourage increased automobile traffic; and encourages the use of transit, bicycling and walking rather than use of single-occupant vehicles.

San Francisco Sustainability Plan. In July 1997, the Board of Supervisors approved the Sustainability Plan for the City of San Francisco, establishing sustainable development as a fundamental goal of municipal public policy.

The Electricity Resource Plan (Revised December 2002). San Francisco adopted the Electricity Resource Plan to help address growing environmental health concerns in San Francisco's southeast community, home of two power plants. The plan presents a framework for assuring a reliable, affordable, and renewable source of energy for San Francisco.

The Climate Action Plan for San Francisco. In February 2002, the San Francisco Board of Supervisors passed the Greenhouse Gas Emissions Reduction Resolution (Number 158-02), committing the City and County of San Francisco to a GHG emissions reduction goal of 20 percent below 1990 levels by the year 2012. In September 2004, the San Francisco Department of the Environment and the Public Utilities Commission published the *Climate Action Plan for San Francisco: Local Actions to Reduce Greenhouse Emissions*. The Climate Action Plan provides background information related to climate change in San Francisco and examines strategies to meet the 20 percent GHG reduction target. Although the Board of Supervisors has not formally committed the City to perform the actions addressed in the Plan, and many of the actions require further development and commitment of resources, the Plan serves as a blueprint for GHG emission reductions, and several actions have been implemented or are now in progress, including those intended to shift vehicle trips from modes of transportation that emit high levels of GHGs (e.g., private automobiles) to transportation modes with low emission rates (e.g., walking, biking, and transit).

San Francisco Municipal Transportation Agency's Zero Emissions 2020 Plan. The SFMTA's Zero Emissions 2020 plan focuses on the purchase of cleaner transit buses, including hybrid diesel-electric buses. Under this plan, hybrid buses will replace the oldest diesel buses, some dating back to 1988. The hybrid buses emit 95 percent less particulate matter (PM, or soot) than the buses they replace, they produce 40 percent less oxides of nitrogen (NOx), and they reduce GHGs by 30 percent.

LEED® Silver for Municipal Buildings. In 2004, the City amended Chapter 7 of the Environment Code, requiring all new municipal construction and major renovation projects to achieve LEED® Silver Certification from the U.S. Green Building Council.

Zero Waste. In 2004, the City of San Francisco committed to a goal of diverting 75 percent of its waste from landfills by 2010, with the ultimate goal of zero waste by 2020. San Francisco currently recovers 69 percent of discarded material.

Construction and Demolition Debris Recovery Ordinance. In 2006, the City of San Francisco adopted Ordinance No. 27-06, requiring all construction and demolition debris to be transported to a registered facility that can divert a minimum of 65 percent of the material from landfills. This ordinance applies to all construction, demolition and remodeling projects within the City.

Greenhouse Gas Reduction Ordinance. In May 2008, the City of San Francisco adopted an ordinance amending the San Francisco Environment Code to establish City GHG emission targets and departmental action plans, to authorize the Department of the Environment to coordinate efforts to meet these targets, and to make environmental findings. The ordinance establishes an ultimate GHG emission reduction goal of 80 percent below 1990 levels by 2050.

Go Solar SF. On July 1, 2008, the San Francisco Public Utilities Commission (SFPUC) launched its "GoSolarSF" program to San Francisco's businesses and residents, offering incentives in the form of a rebate program that could pay for approximately half the cost of installation of a solar power system, and more to persons qualifying as low-income residents.

City of San Francisco's Green Building Ordinance. On August 4, 2008, Mayor Gavin Newsom signed into law San Francisco's Green Building Ordinance for newly constructed residential and commercial buildings and renovations to existing buildings. The ordinance specifically requires newly constructed commercial buildings over 5,000 square feet (sq. ft.), residential buildings over 75 feet in height, and renovations on buildings over 25,000 sq. ft. to be subject to LEED and green building certifications. Cumulative benefits of this ordinance include reducing CO_2 emissions by 60,000 tons, saving 220,000 megawatt hours of power, saving 100 million gallons of drinking water, reducing waste and storm water by 90 million gallons, reducing construction and demolition waste by 700 million pounds, increasing the valuations of recycled materials by $200 million, reducing automobile trips by 540,000, and increasing green power generation by 37,000 megawatt hours. The Green Building Ordinance also continues San Francisco's efforts to reduce the City's greenhouse gas emissions to 20 percent below 1990 levels by the year 2012, a goal outlined in the City's 2004 Climate Action Plan. In addition, by reducing San Francisco's emissions, this ordinance also furthers the State's efforts to reduce greenhouse gas emissions State-wide, as mandated by the California Global Warming Solutions Act of 2006.

The City has also passed ordinances to reduce waste from retail and commercial operations and to require recycling and composting in residential and commercial buildings. Ordinance 295-06, the Food Waste Reduction Ordinance, prohibits the use of polystyrene foam disposable food service ware and requires biodegradable/compostable or recyclable food service ware by restaurants, retail food vendors, City Departments, and City contractors. Ordinance 81-07, the Plastic Bag Reduction Ordinance, requires many stores located within the City and County of San Francisco to use compostable plastic, recyclable paper, and/or reusable checkout bags. Ordinance 100-09, the Mandatory Recycling and Composting Ordinance, requires everyone in San Francisco to separate their refuse into recyclables, compostables, and trash. The San Francisco Planning Department and Department of Building Inspection have also developed a streamlining process for Solar Photovoltaic (PV) Permits and priority permitting mechanisms for projects pursuing LEED Gold Certification.

The City's Planning Code reflects the latest smart growth policies and includes: electric vehicle refueling stations in City parking garages, bicycle storage facilities for commercial and office buildings, and zoning that is supportive of high density mixed-use infill development. The City's more recent area plans, such as Rincon Hill and the Market and Octavia Area Plan, provide transit-oriented development policies. At the same time there is also a community-wide focus on ensuring San Francisco's neighborhoods as "livable" neighborhoods, including the Transit Effectiveness Plan and the Bicycle Plan, all of which promote alternative transportation options. In addition, the San Francisco Environment Code requires employers of 20 or more to provide employees with transit benefits, such as a Muni Fast Pass, Commuter Check, or similar financial support.

Each of the policies and ordinances discussed above include measures that would decrease the amount of GHGs emitted into the atmosphere and decrease San Francisco's overall contribution to climate change. The BAAQMD, in the 2010 update of its *CEQA Air Quality Guidelines*, has outlined the features that are required for a GHG Reduction Strategy to be considered consistent with the State's GHG reduction goals as codified through AB 32. Projects that are consistent with such qualified GHG Reduction Strategies can be found to have a less-than-significant impact in terms of GHG emissions and climate change. BAAQMD standards for a qualified GHG Reduction Strategy include a GHG inventory for existing (baseline) and future years (2020 or other forecast year) that includes future emissions under a "business-as-usual" scenario; an adopted GHG reduction goal of: (a) 1990 GHG emission levels, (b) 15 percent below baseline (2008 or earlier) emission levels, or (c) a per-service population emissions rate of 6.6 $MMTCO_2E$, the specified significance criterion in the BAAQMD *CEQA Air Quality Guidelines*; analysis of anticipated GHG emissions resulting from local and State policies and regulations that may be planned or adopted but not implemented; identification of specific feasible reduction measures to meet the identified target on a project-by-project basis, including quantification of each measure's effectiveness in GHG reduction; and establishment of a monitoring program, including identification of which measures apply to different types of new development projects, a mechanism for reviewing and determining if all applicable mandatory measures are being applied, implementation steps and parties responsible for ensuring implementation of each action and a schedule for implementation, procedures for monitoring and updating the GHG inventory and reduction measures at 3- to 5-year intervals, and annual review and reporting on the progress of implementation.

In addition, a qualified GHG Reduction Strategy must have undergone CEQA review. Because few local agencies have completed all of these steps, BAAQMD recognizes that a local agency can demonstrate equivalency with a qualified GHG Reduction Strategy if its climate change ordinances, policies, and programs are consistent with AB 32 and include requirements or feasible measures to reduce GHG emissions to 1990 levels, 15 percent below 2008 levels, or 6.6 $MMTCO_2E$. Given the City's adopted ordinances, policies, and programs, and the fact that the City's Climate Action Plan calls for a reduction in GHG emissions to 20 percent below 1990 levels by the year 2012, the Climate Action Plan for San Francisco, along with accompanying legislation and policies, is considered a qualified GHG Reduction Strategy, as defined by the BAAQMD.[10]

Impacts

This section analyzes the impacts related to GHG emissions that could result from implementation of the proposed projects. The section begins with the significance criteria, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the proposed projects.

Significance Criteria. Implementation of the proposed projects would have a significant effect on GHG emissions if they would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emission of greenhouse gases.

Impacts. The proposed projects would result in one less-than-significant impact related to GHG emissions. No significant impacts related to GHG emissions would result from the projects.

[10] Letter from Jean Roggenkamp, BAAQMD, to Bill Wycko, San Francisco Planning Department. October 28, 2010. This letter is available online at: www.sfplanning.org/index.aspx?page=1570. Accessed March 24, 2011.

Impact GG-1: The proposed projects would generate greenhouse gas emissions, but not in levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing greenhouse gas emissions. (Less Than Significant)

The most common GHGs resulting from human activity are CO_2, CH_4, and N_2O.[11] State law defines GHGs to also include hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. These latter GHG compounds are usually emitted in industrial processes, and are therefore not applicable to the proposed projects. Individual projects contribute to the cumulative effects of climate change by directly or indirectly emitting GHGs during construction and operational phases. Direct operational emissions include GHG emissions from new vehicle trips and area sources (natural gas combustion). Indirect emissions include emissions from electricity providers, energy required to pump, treat, and convey water, and emissions associated with landfill operations.

The proposed projects would increase activity on the project sites primarily by increasing museum attendance and museum-related employment on the SFMOMA Expansion site, and replacing a vacant industrial/commercial building with a new fire station and multi-family residential project containing 13 units on the Fire Station Relocation and Housing Project site. Therefore, the proposed projects would contribute to annual long-term increases in GHGs as a result of increased vehicle trips (mobile sources) and residential and commercial operations associated with energy use, water use and wastewater treatment, and solid waste disposal. Construction activities on the two sites would also result in an increase in GHG emissions.

As discussed above, the BAAQMD has adopted CEQA thresholds of significance for projects that emit GHGs, one of which is a determination of whether the proposed project is consistent with a Qualified Greenhouse Gas Reduction Strategy, as defined in the *2010 CEQA Air Quality Guidelines*. On August 12, 2010, the San Francisco Planning Department submitted a draft of the City and County of

[11] Governor's Office of Planning and Research. *Technical Advisory, CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review*. June 19, 2008. Available at the Office of Planning and Research's website at: http://www.opr.ca.gov/ceqa/pdfs/june08-ceqa.pdf. Accessed March 3, 2010.

San Francisco's Strategies to Address Greenhouse Gas Emissions to the BAAQMD.[12] This document presents a comprehensive assessment of policies, programs, and ordinances that collectively represents San Francisco's Qualified Greenhouse Gas Reduction Strategy in compliance with the BAAQMD's *2010 CEQA Air Quality Guidelines* and thresholds of significance.

San Francisco's GHG reduction strategy identifies a number of mandatory requirements and incentives that have measurably reduced greenhouse gas emissions including, but not limited to, increasing the energy efficiency of new and existing buildings, installation of solar panels on building roofs, implementation of a green building strategy, adoption of a zero waste strategy, a construction and demolition debris recovery ordinance, a solar energy generation subsidy, incorporation of alternative fuel vehicles in the City's transportation fleet (including buses and taxis), and a mandatory composting ordinance. The strategy also identifies 42 specific regulations for new development that would reduce a project's GHG emissions.

San Francisco's climate change goals as are identified in the 2008 Greenhouse Gas Reduction Ordinance as follows:

- By 2008, determine the City's 1990 GHG emissions, the baseline level with reference to which target reductions are set;
- Reduce GHG emissions by 25 percent below 1990 levels by 2017;
- Reduce GHG emissions by 40 percent below 1990 levels by 2025; and
- Reduce GHG emissions by 80 percent below 1990 levels by 2050.

The City's 2017 and 2025 GHG reduction goals are more aggressive than the State's GHG reduction goals as outlined in AB 32, and are consistent with the State's long-term (2050) GHG reduction goals. San Francisco's Strategies to Address Greenhouse Gas Emissions identify the City's actions to pursue cleaner energy, energy conservation, alternative transportation, and solid waste policies, and conclude that San Francisco's policies have resulted in a reduction in greenhouse gas emissions below 1990

[12] San Francisco Planning Department. *Strategies to Address Greenhouse Gas Emissions in San Francisco*. 2010. The final document is available online at: http://www.sfplanning.org/index.aspx?page=1570.

levels, meeting State-wide AB 32 GHG reduction goals. As reported, San Francisco's 1990 GHG emissions were approximately 8.26 million metric tons (MMT) CO_2E and 2005 GHG emissions are estimated at 7.82 $MMTCO_2E$, representing an approximately 5.3 percent reduction in GHG emissions below 1990 levels.

The BAAQMD reviewed San Francisco's Strategies to Address Greenhouse Gas Emissions and concluded that it meets the criteria for a Qualified GHG Reduction Strategy as outlined in *BAAQMD's CEQA Air Quality Guidelines* (2010) and stated that San Francisco's "aggressive GHG reduction targets and comprehensive strategies help the Bay Area move toward reaching the State's AB 32 goals, and also serve as a model from which other communities can learn."[13]

Based on the BAAQMD's 2010 *CEQA Air Quality Guidelines*, projects that are consistent with San Francisco's Strategies to Address Greenhouse Gas Emissions would result in a less-than-significant impact with respect to GHG emissions. Furthermore, because San Francisco's strategy is consistent with AB 32 goals, projects that are consistent with San Francisco's strategy would also not conflict with the State's plan for reducing GHG emissions. As discussed in San Francisco's Strategies to Address Greenhouse Gas Emissions, new development and renovations/alterations for private projects and municipal projects are required to comply with San Francisco's ordinances that reduce greenhouse gas emissions. Requirements that are applicable to the proposed projects are shown below in Table IV.G-2.

Table IV.G-2: Regulations Applicable to the Proposed Projects

Regulation	Project Compliance	
	SFMOMA Expansion	***Fire Station Relocation and Housing Project***
Transportation Sector		
Commuter Benefits Ordinance (Environment Code, Section 421)	Compliant. SFMOMA employees are currently eligible for commuter benefits, including pre-tax purchases of transit passes.	The fire station project would be compliant. All City employees are offered commuter benefits for transit and vanpool expenses. Not applicable to the residential project.

[13] Letter from Jean Roggenkamp, BAAQMD, to Bill Wycko, San Francisco Planning Department. October 28, 2010. This letter is available online at: www.sfplanning.org/index.aspx?page=1570. Accessed March 24, 2011.

Table IV.G-2 *Continued*

Regulation	Project Compliance	
	SFMOMA Expansion	***Fire Station Relocation and Housing Project***
Emergency Ride Home Program	Compliant. SFMOMA employees are currently eligible for the program.	The fire station project would be compliant, as the program is available to San Francisco Fire Department (SFFD) employees. Not applicable to the residential project.
Healthy Air and Smog Ordinance (Environment Code, Chapter 4)	Not applicable. Applies only to municipal projects.	The fire station project would be compliant. The SFFD Climate Action Plan includes provisions for the purchase of lower-polluting vehicles. Not applicable to the residential project.
Biodeisel for Municipal Fleets (Executive Directive 06-02)	Not applicable. Applies only to municipal projects.	The fire station project would be compliant. The SFFD Climate Action Plan includes provisions requiring the continued conversion of SFFD fleet to biodiesel usage. Not applicable to the residential project.
Clean Construction Ordinance (Administrative Code, Section 6.25)	Not applicable. Applies only to municipal projects.	The fire station project would be compliant. Project construction activities would be required to comply with the ordinance. Not applicable to the residential project.
Bicycle Parking in City-Owned and Leased Buildings (Planning Code, Section 155.1)	Not applicable. Applies only to municipal projects.	The fire station project would be compliant. Two bicycle spaces would be provided at the fire station, as required for each 20-person shift. Not applicable to the residential project.
Transportation Management Programs (Planning Code, Section 163)	Compliant. SFMOMA would provide a description of the Transportation Management Program in the museum's personnel manual.	Not applicable. The fire station project is not sufficiently large to be subject to the requirement. This requirement does not apply to residential uses.
Transit Impact Development Fee (Administrative Code, Chapter 38)	Not applicable. This requirement only applies to commercial development.	Not applicable. This requirement does not apply to municipal or residential projects.
Jobs-Housing Linkage Program (Planning Code Section 413)	Not applicable. This requirement does not apply to museum projects.	Not applicable. This requirement does not apply to municipal or residential projects.
Bicycle Parking in New and Renovated Commercial Buildings (Planning Code, Section 155.4)	Compliant. The project would include a minimum of 12 public bicycle spaces and 30 employee bicycle spaces (for a total of 42 spaces).	Not applicable. This requirement does not apply to municipal or residential projects.
Bicycle Parking in Parking Garages (Planning Code, Section 155.2)	Not applicable. Applies only to parking garages with more than 500 vehicle spaces.	Not applicable. Applies only to parking garages with more than 500 vehicle spaces.
Bicycle Parking in Residential Buildings (Planning Code, Section 155.5)	Not applicable. Applies only to residential buildings.	The residential structure, if constructed with a total of 13 units, would have seven bicycle spaces. Not applicable to the fire station project. The residential project would be compliant.
Car Sharing Requirements (Planning Code, Section 166)	Not applicable. Applies only to residential uses.	Not applicable to either project. Per Section 166, residential buildings with 49 or fewer units are not required to provide car sharing spaces.

Table IV.G-2 *Continued*

Regulation	Project Compliance	
	SFMOMA Expansion	***Fire Station Relocation and Housing Project***
Parking Requirements for San Francisco's Mixed-Use Zoning Districts (Planning Code Section 151.1)	Not applicable. Applies only to projects in mixed-use districts.	Not applicable to the fire station project, which would be located in the Public (P) District. The residential project would be compliant. The number of parking spaces (10) proposed as part of the residential project would not exceed the maximum parking requirements established in the Planning Code for mixed-use districts (0.75 space per unit).
	Energy Efficiency Sector	
Resource Efficiency and Green Building Ordinance (Environment Code, Chapter 7)	Not applicable. Applies only to municipal projects.	The fire station project would be compliant, and would be built to LEED Gold standards. Waste diversion requirements would be met. Not applicable to the residential project.
San Francisco Green Building Requirements for Energy Efficiency (SF Building Code, Chapter 13C)	Compliant. The SFMOMA Expansion would be constructed as a LEED Silver project and would meet or exceed Title 24 energy efficiency requirements.	Not applicable. This requirement does not apply to municipal or residential projects.
San Francisco Green Building Requirements for Energy Efficiency (SF Building Code, Chapter 13C)	Not applicable. Applies only to residential projects.	Not applicable to the fire station project. The residential project would be compliant. The project would be designed in accordance with Chapter 13C of the Building Code. The future design would be plan-checked by the Department of Building Inspection.
San Francisco Green Building Requirements for Stormwater Management (SF Building Code, Chapter 13C) or San Francisco Stormwater Management Ordinance (Public Works Code Article 4.2)	Compliant. The project design would include on-site stormwater management features pursuant to the Stormwater Management Ordinance.	Not applicable. The sites for the fire station and residential projects would be less than 5,000 square feet each; therefore, the stormwater management requirements would not apply.
San Francisco Green Building Requirements for Water Efficient Landscaping (SF Building Code, Chapter 13C)	Compliant. The project would reduce landscaping-related potable water use by 50 percent.	Not applicable. This requirement does not apply to municipal projects or residential uses.
San Francisco Green Building Requirements for Water Use Reduction (SF Building Code, Chapter 13C)	Compliant. The project would reduce the use of potable water by 20 percent.	Not applicable. This requirement does not apply to municipal or residential projects.
Commercial Water Conservation Ordinance (SF Building Code, Chapter 13A)	Compliant. The project would include low-flow fixtures that meet the specifications outlined in the Ordinance.	Not applicable. This requirement does not apply to municipal or residential projects.

Table IV.G-2 *Continued*

Regulation	Project Compliance	
	SFMOMA Expansion	***Fire Station Relocation and Housing Project***
Residential Water Conservation Ordinance (SF Building Code, Housing Code, Chapter 12A)	Not applicable. Applies only to residential projects.	Not applicable to the fire station project. The residential project would be compliant. The residential project would be designed in accordance with Chapter 12A of the Building Code, and would be plan-checked by the Department of Building Inspection.
Residential Energy Conservation Ordinance (SF Building Code, Housing Code, Chapter 12)	Not applicable. Applies only to existing residential buildings.	Not applicable. Applies only to existing residential buildings.
Renewable Energy Sector		
San Francisco Green Building Requirements for Renewable Energy (SF Building Code, Chapter 13C)	Compliant. The project would provide on-site renewable energy or purchase renewable energy credits pursuant to LEED Energy and Atmosphere Credits 2 or 6.	Not applicable. This requirement does not apply to municipal or residential projects.
Waste Reduction Sector		
Resource Conservation Ordinance (Environment Code, Chapter 5)	Not applicable. Applies only to municipal projects.	The fire station project would be compliant. The SFFD Climate Action Plan includes numerous provisions requiring the diversion of recyclable materials. The SFFD complies with recycled content purchasing require-ments. Not applicable to the residential project.
Construction Recycled Content Ordinance (Administrative Code, Section 6.4)	Not applicable. Applies only to municipal projects.	The fire station project would be compliant. The design specifications for the fire station would require the incorporation of recycled material. Not applicable to the residential project.
San Francisco Green Building Requirements for Solid Waste (SF Building Code, Chapter 13C)	Compliant. The project would include a recycling, composting, and trash storage collection and loading system.	Compliant. The residential and fire station projects would be designed in accordance with Chapter 13C of the Building Code, and the designs would be plan-checked by the Department of Building Inspection.
Mandatory Recycling and Composting Ordinance (Environment Code, Chapter 19)	Compliant. The project would include design features that allow all personnel and visitors to be able to easily separate their refuse into recyclables, compostable, and trash. Receptacles for all three categories would be placed throughout the museum.	Compliant. The residential and fire station projects would include design features that allow employees and occupants to be able to easily separate their refuse into recyclables, compostable and trash. Appropriate waste diversion receptacles would be placed in and around the proposed structures.
San Francisco Green Building Requirements for Construction and Demolition Debris Recycling (SF Building Code, Chapter 13C)	Compliant. At least 75 percent of construction and demolition waste would be diverted.	Compliant. At least 75 percent of construction and demolition waste would be diverted.

Table IV.G-2 *Continued*

Regulation	Project Compliance	
	SFMOMA Expansion	***Fire Station Relocation and Housing Project***
San Francisco Construction and Demolition Debris Recovery Ordinance (SF Environment Code, Chapter 14)	Compliant. At least 65 percent of waste generated by demolition of the 676 Howard Street and 670 Howard Street buildings would be diverted.	Compliant. At least 65 percent of waste generated by demolition of the 935 Folsom Street building would be diverted.
Environment/Conservation Sector		
Environmentally Preferable Purchasing Ordinance (Formerly Precautionary Purchasing Ordinance)	Not applicable. Applies only to municipal projects.	The fire station project would be compliant. The SFFD Climate Action Plan requires the purchase of green products. Not applicable to the residential project.
Tropical Hardwood and Virgin Redwood Ban (Environment Code, Chapter 8)	Not applicable. Applies only to municipal projects.	The fire station project would be compliant. The design specifications for the fire station would restrict the use of hardwood and virgin redwood products. Not applicable to the residential project.
Street Tree Planting Requirements for New Construction (Planning Code Section 428)	Compliant. Street trees would be planted in accordance with City requirements, although no trees would be planted at curb cuts and loading areas.	Compliant. 24-inch box trees would be planted along Shipley Street, except around curb cuts or access points. No trees would be planted on Folsom Street to allow for fire vehicle access.
Wood Burning Fireplace Ordinance (San Francisco Building Code, Chapter 31, Section 3102.8)	Compliant. No wood burning fire places would be installed as part of the project.	Compliant. The fire station would not include wood burning fireplaces. The residential project would include only wood burning fireplaces of the following types. • Pellet-fueled wood heater • EPA approved wood heater • Wood heater approved by the Northern Sonoma Air Pollution Control District
Regulation of Diesel Backup Generators (San Francisco Health Code, Article 30)	Compliant. All new diesel generators would be appropriately registered.	Compliant. All new diesel generators would be appropriately registered.

Source: *GHG Analysis: Compliance Checklists for 935 Folsom Street and SFMOMA Expansion*, San Francisco Planning Department, March 21, 2011. These documents are available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

In addition to complying with the City's regulations, the 2008 Green Building Ordinance requires that all City Departments prepare an annual department-specific climate action plan. The San Francisco Fire Department (SFFD) Climate Action Plan for fiscal year 2009-2010 is the most recent Climate Action Plan adopted by the SFFD. The Climate Action Plan seeks to reduce the SFFD's carbon emissions, approximately 70 percent of which derive from the use and combustion of liquid fuels. The key goals and implementation plans identified in the Climate Action Plan include:

- Decrease natural gas usage with conservation efforts and facility improvements;
- Reduce emissions from liquid fuel usage;
- Increase waste diversion rate; and
- Decrease electricity usage with conservation efforts and facility improvements.

The specific activities identified in the Climate Action Plan for reducing the SFFD's carbon emissions range from replacing older vehicles with more fuel-efficient vehicles to more effectively managing trees on SFFD-managed property for use in carbon sequestration.

Depending on a proposed project's size, use, and location, a variety of controls are in place to ensure that a proposed project would not impair the State's ability to meet State-wide GHG reduction targets outlined in AB 32, nor impact the City's ability to meet San Francisco's local GHG reduction targets. Given that: 1) San Francisco has implemented regulations to reduce greenhouse gas emissions specific to new construction and renovations of private developments and municipal projects; 2) San Francisco's sustainable policies have resulted in the measured success of reduced greenhouse gas emissions levels; 3) San Francisco has met and exceeded AB 32 greenhouse gas reduction goals for the year 2020; 4) current and probable future State and local greenhouse gas reduction measures will continue to reduce a project's contribution to climate change; and 5) San Francisco's Strategies to Address Greenhouse Gas Emissions meet BAAQMD's requirements for a Qualified GHG Reduction Strategy, projects that are consistent with San Francisco's regulations would not contribute significantly to global climate change. The proposed projects would be required to comply with these requirements, and are determined to be consistent with San Francisco's Strategies to Address Greenhouse Gas Emissions.[14] As such, the proposed projects would result in a less-than-significant impact with respect to GHG emissions.

[14] *GHG Analysis: Compliance Checklists for 935 Folsom Street and SFMOMA Expansion*, San Francisco Planning Department, March 21, 2011. These documents are available for review at the Planning Department in Case File Nos. 2009.0291E and 2010.0275E.

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H. WIND AND SHADOW

This section discusses the anticipated effects of the proposed SFMOMA Expansion on wind and shadow patterns. As discussed on pages 100 to 102 of the Initial Study, based on an analysis of exposure, massing, and orientation of the buildings proposed as part of the Fire Station Relocation and Housing Project, that project would not cause substantial wind accelerations at the ground level or otherwise substantially alter the wind environment along Folsom Street, Shipley Street, or Falmouth Street, or – more broadly – in SoMa in the site's vicinity.

As discussed on pages 102 to 104 of the Initial Study, based on a shadow fan analysis conducted by the Planning Department, the residential structure proposed as part of the Fire Station Relocation and Housing Project would not cast shadow on any properties under the jurisdiction of the Recreation and Park Commission and therefore would be in compliance with Section 295 of the Planning Code (and would not result in other adverse shadow-related impacts).[1] In addition, based on the height and location of the proposed fire station, that structure would not create new shadow in a manner that substantially affects other outdoor recreation areas or public areas. These conclusions regarding the wind and shadow effects of the Fire Station Relocation and Housing Project also apply to cumulative conditions. Therefore, the analysis in this section of the EIR is focused on the project-specific and cumulative effects of the SFMOMA Expansion on wind and shadow conditions.

Setting

The following section provides background information about wind and shadow conditions, and applicable regulations.

[1] *Memo Regarding Compliance with Section 295 of the San Francisco Planning Code*, Ben A. Fu, August 23, 2010. This document is available for review at the Planning Department in Case File No. 2009.0291E.

Wind

Background. Generally, winds in San Francisco originate on the Pacific Ocean, and blow through the City in an easterly direction. Average wind speeds are highest in the summer and lowest in the winter. However, the strongest peak winds occur during the winter. The highest average wind speeds occur during the mid-afternoon and the lowest wind speeds occur during the morning. The winds that are most prevalent in San Francisco are those from the northwest, west-northwest, west, and west-southwest.

A building's exposure, massing, and orientation affect nearby ground-level wind accelerations. Exposure is a measure of the degree to which a building extends above surrounding structures into the wind stream. A building surrounded by taller structures is unlikely to cause adverse wind accelerations at the ground level, while even a small building can cause wind acceleration if it is freestanding and exposed. Groups of structures tend to slow the winds near ground level, due to the friction and the drag of the structures themselves on winds. Buildings that are much taller than their surrounding buildings intercept and redirect winds that might otherwise flow overhead, and bring them down the vertical face of the building to ground level, where they create ground-level wind and turbulence. These redirected winds can be relatively strong and also relatively turbulent, and can be incompatible with the intended uses of nearby ground-level spaces, depending on the level and type of pedestrian use.

Massing affects how much wind a building intercepts and whether wind accelerations occur at ground level. In general, slab-shaped buildings (oriented perpendicular to the prevailing wind direction) have the greatest potential for wind acceleration, and buildings with an unusual shape or setbacks have a lesser effect. Generally, the more complex the building is geometrically, the less ground level wind acceleration would be expected to occur. Building orientation also affects the amount of wind a structure intercepts and the corresponding extent of wind acceleration. Buildings with a wide axis perpendicular to prevailing winds will generally cause greater ground-level wind acceleration.

The comfort of pedestrians varies under different conditions of sun exposure, temperature, and wind speed. Winds up to 4 miles per hour (mph) have no noticeable effect on pedestrian comfort. With velocities between 4 to 8 mph, wind is felt on the face. Winds between 8 to 13 mph will disturb hair, cause clothing to flap, and extend a light flag mounted on a pole, while winds between 13 to 19 mph will raise loose paper, dust and dry soil, and will disarrange hair. For wind velocities between 19 to 26 mph, the force of the wind will be felt on the body. At 26 to 34 mph, umbrellas are used with difficulty, hair is blown straight, there is difficulty in walking steadily, and wind noise is unpleasant. Winds over 34 mph can result in loss of balance, and gusts can blow people over.

Wind activity around the SFMOMA Expansion site is generally high, with wind speeds averaging 13 mph. The highest wind speed occurs on the south side of Howard Street between Third and New Montgomery Streets, due to winds downwashing off the W Hotel immediately south of the existing museum and the channelling of winds between the buildings on either side of Howard Street.[2]

Regulatory Setting. In order to provide a comfortable wind environment for people in San Francisco, the City has established comfort criteria to be used in the evaluation of proposed buildings. Section 148 of the Planning Code outlines these criteria for the Downtown Commercial (C-3) Districts, including the project site (after project implementation, the entire SFMOMA Expansion site would be located within a C-3 District; currently, the 676 Howard Street site is located in the P District). The comfort criteria are based on pedestrian-level wind speeds that include the effects of turbulence; these are referred to as "equivalent wind speeds" (defined in the Planning Code as "an hourly mean wind speed adjusted to incorporate the effects of gustiness or turbulence on pedestrians").

Planning Code Section 148 establishes equivalent wind speeds of 7 mph as the comfort criterion for seating areas and 11 mph as the comfort criterion for areas of substantial pedestrian use, and states that new buildings and additions to buildings may not cause ground-level winds to exceed these levels more than 10 percent of the time year round between 7:00 a.m. and 6:00 p.m. If existing wind speeds exceed the comfort level, or when a project would result in exceedances of the comfort

[2] *Final SFMOMA Pedestrian Level Wind Study*, RWDI, April 14, 2011. This document is available for review at the Planning Department in Case File No. 2010.0275E.

criteria, an exception may be granted, pursuant to Section 309, if the building or addition cannot be designed to meet the criteria "without creating an unattractive and ungainly building form and without unduly restricting the development potential" of the site, and it is concluded that the exceedance(s) of the criteria would be insubstantial "because of the limited amount by which the comfort level is exceeded, the limited location in which the comfort level is exceeded, or the limited time during which the comfort level is exceeded."

Section 148 also establishes a hazard criterion, which is a 26 mph equivalent wind speed for a single 1-hour period, or approximately 0.0114 percent of the time. Under Section 148, new buildings and additions may not cause wind speeds that meet or exceed this hazard criterion. This hazard criterion is used to determine significant effects on wind patterns pursuant to CEQA, and an exceedance of this criterion is considered a significant impact pursuant to CEQA. Under Section 148, no exception may be granted for buildings that result in winds that exceed the hazard criterion. The comfort criteria are based on wind speeds that are measured for 1 minute and averaged. In contrast, the hazard criterion is based on wind speeds that are measured for 1 hour and averaged; when using the same metric as the comfort criteria wind speeds, the hazard criterion wind speed is a 1-minute average of 36 mph.

Shadow

Background. In an urban environment, shadow is a function of the height, size, and massing of buildings and other elements of the built environment, and the angle of the sun. The angle of the sun varies due to the time of day (rotation of the earth) and the change in seasons (elliptical orbit). The longest shadows are cast during the winter (when the sun is at the greatest distance below the celestial equator) and the shortest shadows are cast during the summer (when the sun is at the greatest distance above the celestial equator). At the time of the summer solstice (which falls on June 21 in 2011), the sun is directly overhead at noon (in the northern hemisphere), and the longest day and shortest night occur on this date. Conversely, the shortest day and longest night occur on the winter solstice (which falls on December 22 in 2011). The vernal and fall equinoxes represent the half-way point between the shortening and lengthening phases at the solstices. Thus measuring shadow lengths during the summer and winter solstices captures the extremes of shadow patterns that occur throughout the year.

Parks and open space facilities in the vicinity of the SFMOMA Expansion site include the Yerba Buena Gardens open space and recreational facilities, including an esplanade, gardens, plazas, a bowling alley, skating rink, historic carousel, and playground, which are directly across Third Street, to the west of the site. In addition, numerous privately-owned public open spaces (which may be parks or other small outdoor areas) are located east of the site. Such open space areas located in the area bound by Market Street on the north; First Street on the east; Howard Street on the south; and Second Street on the west include: 595 Market Street; 555/575 Market Street; 525 Market Street; 100 First Street; 25 Jessie Street; 49 Stevenson Street; 71 Stevenson Street; 55 Second Street; Golden Gate University; 560 Mission Street; 555 Mission Street; 101 Second Street; and Foundry Square.[3] The SFMOMA sculpture garden, accessible from the museum's fifth floor galleries, is also considered a publicly-accessible open space. In addition, other public open spaces include the streets and sidewalks around the project site.

Regulatory Setting. Three sections of the Planning Code relate to the potential impacts of the proposed project on shadow patterns: Section 295, 146, and 147. Section 295, the Sunlight Ordinance, was adopted through voter approval of Proposition K in November 1994 to protect certain public open spaces from shadowing by new structures. Section 295 prohibits the issuance of building permits for structures or additions to structures greater than 40 feet in height that would shade property under the jurisdiction of or designated to be acquired by the Recreation and Park Commission, during the period from 1 hour after sunrise to 1 hour before sunset, unless the Planning Commission, following review and comment by the general manager of the Recreation and Park Department, in consultation with the Recreation and Park Commission, determines that such shade would have an insignificant impact on the use of such property. There are no parks in the vicinity of

[3] *Secrets of San Francisco: A Guide to the City's Privately Owned Public Open Spaces*, San Francisco Planning + Urban Research Association, November 19, 2008. This document is available for review at the Planning Department in Case File No. 2010.0275E.

the SFMOMA Expansion site that are under Recreation and Park Department jurisdiction and subject to Section 295.

Planning Code Section 146 is intended to protect sun access on sidewalks along certain street segments in the C-3 zoning district. Subsection (a) of this section applies primarily to sidewalks along portions of the following streets, none of which are adjacent to the project site: Bush, Sutter, Post, Geary, O'Farrell, Ellis, Powell, Stockton, Grant, Kearney, Second, New Montgomery, and Market Streets. For each listed street segment, Section 146 identifies the side of the street to which the standards apply, and indicates the maximum permitted street wall height and the required sun access angle (i.e., the plane defined by an angle sloping away from the street above the maximum street wall height, which may not be penetrated by building mass) of buildings on the applicable side of the street. However, Section 146(c) applies to other street segments in the C-3 district, other than those on streets listed above. This section specifies that: "New buildings and additions to existing buildings shall be shaped, if it can be done without creating an unattractive design and without unduly restricting the development potential of the site in question, so as to reduce substantial shadow impacts in C-3 Districts other than those" on the street segments listed in subsection (a).

Planning Code Section 147, applicable to the C-3, RSD, SLR, SLI, and SSO zoning districts, where height limits are greater than 40 feet, requires that all new development and additions to existing structures where the height exceeds 50 feet must be designed to minimize shadow on public plazas or other publicly accessible open spaces other than those protected by Section 295, "in accordance with the guidelines of good design and without unduly restricting the development potential of the property." The following factors must be taken into account in determining compliance with this criterion: the amount of area shadowed; the duration of the shadow; and the importance of sunlight to the type of open space being shadowed.

Impacts

This section analyzes the impacts related to wind and shadow that could result from implementation of the SFMOMA Expansion. The section begins with the significance criteria, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project. Direct and cumulative impacts are considered.

Significance Criteria. The proposed SFMOMA Expansion would have a significant effect on wind and shadow if it would:

- Alter wind in a manner that substantially affects public areas; or
- Create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas.

Methods. Wind tunnel testing was conducted for the proposed SFMOMA Expansion by Rowan Williams Davies & Irwin, Inc. (RWDI).[4] The wind testing evaluated wind speeds under existing conditions, existing with project conditions, and cumulative conditions using a 1:400 (1 inch = 33 feet) scale model of the neighborhood surrounding SFMOMA. Figure IV.H-1 shows the wind analysis locations. A total of 62 locations were evaluated within a 1,600-foot radius of the project site, with a focus on winds from the west-southwest, west-northwest, and northwest, as required by the Planning Code. Tables IV.H-1 and IV.H-2 show the results of the analysis in relation to the pedestrian comfort criterion and hazard criterion, respectively. Following refinement of the SFMOMA Expansion design in the late spring of 2011, RWDI qualitatively re-examined the earlier modeling effort to verify the validity of the results and to ensure that new public areas would not be subject to adverse wind speeds.[5]

<u>Impact WS-1</u>: The proposed SFMOMA Expansion would not alter wind in a manner that substantially affects public areas within the vicinity of the project site. (Less Than Significant)

[4] *Final SFMOMA Pedestrian Level Wind Study*, RWDI, April 14, 2011. This document is available for review at the Planning Department in Case File No. 2010.0275E.

[5] *Pedestrian Level Winds, Commentary on the Impact of the Revised Design*, San Francisco Museum of Modern Art, RWDI, May 26, 2011. This document is available for review at the Planning Department in Case File No. 2010.0275E.

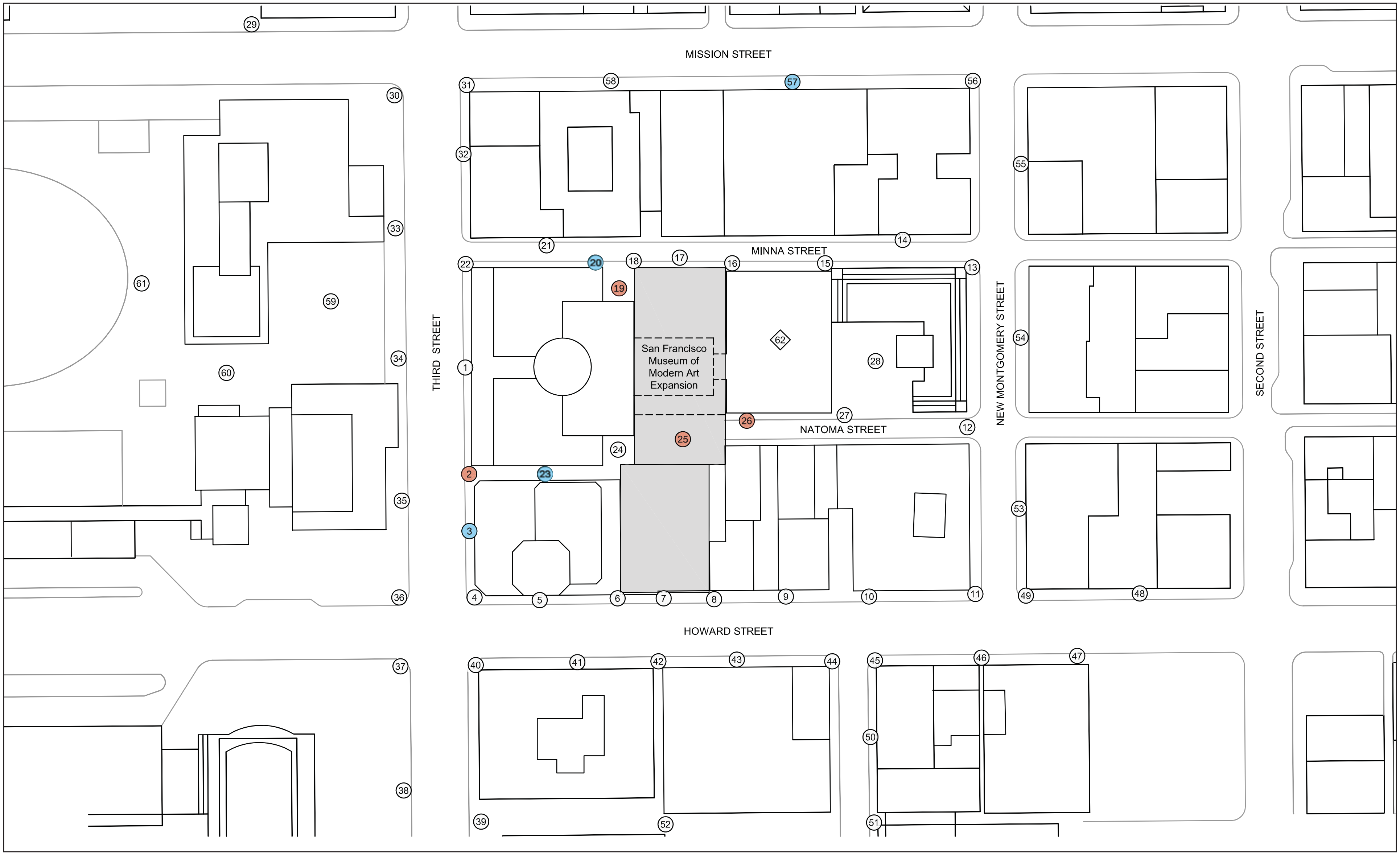


FIGURE IV.H-1

SENSOR LOCATION:

- Grade Level
- Upper Level Garden
- New Exceedence of Comfort Criterion
- Remove Exceedance of Comfort Criterion

0 100 200 FEET

SOURCE: RWDI, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Location of Wind Speed Measurements

Table IV.H-1: Wind Comfort Analysis: Criterion Speed Results (11 mph)

References		Existing			Project				Cumulative			
Location Number	Comfort Criterion Speed (mph)	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11mph	exceeds criterion	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11mph	Speed Change Relative to Existing (mph)	exceeds criterion	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11mph	Speed Change Relative to Existing (mph)	exceeds criterion
1	11	9	3%		8	1%	-1		10	6%	1	
2	11	11	10%		**13**	**17%**	**2**	**e**	**12**	**13%**	**1**	**e**
3	**11**	**12**	**16%**	**e**	11	10%	-1		10	6%	-2	
4	**11**	**19**	**42%**	**e**	**18**	**37%**	**-1**	**e**	**16**	**28%**	**-3**	**e**
5	**11**	**16**	**29%**	**e**	**15**	**24%**	**-1**	**e**	**13**	**18%**	**-3**	**e**
6	**11**	**16**	**28%**	**e**	**16**	**28%**	**0**	**e**	**14**	**21%**	**-2**	**e**
7	**11**	**16**	**29%**	**e**	**16**	**30%**	**0**	**e**	**15**	**23%**	**-1**	**e**
8	**11**	**16**	**28%**	**e**	**16**	**30%**	**0**	**e**	**15**	**25%**	**-1**	**e**
9	**11**	**17**	**31%**	**e**	**18**	**36%**	**1**	**e**	**15**	**26%**	**-2**	**e**
10	**11**	**18**	**34%**	**e**	**18**	**36%**	**0**	**e**	**16**	**28%**	**-2**	**e**
11	**11**	**14**	**21%**	**e**	**16**	**30%**	**2**	**e**	**16**	**27%**	**2**	**e**
12	11	11	10%		11	10%	0		9	4%	-2	
13	**11**	**15**	**23%**	**e**	**15**	**26%**	**0**	**e**	**13**	**19%**	**-2**	**e**
14	**11**	**12**	**14%**	**e**	**13**	**16%**	**1**	**e**	**12**	**15%**	**0**	**e**
15	11	10	7%		10	7%	0		10	7%	0	
16	**11**	**13**	**17%**	**e**	**12**	**12%**	**-1**	**e**	**12**	**14%**	**-1**	**e**
17	**11**	**16**	**30%**	**e**	**12**	**12%**	**-4**	**e**	**12**	**13%**	**-4**	**e**
18	**11**	**15**	**26%**	**e**	**15**	**29%**	**0**	**e**	**16**	**31%**	**1**	**e**
19	11	10	6%		**13**	**20%**	**3**	**e**	**14**	**19%**	**4**	**e**
20	**11**	**13**	**17%**	**e**	11	10%	-2		11	10%	-2	
21	**11**	**12**	**17%**	**e**	**12**	**14%**	**0**	**e**	11	10%	-1	
22	11	10	6%		10	7%	0		11	10%	1	
23	**11**	**12**	**12%**	**e**	8	2%	-4		7	0%	-5	
24	11	6	0%		8	1%	2		7	0%	1	
25	11	11	10%		**16**	**29%**	**5**	**e**	**12**	**12%**	**1**	**e**
26	11	8	3%		**15**	**24%**	**7**	**e**	**13**	**17%**	**5**	**e**
27	11	8	2%		10	6%	2		10	8%	2	
28	11	9	3%		8	1%	-1		10	8%	1	
29	11	8	1%		8	1%	0		**12**	**13%**	**4**	**e**
30	**11**	**12**	**13%**	**e**	**12**	**13%**	**0**	**e**	**16**	**29%**	**4**	**e**
31	**11**	**12**	**14%**	**e**	**12**	**14%**	**0**	**e**	**15**	**26%**	**3**	**e**
32	11	11	10%		11	10%	0		**13**	**19%**	**2**	**e**
33	11	9	2%		9	2%	0		**12**	**12%**	**3**	**e**
34	11	11	10%		11	10%	0		11	10%	0	
35	11	11	9%		11	10%	0		10	6%	-1	
36	**11**	**15**	**25%**	**e**	**14**	**24%**	**-1**	**e**	**13**	**16%**	**-2**	**e**
37	**11**	**14**	**24%**	**e**	**14**	**25%**	**0**	**e**	**13**	**17%**	**-1**	**e**
38	**11**	**18**	**36%**	**e**	**18**	**36%**	**0**	**e**	**15**	**25%**	**-3**	**e**
39	**11**	**19**	**41%**	**e**	**19**	**42%**	**0**	**e**	**15**	**27%**	**-4**	**e**
40	**11**	**14**	**23%**	**e**	**14**	**22%**	**0**	**e**	**13**	**19%**	**-1**	**e**

Table IV.H-1 *Continued*

References		Existing			Project				Cumulative			
Location Number	Comfort Criterion Speed (mph)	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11mph	exceeds criterion	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11mph	Speed Change Relative to Existing (mph)	exceeds criterion	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11mph	Speed Change Relative to Existing (mph)	exceeds criterion
41	**11**	**19**	**40%**	**e**	**18**	**36%**	**-1**	**e**	**16**	**28%**	**-3**	**e**
42	**11**	**21**	**45%**	**e**	**21**	**45%**	**0**	**e**	**19**	**37%**	**-2**	**e**
43	**11**	**21**	**44%**	**e**	**22**	**45%**	**1**	**e**	**18**	**35%**	**-3**	**e**
44	**11**	**20**	**40%**	**e**	**20**	**40%**	**0**	**e**	**13**	**18%**	**-7**	**e**
45	**11**	**16**	**28%**	**e**	**16**	**29%**	**0**	**e**	**14**	**21%**	**-2**	**e**
46	**11**	**15**	**24%**	**e**	**15**	**24%**	**0**	**e**	10	6%	-5	
47	**11**	**15**	**25%**	**e**	**14**	**21%**	**-1**	**e**	**12**	**16%**	**-3**	**e**
48	11	10	5%		11	10%	1		10	6%	0	
49	**11**	**14**	**22%**	**e**	**14**	**22%**	**0**	**e**	**13**	**17%**	**-1**	**e**
50	11	10	5%		8	1%	-2		11	10%	1	
51	11	9	3%		9	2%	0		**12**	**16%**	**3**	**e**
52	**11**	**19**	**39%**	**e**	**19**	**42%**	**0**	**e**	**17**	**36%**	**-2**	**e**
53	11	9	6%		9	6%	0		8	3%	-1	
54	**11**	**15**	**26%**	**e**	**16**	**28%**	**1**	**e**	**13**	**20%**	**-2**	**e**
55	**11**	**17**	**32%**	**e**	**17**	**33%**	**0**	**e**	**15**	**28%**	**-2**	**e**
56	**11**	**17**	**31%**	**e**	**17**	**31%**	**0**	**e**	**16**	**29%**	**-1**	**e**
57	**11**	**12**	**13%**	**e**	11	10%	-1		**13**	**18%**	**1**	**e**
58	**11**	**15**	**26%**	**e**	**15**	**27%**	**0**	**e**	**17**	**33%**	**2**	**e**
59	11	11	10%		11	10%	0		10	6%	-1	
60	**11**	**12**	**16%**	**e**	**13**	**18%**	**1**	**e**	11	10%	-1	
61	11	11	10%		11	10%	0		10	6%	-1	
62	11	9	5%		9	3%	0		9	5%	0	
Average mph and %		13 mph	19%		13 mph	19%	0 mph		13 mph	17%	0 mph	
Exceedances		Existing	39		Project		39		Cumulative		41	

Bold = exceedance

Source: Final SFMOMA Pedestrian Level Wind Study, RWDI, April 14, 2011.

Table IV.H-2: Wind Hazards Analysis: Criterion Speed Results (26 mph)[1]

References	Existing			Project				Cumulative			
Location Number	Wind Speed Exceeded 1hour/ year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	exceeds criterion	Wind Speed Exceeded 1hour/ year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	exceeds criterion	Wind Speed Exceeded 1hour/ year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	exceeds criterion
1	17	< 1		16	< 1	0		20	< 1	0	
2	20	< 1		24	< 1	0		22	< 1	0	
3	22	< 1		20	< 1	0		18	< 1	0	
4	34	< 1		31	< 1	0		28	< 1	0	
5	29	< 1		26	< 1	0		23	< 1	0	
6	28	< 1		28	< 1	0		24	< 1	0	
7	29	< 1		28	< 1	0		25	< 1	0	
8	28	< 1		28	< 1	0		26	< 1	0	
9	30	< 1		31	< 1	0		26	< 1	0	
10	31	< 1		31	< 1	0		27	< 1	0	

Table IV.H-2 *Continued*

References	Existing			Project				Cumulative			
Location Number	Wind Speed Exceeded 1hour/ year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	exceeds criterion	Wind Speed Exceeded 1hour/ year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	exceeds criterion	Wind Speed Exceeded 1hour/ year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	exceeds criterion
11	28	< 1		29	< 1	0		27	< 1	0	
12	26	< 1		26	< 1	0		17	< 1	0	
13	31	< 1		31	< 1	0		27	< 1	0	
14	26	< 1		26	< 1	0		26	< 1	0	
15	20	< 1		20	< 1	0		20	< 1	0	
16	28	< 1		27	< 1	0		27	< 1	0	
17	30	< 1		24	< 1	0		24	< 1	0	
18	29	< 1		28	< 1	0		29	< 1	0	
19	21	< 1		24	< 1	0		24	< 1	0	
20	24	< 1		22	< 1	0		22	< 1	0	
21	23	< 1		22	< 1	0		21	< 1	0	
22	20	< 1		19	< 1	0		22	< 1	0	
23	22	< 1		19	< 1	0		15	< 1	0	
24	12	< 1		15	< 1	0		13	< 1	0	
25	20	< 1		29	< 1	0		22	< 1	0	
26	19	< 1		26	< 1	0		25	< 1	0	
27	17	< 1		17	< 1	0		23	< 1	0	
28	18	< 1		14	< 1	0		24	< 1	0	
29	16	< 1		17	< 1	0		24	< 1	0	
30	23	< 1		24	< 1	0		**37**	**2**	**2**	**e**
31	23	< 1		23	< 1	0		29	< 1	0	
32	23	< 1		22	< 1	0		29	< 1	0	
33	17	< 1		16	< 1	0		25	< 1	0	
34	23	< 1		22	< 1	0		21	< 1	0	
35	19	< 1		19	< 1	0		18	< 1	0	
36	26	< 1		25	< 1	0		23	< 1	0	
37	26	< 1		25	< 1	0		22	< 1	0	
38	32	< 1		31	< 1	0		26	< 1	0	
39	35	< 1		34	< 1	0		27	< 1	0	
40	25	< 1		24	< 1	0		23	< 1	0	
41	35	< 1		32	< 1	0		27	< 1	0	
42	**38**	**2**	**e**	**37**	**1**	**0**	**e**	32	< 1	-2	
43	**37**	**1**	**e**	**37**	**1**	**0**	**e**	32	< 1	-1	
44	35	< 1		33	< 1	0		23	< 1	0	
45	29	< 1		28	< 1	0		24	< 1	0	
46	27	< 1		26	< 1	0		19	< 1	0	
47	26	< 1		24	< 1	0		22	< 1	0	
48	19	< 1		20	< 1	0		18	< 1	0	
49	26	< 1		27	< 1	0		22	< 1	0	
50	17	< 1		17	< 1	0		23	< 1	0	

Table IV.H-2 *Continued*

References	Existing			Project				Cumulative			
Location Number	Wind Speed Exceeded 1hour/ year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	exceeds criterion	Wind Speed Exceeded 1hour/ year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	exceeds criterion	Wind Speed Exceeded 1hour/ year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	exceeds criterion
51	17	< 1		16	< 1	0		22	< 1	0	
52	**39**	**3**	**e**	**37**	**1**	**-2**	**e**	31	< 1	-3	
53	22	< 1		21	< 1	0		18	< 1	0	
54	35	< 1		34	< 1	-1		26	< 1	-1	
55	32	< 1		31	< 1	0		27	< 1	0	
56	**38**	**2**	**e**	**38**	**2**	**0**	**e**	33	< 1	-2	
57	21	< 1		21	< 1	0		24	< 1	0	
58	31	< 1		31	< 1	0		32	< 1	0	
59	21	< 1		20	< 1	0		19	< 1	0	
60	24	< 1		24	< 1	0		23	< 1	0	
61	21	< 1		20	< 1	0		19	< 1	0	
62	20	< 1		18	< 1	0		20	< 1	0	
Average mph and hours per year	26 mph	8 hrs		25 mph	5 hrs	-3 hrs		24 mph	2 hrs	-6 hrs	
Exceedances	Existing	4		Project		4		Cumulative		1	

Bold = exceedance

[1]An equivalent wind speed of 36 mph when stated on the same basis as the criterion wind speed.

Source: Final SFMOMA Pedestrian Level Wind Study, RWDI, April 14, 2011.

As shown in Table IV.H-1, under existing conditions, a total of 39 locations (out of the 62 evaluated locations) experience wind speeds that exceed the pedestrian comfort criterion. The proposed project would change wind patterns such that four of these exceedances (at locations 3, 20, 23, and 57 on Figure IV.H-1) would be eliminated. However, the project would create new exceedances of the pedestrian comfort criterion at four locations (locations 2, 19, 25, and 26 on Figure IV.H-1). The locations where new exceedances would be created are clustered around the interior and periphery of the project site. These areas are subject to low or moderate levels of pedestrian use, and are not in widespread use for seating (thus the comfort criterion for seating areas does not apply). Therefore, the total number of exceedances of the pedestrian comfort criterion would remain the same under existing conditions and under project conditions. On average, the wind speed in the area would remain approximately the same – at 13 miles per hour (mph) – under existing and project conditions.

In the evaluated area, locations would experience winds above 11 mph approximately 19 percent of the time under existing and project conditions.

Overall, compared to existing conditions, 14 locations would experience diminished wind speeds, 35 locations would experience unchanged wind speeds, and 13 locations would experienced increased wind speeds. The highest wind speed (22 mph) would remain at the south side of Howard Street (location 43 on Figure IV.H-1). Only one of the three measured locations in Yerba Buena Gardens (location 60) would be subject to increased wind speeds as a result of the project. Winds at this location would increase by 1 mph as a result of the project. Wind speeds at the SFMOMA sculpture garden, an area subject to regular pedestrian use during museum visitation hours, would remain unchanged with implementation of the proposed project. The greatest increase in wind speeds, from 8 to 15 mph, would occur at the western terminus of Natoma Street at the project site.

Under existing conditions, four locations (locations 42, 43, 52, and 56 on Figure IV.H-1) experience exceedances of the City's hazard criterion. The locations exceeding the hazard criterion are south of the project site (locations 42, 43 and 52 in Figure IV.H-1), and at the southwest corner of the intersection of Mission Street and New Montgomery Street (location 56). The total duration of the existing exceedances for these four locations is 8 hours per year.

The proposed project would not increase winds speeds at any of these locations, and at location 52 (south of Howard Street and east of Third Street), the wind speed would be reduced by 2 mph with implementation of the proposed project. Under the project, the number of hours in which the wind speed would exceed the hazard criterion at the four exceeded locations would be reduced from 8 hours to 5 hours per year in total duration. Therefore, the SFMOMA Expansion would not result in significant effects related to wind. However, the project sponsor would seek an exception to Section 148 of the Planning Code because the project would result in four new exceedances of the pedestrian comfort criterion (although four existing exceedances would be eliminated).

Subsequent to the initial wind test, the qualitative re-examination of the earlier modeling results conducted by RWDI in May 2011 also included an evaluation of the effects of wind patterns on proposed outdoor spaces that would be developed as part of the SFMOMA Expansion. These outdoor spaces include pedestrian-accessible areas along the east side of the expanded museum at the ground and second levels, a terrace at Level 7, and a terrace at Level 10.

The pedestrian-accessible area along the east side of the expanded museum is expected to have wind conditions suitable for the intended usage as the area, as this area would be sheltered from prevailing westerly winds by the expanded museum and W-Hotel. Similarly, the east side of the Level 7 terrace would be sheltered from prevailing winds and would be comfortable for passive activities. However, due to exposure to the prevailing westerly winds, higher wind speeds resulting in conditions that could be considered uncomfortable for most passive pedestrian uses are anticipated on the west side of the Level 7 terrace and on the Level 10 terrace (depending on the final design of the terraces). If more comfortable wind conditions for passive activity are desired on the west-facing portion of the Level 7 terrace and the Level 10 terrace, features such as vertical wind screens, landscaping, and overhead canopies/trellises could be considered at strategic pedestrian locations. Such features may be developed as the project design advances and the specific programming for these outdoor areas is identified.[6] However, the hazard criterion would not be exceeded at these locations.

Impact WS-2: The proposed SFMOMA Expansion, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the site, would not alter wind in a manner that substantially affects public areas within the vicinity of the project site. (Less Than Significant)

As part of the wind tunnel testing, the effects of the project on wind patterns were analyzed in conjunction with the related effects of past, present, and reasonably foreseeable development projects, including those that would be constructed as part of the Transit Center District Plan and the Mexican Museum mixed-use project at 706 Mission Street. Similar to the project-level analysis, a total of 62 locations were evaluated within a 1,600-foot radius of the project site, with a focus on winds from the west-southwest, west-northwest, and northwest, as required by the Planning Code. Planned

[6] *Pedestrian Level Winds, Commentary on the Impact of the Revised Design*, San Francisco Museum of Modern Art, RWDI, May 26, 2011. This document is available for review at the Planning Department in Case File No. 2010.0275E.

projects in the vicinity of the site that were factored into the cumulative modeling effort include: three 600- to 675-foot buildings between Third and Hawthorne Streets, south of Clementina Street and north of Folsom Street; 350-foot building at 222 Second Street; 400-foot building at 41 Tehama Street; 150-foot building at 176 Second Street; 450-foot building at 524 Howard Street; 750-foot building on Howard Street east of Third Street; 350-foot and 250-foot buildings on the north and south sides of Howard Street (between Third and New Montgomery Streets), respectively; 750-foot building on Howard Street east of Second Street; 1,000-foot Transit Tower adjacent to the under-construction Transbay Transit Center; 550- to 850-foot buildings at 50 First Street; 600-foot building on Annie Street south of Market Street; and 550-foot building at 706 Mission Street.

Under cumulative conditions (compared to existing conditions), 37 locations would experience diminished wind speeds, five locations would experience unchanged wind speeds, and 20 locations would experience increased wind speeds. Four locations would be subject to new exceedances of the pedestrian comfort criterion, and at two locations existing exceedances would be eliminated. The SFMOMA Expansion would not make a substantial contribution to winds at any of the locations where exceedances of the pedestrian comfort criterion would occur. On average, under cumulative conditions, overall wind speeds would remain at approximately 13 mph. However, the percentage of time wind speeds would exceed the 11 mph criterion would be reduced from 19 percent of the time under existing conditions to 17 percent of the time under the cumulative scenario.

No new exceedances of the City’s hazard criterion would occur under cumulative conditions, and the number of exceedances would be reduced from four exceedances under existing and project conditions to one exceedance under cumulative conditions. In addition, the total number of annual hours of exceedance would be reduced to 2 hours per year, compared to 8 hours per year under existing conditions. Therefore, the SFMOMA Expansion would not make a considerable contribution to a cumulative wind impact.

<u>Impact WS-3</u>: The proposed SFMOMA Expansion would not create new shadow that could adversely affect outdoor recreation facilities or other public areas within the project site vicinity. (Less Than Significant)

As discussed in the setting section, there are no parks in the vicinity of the SFMOMA Expansion site that are under Recreation and Park Department jurisdiction and subject to Planning Code Section 295. Therefore, the project would not conflict with Section 295.[7] This analysis thus focuses on the potential for shadow cast by the project to adversely affect outdoor recreation facilities or other public facilities not subject to Section 295. There are numerous privately-owned public open spaces in the vicinity of the SFMOMA Expansion site; however, they are generally located east of Second Street and would not be affected by shadow that would result from the project. Open spaces that could be affected by shadow generated by the project are Yerba Buena Gardens, the SFMOMA sculpture garden (which is not considered a privately-owned public open space because an admission fee is required for access), and streets and sidewalks surrounding the site.

The proposed project is not located on any of the street segments identified in Section 146 of the Planning Code. The proposed project could cast new shadow on sidewalks in the vicinity of the project site, but new shadow coverage would be generally transitory in nature and would not substantially affect the function of sidewalks (which -- in the vicinity of the site – are used primarily as pedestrian walkways and not as places for extended periods of stationary activity). Therefore, the proposed project would not conflict with Section 146. In addition, the project would not cast shadow on public plazas or other publicly accessible open spaces other than those protected by Section 295 and thus would not conflict with Section 147 of the Planning Code. However, as described below, new shadow would be cast on the SFMOMA sculpture garden, access to which requires the payment of a museum admission fee.

As part of this analysis, shadow patterns were prepared for the proposed SFMOMA Expansion on the following dates: June 21 (the summer solstice, when the sun is at its highest point in the sky); December 22 (the winter solstice, when the sun is at its lowest point in the sky); and March 20 and September 22 (the spring and fall equinoxes, respectively, when day and night are of approximately equal length). Shadow patterns were developed for three representative times of the day: 10:00 a.m. (morning); 12:00 p.m. (midday); and 3:00 p.m. (afternoon). Existing shadow patterns and shadow

[7] *Memo Regarding Compliance with Section 295 of the San Francisco Planning Code*, Kevin Guy, February 22, 2011. This document is available for review at the Planning Department in Case File No. 2010.0275E.

patterns associated with the proposed SFMOMA Expansion are shown in Figures IV.H-2 through IV.H-13. These diagrams represent snapshots of shadow patterns at the times of the day and seasons selected for the analysis. Table IV.H-3 indicates the street segments that would be shaded by new shadow as a result of the project.

Table IV.H-3: Street Segments[1] Shaded by the SFMOMA Expansion

	March 20			June 21			September 22			December 22		
Streets	**10:00 a.m.**	**Noon**	**3:00 p.m.**	**10:00 a.m.**	**Noon**	**3:00 p.m.**	**10:00 a.m.**	**Noon**	**3:00 p.m.**	**10:00 a.m.**	**Noon**	**3:00 p.m.**
Mission												
Minna	X	X		X	X		X	X				X
Jessie												
Stevenson												
Natoma		X	X		X	X		X	X			X
New Montgomery			X						X			
Second												X
Howard				X	X	X		X				
Third												

[1]Includes adjacent sidewalks.

X = net new shadow coverage

Source: LSA Associates, Inc., 2011 and RWDI, 2011.

<u>March 20 (Spring Equinox)</u>

Morning. In the morning (see Figure IV.H-2), shadows would generally extend northwest of the site and would cover a portion of a four-story building located north of the site (170 Minna Street). In addition, a narrow, approximately 30-foot band of shadow would extend across Mission Street. No parks or open space facilities would be affected. Although shadow from the proposed building would extend across a segment of Minna Street during morning hours, Minna Street is already shaded under existing conditions in the morning. Therefore, the project would not create new shadow that substantially affects outdoor recreation facilities or other public areas.

Midday. At midday (see Figure IV.H-3), shadows cast by the project would extend to the northeast and would cover approximately the western half of the SFMOMA sculpture garden and a small segment of Minna and Natoma Streets that is currently not covered with shadow.

Afternoon. In the afternoon (see Figure IV.H-4), shadow generated by the project would extend to the east and would cover the entire sculpture garden, a portion of the buildings on the north side of Howard Street immediately to the east of the site, and a small segment of Natoma Street not currently shaded. Approximately 30 feet of shadow would also extend into New Montgomery Street, at the intersection with Natoma Street. However, the buildings on the north side of Howard Street are already covered by shadow generated by the W Hotel, and Natoma Street (and much of New Montgomery Street) is already covered in shadow for most of the day. Shadow patterns on Howard Street would remain approximately the same as under existing conditions (although the extent of the shadow to the east would increase by approximately 20 feet). Although the project would create shadow on Natoma Street, the sculpture garden, and (to a lesser extent) New Montgomery Street during the afternoon hours, this new shadow would not adversely affect the public use of these areas, as Natoma Street is narrow and shaded throughout much of the day, enjoyment of the sculpture garden would continue even if individual sculptures are shaded, and the site would continue to offer expansive view of the Cityscape, and the new shadow on New Montgomery Street would be limited in size.

No new shadow would be cast on Yerba Buena Gardens by the project during any time of the day on March 21.

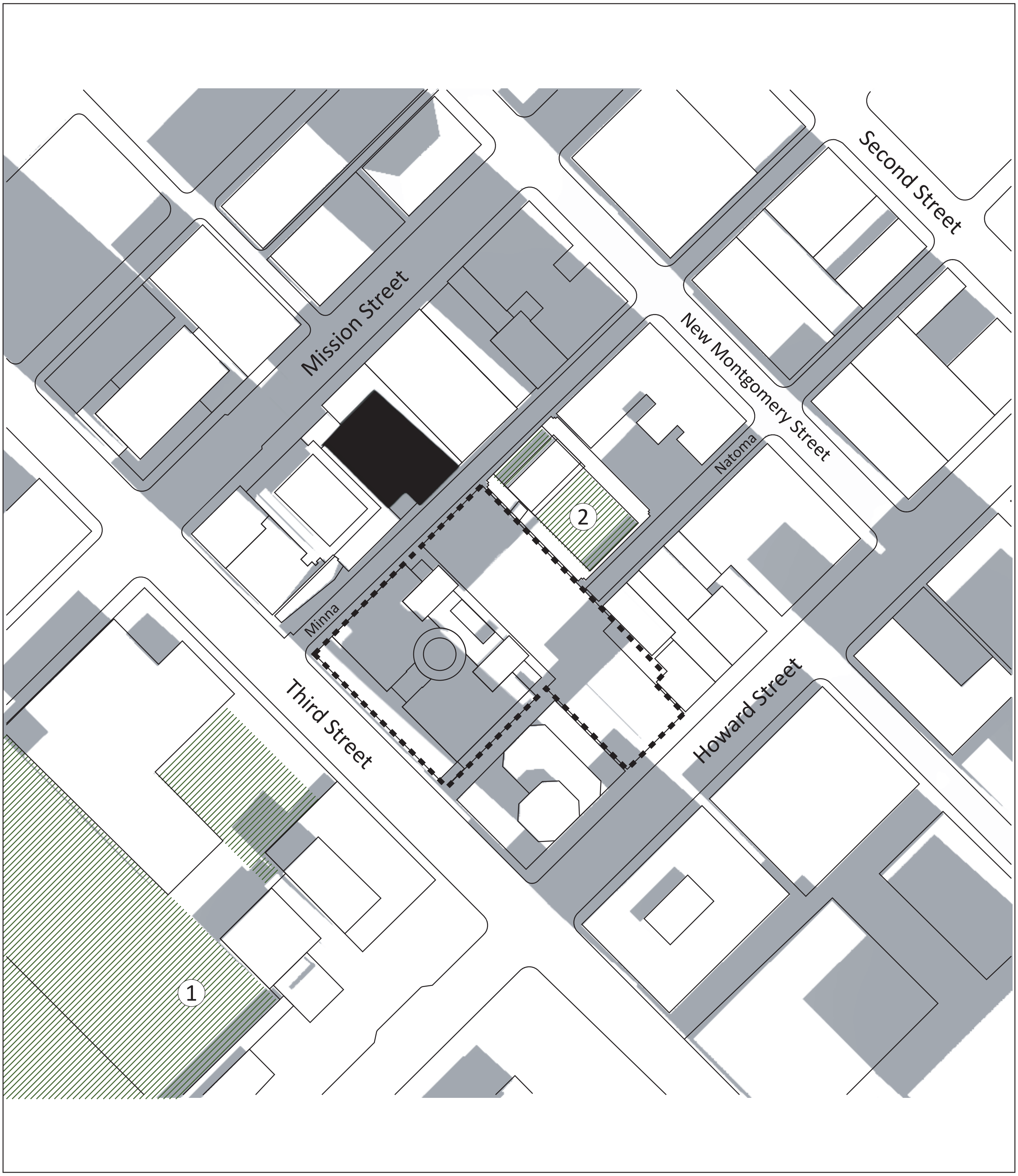
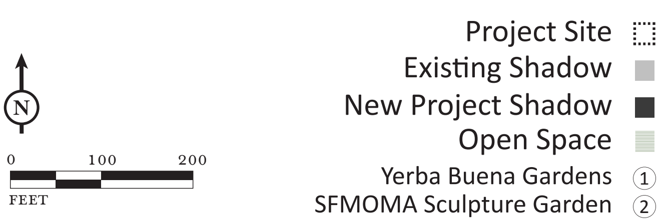


FIGURE IV.H-2



SOURCE: RWDI, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Project Shadow Pattern - Spring Equinox

March 20: 10:00 am

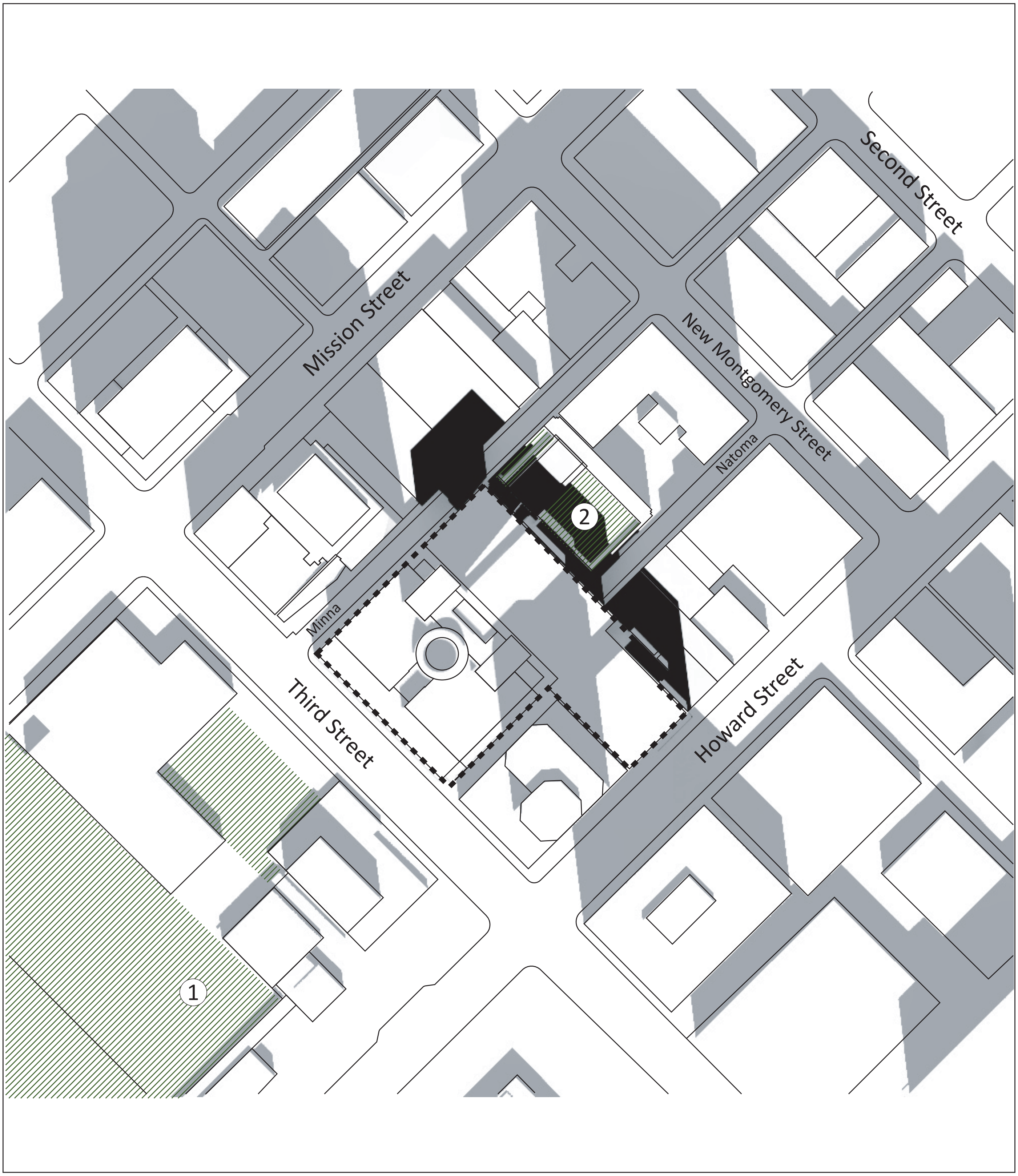


FIGURE IV.H-3

Project Site
Existing Shadow
New Project Shadow
Open Space
Yerba Buena Gardens ①
SFMOMA Sculpture Garden ②

N

0 100 200
FEET

SOURCE: RWDI, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Project Shadow Pattern - Spring Equinox
March 20: 12:00 pm

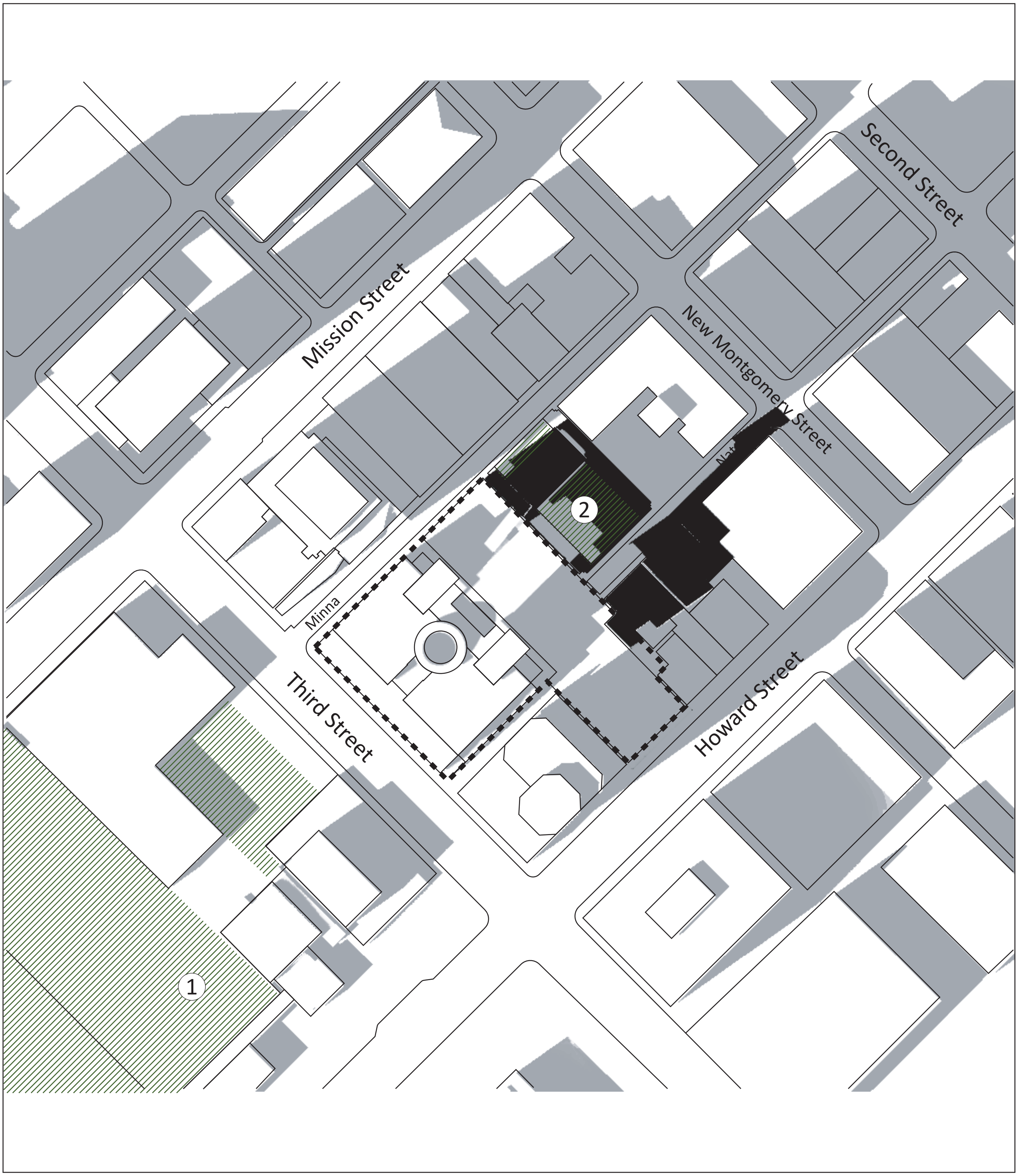


FIGURE IV.H-4

Project Site
Existing Shadow
New Project Shadow
Open Space
Yerba Buena Gardens ①
SFMOMA Sculpture Garden ②

N

0 100 200
FEET

SOURCE: RWDI, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Project Shadow Pattern - Spring Equinox

March 20: 3:00 pm

June 21 (Summer Solstice). During the summer solstice, the sun is at its highest point in the sky, and shadows are shorter compared to other days during the year.

Morning. In the morning (see Figure IV.H-5), the project would cast shadow in a northwesterly direction on an approximately 125-foot-wide segment of Minna Street. However, under existing conditions, almost the entire segment of Minna Street north of the site between New Montgomery and Third Streets is shaded in the morning. Therefore, even though the project would result in net new shadow coverage on Minna Street, it would not affect outdoor recreation facilities or other public areas. A minute portion of the Howard Street sidewalk (less than 10 square feet) would also be shaded. No new shadow would be cast on the sculpture garden in the morning.

Midday. At midday (see Figure IV.H-6), new northerly shadow would be cast across an approximately 125-foot segment of Minna Street. Shading of this short segment of street would not compromise the use or enjoyment of Minna Street north of the site due to the relatively small coverage of the new shadow and the limited duration of the shadow. No new shadow would be cast on the sculpture garden. New shading would also occur on the far western segment of Natoma Street and on the Howard Street sidewalk, but this new shading would be constrained in size and would not affect outdoor recreation or other public areas.

Afternoon. Shadows would be cast east of the site in the afternoon (see Figure IV.H-7). Under existing conditions, the sculpture garden is about one-half shaded; with the project, additional shadow (i.e., net new shadow) would be generated over the approximately 30 percent of the sculpture garden not currently in shade. In addition, additional shadow would be cast on buildings to the east of the site and an additional approximately 100-foot segment of Howard Street would be shaded. The shadow on the sculpture garden and new shadow on Howard Street would not compromise the use of these areas because enjoyment of the sculpture garden would continue even if individual sculptures are shaded, and the site would continue to offer expansive view of the Cityscape, and because the new shadow on Howard Street would be limited in size and duration. Shadow patterns on Natoma Street would remain approximately the same with implementation of the project (although a small portion of sidewalk would be subject to new shade).

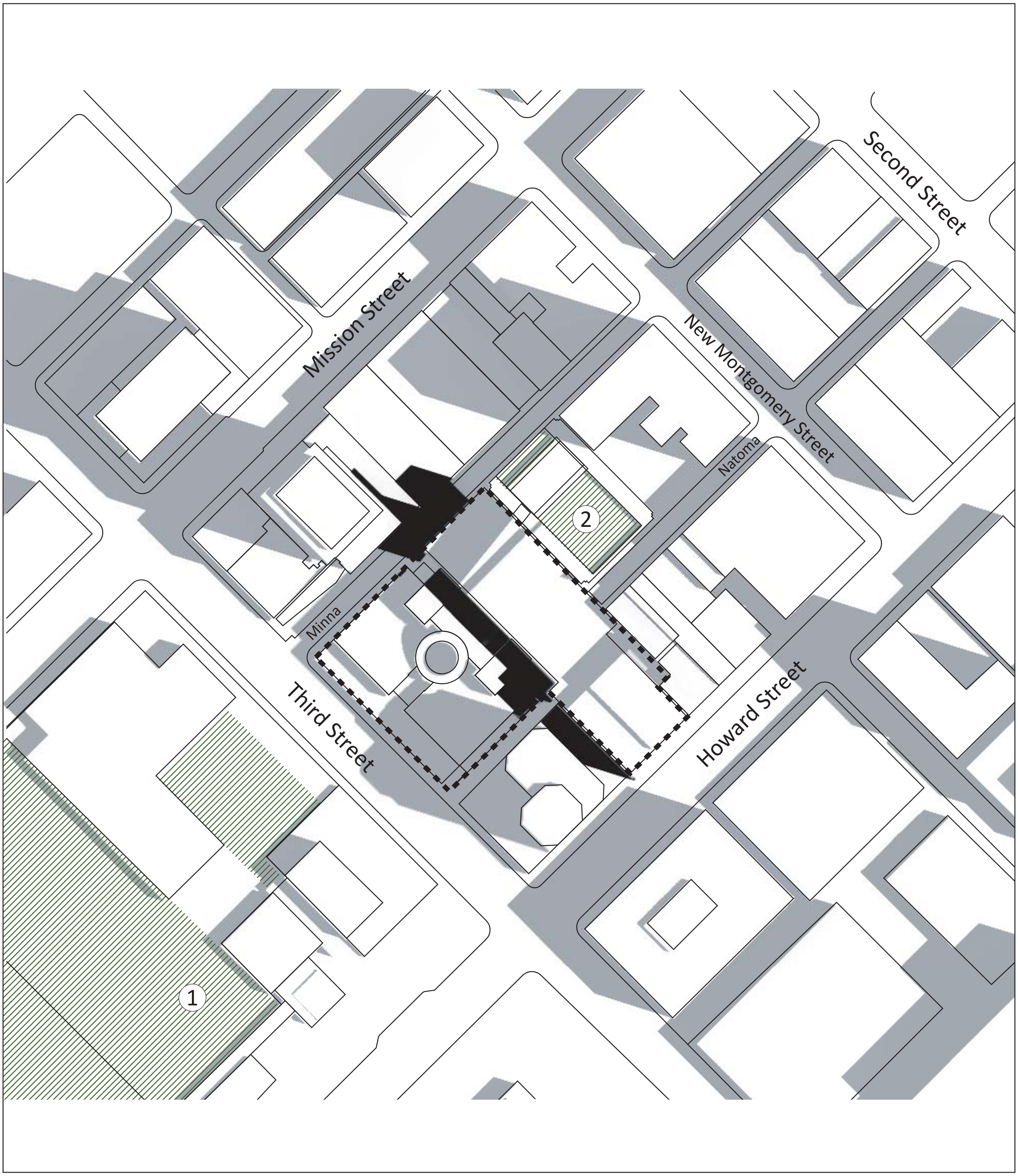
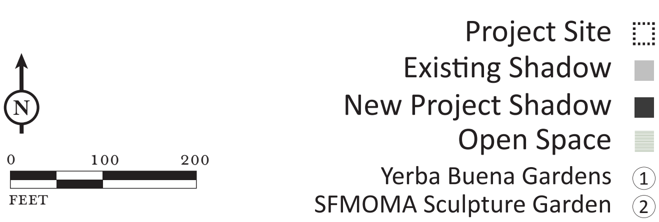


FIGURE IV.H-5



SFMOMA Expansion and Fire Station
Relocation and Housing Project EIR

Project Shadow Pattern - Summer Solstice

June 21: 10:00 am

SOURCE: RWDI, 2011.

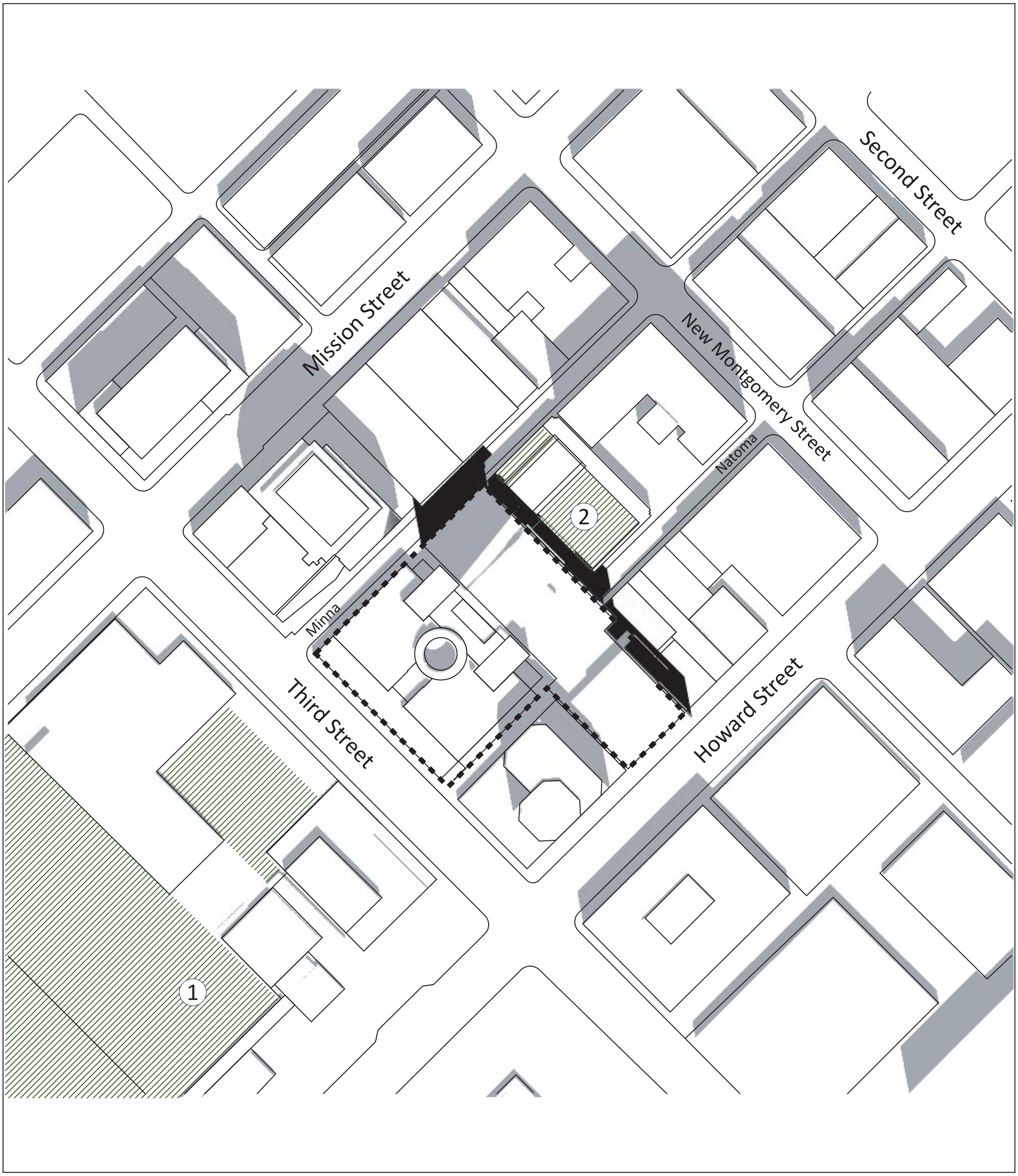


FIGURE IV.H-6

Project Site
Existing Shadow
New Project Shadow
Open Space
Yerba Buena Gardens (1)
SFMOMA Sculpture Garden (2)

N

0 100 200
FEET

SOURCE: RWDI, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Project Shadow Pattern - Summer Solstice

June 21: 12:00 pm

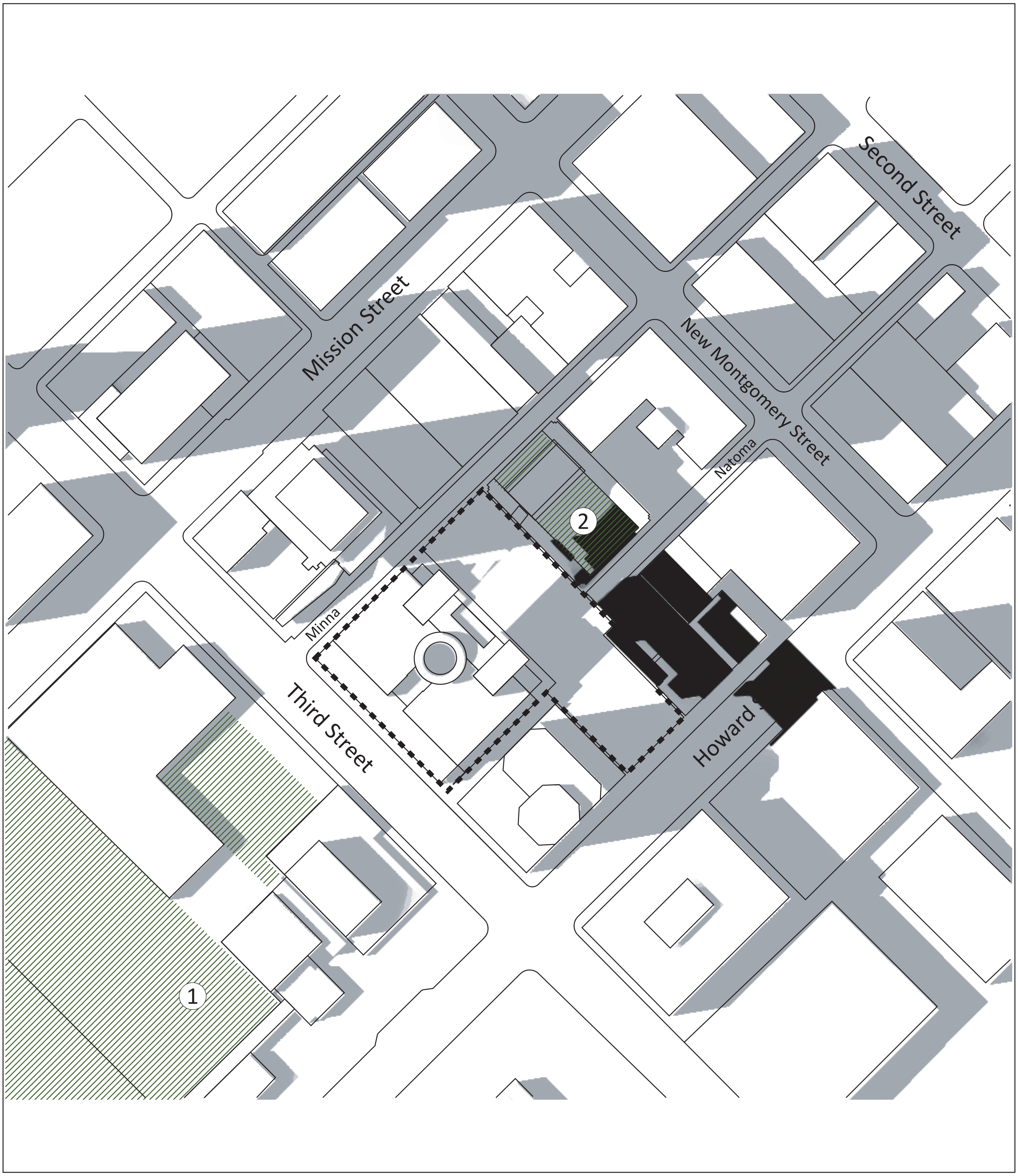


FIGURE IV.H-7

Project Site
Existing Shadow
New Project Shadow
Open Space
Yerba Buena Gardens ①
SFMOMA Sculpture Garden ②

N

0 100 200
FEET

SOURCE: RWDI, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Project Shadow Pattern – Summer Solstice

June 21: 3:00 pm

No new shadow would be cast on Yerba Buena Gardens by the project during any time of the day on June 21.

September 22 (Fall Equinox)

Morning. In the morning (see Figure IV.H-8), shadows extend in a generally northwesterly direction, across Minna Street, and would cover a portion of the four-story building directly across Minna Street from the site (170 Minna Street). In addition, an approximately 50-foot-wide shadow would extend approximately to the center line of Mission Street. Mission Street north of the site is already heavily shaded in the morning, under existing conditions. Therefore, shadow generated by the project would not substantially affect outdoor recreation facilities or other public areas.

Midday. At midday (see Figure IV.H-9), shadows cast by the project would extend to the northeast and would cover approximately 60 percent of the SFMOMA sculpture garden and an approximately 50-foot segment of Minna Street that is not currently covered with shadow. The new project shadow on Minna Street around noon would not be considered significant because Minna Street is narrow and shaded throughout much of the day, and the additional shaded area resulting from the project would be limited in extent and duration (and would not, for example, affect outdoor recreation facilities or other public areas).

Afternoon. In the afternoon (see Figure IV.H-10), project shadow would extend to the east and would cover the entire sculpture garden, small segments of Natoma Street not shaded under existing conditions, the two buildings to the east of the site along the site's Howard Street frontage, and a small segment of New Montgomery Street. However, the buildings along Howard Street are already subject to considerable shading associated with the W Hotel. Shadow would not increase along Howard Street as a result of the project. The new shadow along New Montgomery Street and Natoma Street in the afternoon would not be significant due to the small amount of new shading. The additional shadow cast on the sculpture garden in the afternoon hours would also not be considered significant as it would not compromise use of that public space. No new shadow would be cast on Yerba Buena Gardens by the project during any time of the day on September 21.

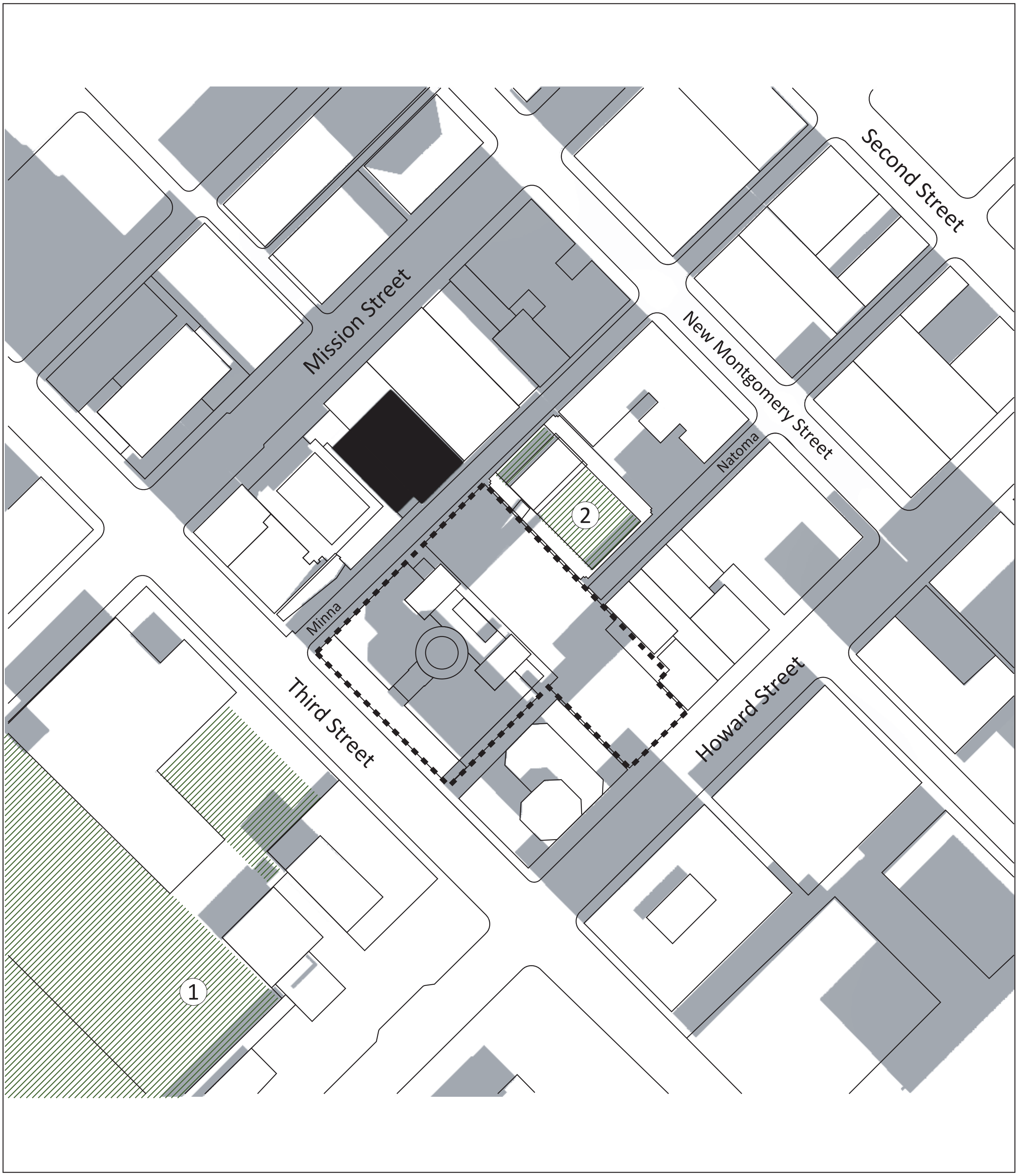


FIGURE IV.H-8

Project Site
Existing Shadow
New Project Shadow
Open Space
Yerba Buena Gardens ①
SFMOMA Sculpture Garden ②

N

0 100 200
FEET

SOURCE: RWDI, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Project Shadow Pattern - Fall Equinox

September 22: 10:00 am

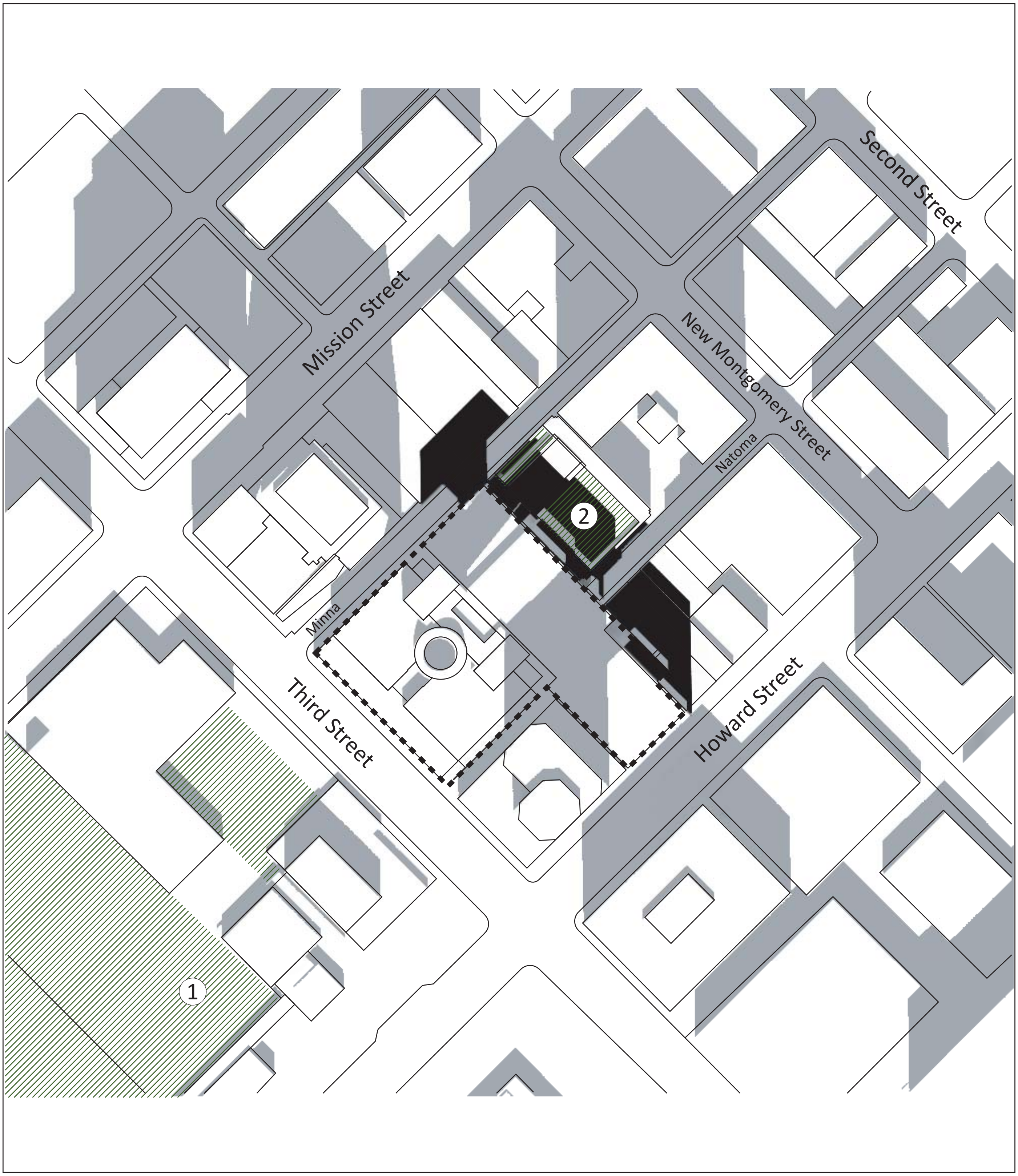


FIGURE IV.H-9

Project Site
Existing Shadow
New Project Shadow
Open Space
Yerba Buena Gardens ①
SFMOMA Sculpture Garden ②

N

0 100 200
FEET

SOURCE: RWDI, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Project Shadow Pattern - Fall Equinox
September 22: 12:00 pm

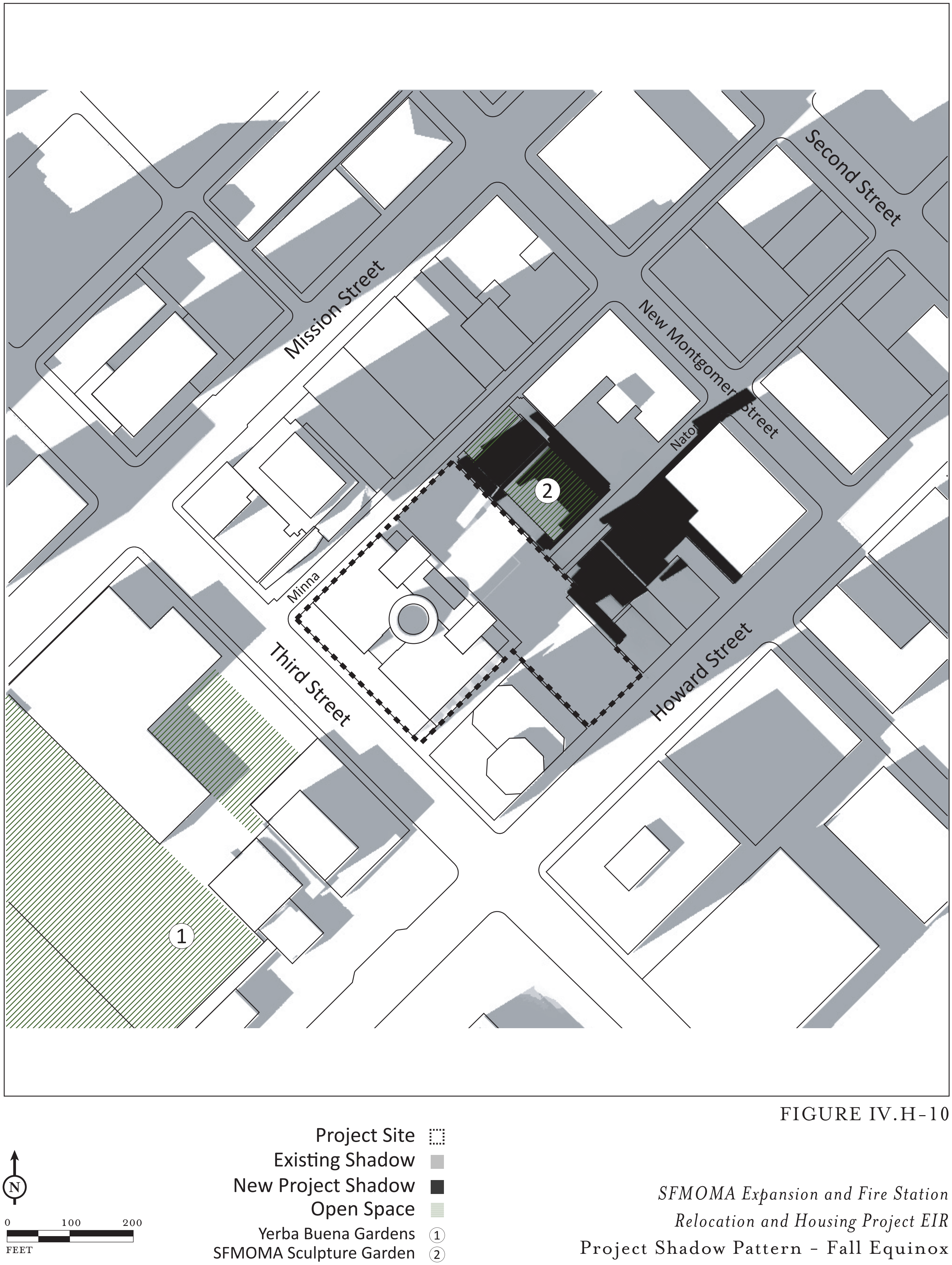


FIGURE IV.H-10

SOURCE: RWDI, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Project Shadow Pattern - Fall Equinox

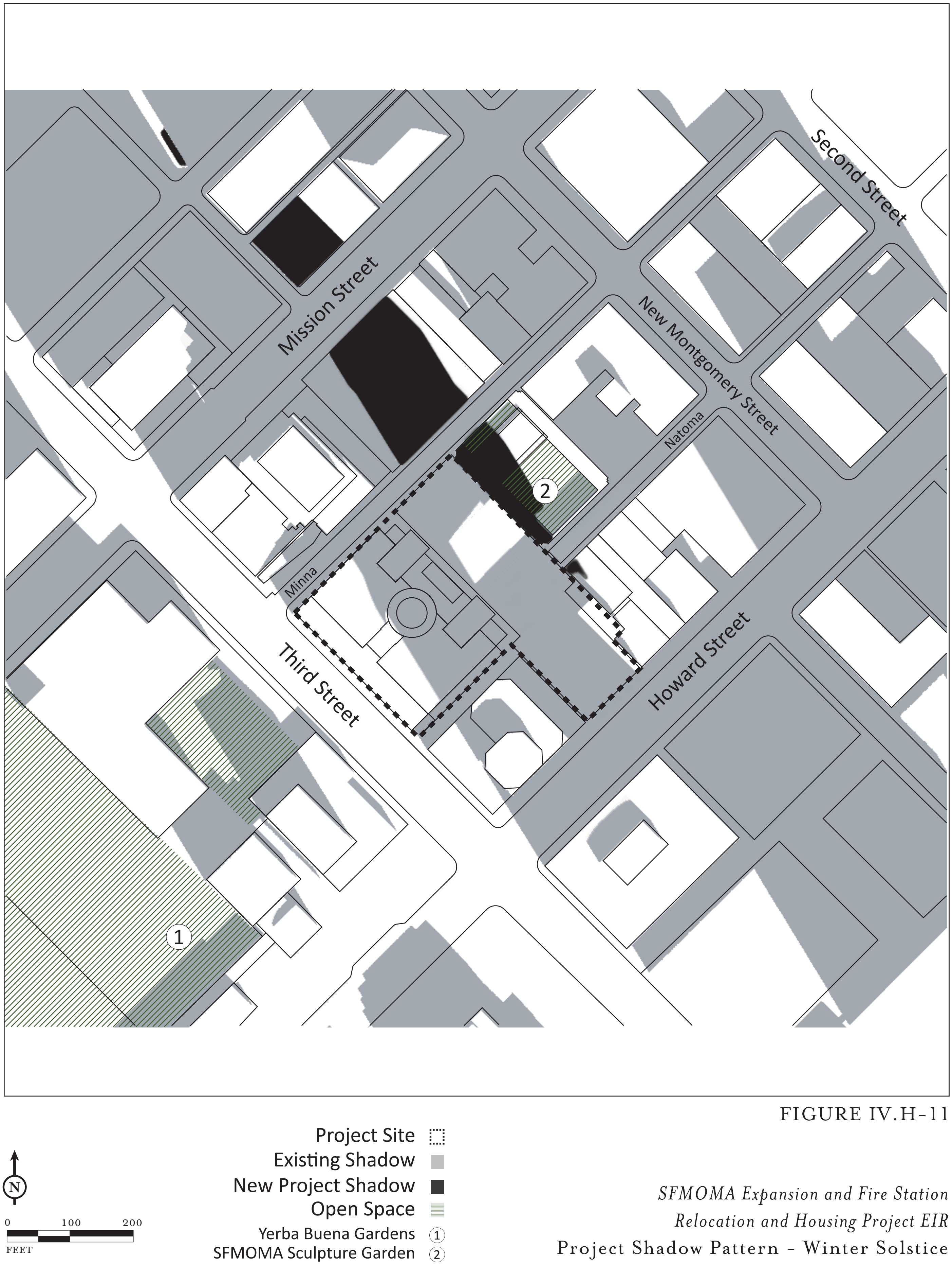
September 22: 3:00 pm

December 22 (Winter Solstice). During the winter solstice, the sun is at its lowest point in the sky, and shadows are widespread in the neighborhood surrounding the SFMOMA Expansion site.

Morning. In the morning (see Figure IV.H-11), the project would cast shadow in a northeasterly direction over the 170 Minna Street building across from the site and approximately the western 30 percent of the sculpture garden. In addition, a building north of Mission Street and a building north of Stevenson Street would be partially covered with new shadow. The shadow would not be considered significant because shadow to the north of Minna Street would not adversely affect outdoor recreation facilities or other public areas, and the sculpture garden is completely shaded under existing conditions.

Midday. At midday (see Figure IV.H-12), shadow associated with the project would extend in a northeasterly direction over Minna Street, which is already shaded under existing conditions. The building north of the site located at 170 Minna Street would be subject to shading generated by the project. No new shadows would fall on the sculpture garden because, under existing conditions, the entire sculpture garden is shaded.

Afternoon. In the afternoon (see Figure IV.H-13), shadows would extend to the east, and new shadow would cover the approximately northern 30 percent of the sculpture garden. In addition, shading would increase over the buildings adjacent to the site to the east, along Howard Street. However, no new shadow would be introduced to Howard Street or its adjacent sidewalks. Shadow would increase along Natoma Street (including portions of Natoma Street beyond New Montgomery and Second Streets) to the east of the site, but the increase in shadow coverage would be limited, as much of Natoma Street is already shaded during the afternoon. New afternoon shadows generated by the project around the Winter Solstice would not be considered significant because shadows are already widespread in the area at that time, and changes to shadow patterns would not be sufficiently adverse to compromise the use or enjoyment of the sculpture garden or Natoma Street (including intersections with New Montgomery and Second Streets).



SOURCE: RWDI, 2011.

FIGURE IV.H-11

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Project Shadow Pattern - Winter Solstice

December 22: 10:00 am

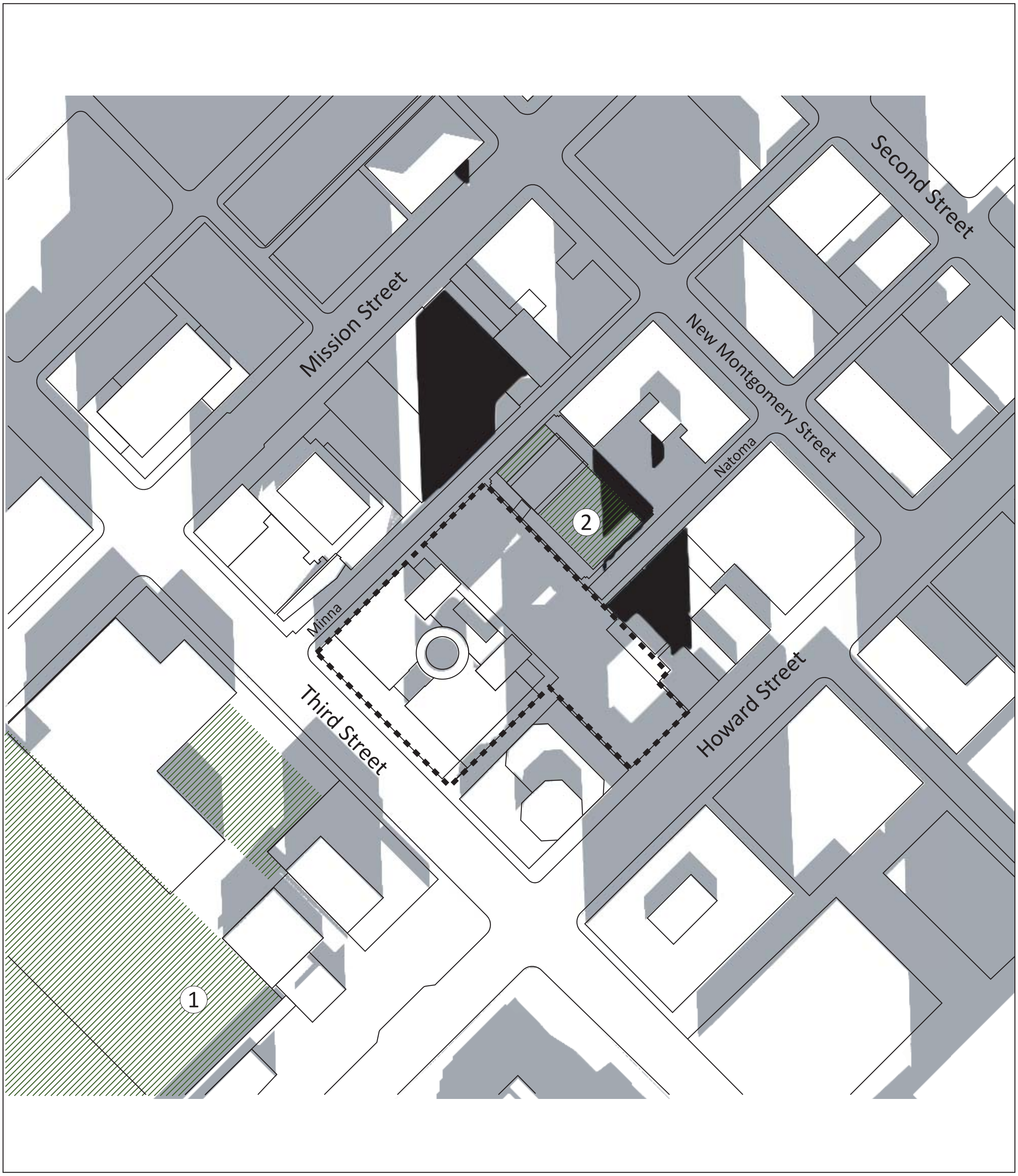


FIGURE IV.H-12

Project Site
Existing Shadow
New Project Shadow
Open Space
Yerba Buena Gardens ①
SFMOMA Sculpture Garden ②

N

0 100 200
FEET

SOURCE: RWDI, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Project Shadow Pattern - Winter Solstice

December 22: 12:00 pm

SOURCE: RWDI, 2011.

FIGURE IV.H-13

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Project Shadow Pattern - Winter Solstice

December 22: 3:00 pm

No new shadow would be cast on Yerba Buena Gardens by the project during any time of the day on December 22.

Summary. As discussed above, the net new shadow resulting from the project would be limited throughout the year. The primary reason for the small anticipated gain in shadow is that the project is located in an urbanized neighborhood with many tall buildings that result in a high degree of extant shadow coverage in the vicinity. There are no parks in the vicinity of the SFMOMA Expansion site that are under Recreation and Park Department jurisdiction and subject to Section 295. Therefore, the project would not conflict with Section 295 of the Planning Code. No new shade would be cast on Yerba Buena Gardens at any time during the year. The proposed project could cast new shadow on the SFMOMA sculpture garden and sidewalks in the vicinity of the project site, but new shadow coverage would be generally transitory in nature and would not substantially affect the function of the sculpture garden and sidewalks, which are generally not used for stationary activities (such as leisure activities at a sidewalk café). Therefore, the proposed project would not create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas.

The proposed outdoor space that would connect Natoma and Howard Streets would be shaded during the midday and afternoon hours for much of the year. However, Natoma Street is heavily shaded under existing conditions, and the shaded, enclosed visual character of the street and proposed promenade would be intrinsic to the area's design aesthetic after project implementation. In addition, the promenade would be primarily used for pedestrian transit and not for stationary uses. Therefore, shading of the proposed ground floor outdoor space would not be considered to adversely affect an outdoor recreation facility or other public area, under project conditions.

Impact WS-4: The proposed SFMOMA Expansion, in combination with past, present, and reasonably foreseeable future projects, would not create new shadow that could adversely affect outdoor recreation facilities or other public areas within the project site vicinity. (Less Than Significant)

As discussed above, there are no parks in the vicinity of the SFMOMA Expansion site that are under Recreation and Park Department jurisdiction and subject to Section 295. Therefore, the project would not conflict with Section 295 of the Planning Code. In addition, the project would not cast shadow on Yerba Buena Gardens, other City-owned public open space facilities (other than sidewalks or streets), or recognized privately-owned public open spaces. The project would increase shadow along segments of Minna Street and Natoma Street throughout the day, but these streets are subject to considerable shading under existing conditions due to their narrow width and tall adjacent buildings. To a lesser extent, the project would cast new shadow on Howard Street, but the new shadow would occur mainly during the summer, and for a limited duration (and thus would not compromise use of the street). The project would increase shading of the sculpture garden throughout the year, but this additional shadow coverage would not be considered significant primarily because of the nature of the sculpture garden (i.e., enjoyment of the sculpture garden would continue even if individual sculptures are shaded, and the site would continue to offer expansive view of the Cityscape).

The geographic scope of the cumulative shadow impact analysis is more limited than that of the cumulative land use impact analysis because only new projects situated in proximity to the project site could generate cumulative shading effects. Of the reasonably foreseeable projects in the vicinity, only two would be in sufficient proximity to the project site to result in cumulative shadow impacts: 1) the 134-140 New Montgomery Street Project (which would be located in an existing structure that currently casts shadow in the area), located approximately 220 feet due east of the SFMOMA Expansion site on the southwest quadrant of the New Montgomery and Minna Streets intersection and 2) the 706 Mission Street Project, located approximately 300 feet northwest of the SFMOMA Expansion site on the northwest quadrant of the Third and Mission Streets intersection. However, neither project would result in cumulative shadow impacts in conjunction with the proposed SFMOMA Expansion. The 134-40 New Montgomery Street Project would entail the conversion of an existing office building into residential uses, and the height or mass of the structure would not be increased to accommodate the new uses. Because the 706 Mission Street Project is located approximately 280 feet to the northwest of the SFMOMA Expansion site, shadow generated by that project would not combine with shadow generated by the SFMOMA Expansion. Therefore, the SFMOMA Expansion would not make a cumulatively considerable contribution to area-wide shadow patterns, and, together with shadow generated by other past, present, and reasonably foreseeable projects, would not create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas.

I. PUBLIC SERVICES

This section discusses the anticipated effects of the proposed SFMOMA Expansion and Fire Station Relocation and Housing Project on the fire fighting and other emergency response services provided by the San Francisco Fire Department (SFFD). As described in Chapter II, Project Description, the proposed projects involve the relocation of Fire Station No. 1 from 676 Howard Street to a site located at 935 Folsom Street. The relocation is proposed to allow for the expansion of SFMOMA. Fire Station No. 1 is considered an "essential facility," which is a public facility that is critical to maintaining public health and/or safety, and that is typically difficult to site.

As discussed in the Public Services section of the Initial Study, the proposed projects could increase or alter demands for fire protection services, through changes to service areas and response times associated with the proposed relocation of Fire Station No. 1. These potential effects are evaluated in this section of the EIR. Other than to SFFD services, the Initial Study found that the proposed projects would not result in significant adverse impacts associated with the provision of, or need for, new or physically altered government facilities, including police, school, or park and open space facilities. Public services (other than SFFD services) and the less-than-significant impacts of the proposed projects on these services are discussed on pages 116 to 120 of the Initial Study, included as Appendix A. Some of the public services analysis in the Initial Study is presented in this section for informational purposes.

Setting

The following section provides an overview of the SFFD and SFFD services, and a description of the geographic distribution of fire stations, service areas, and the function, staffing, and operations of Fire Station No. 1. Information in this section is based on communication with SFFD staff, a review of the Transportation Impact Analysis conducted for the projects (and used to prepare Section IV.D, Transportation and Circulation, of this EIR), and a Review of San Francisco's Fire and Emergency Medical Services conducted by the San Francisco Office of the Controller in 2004. The information used in this analysis represents the best available data on SFFD services.

Overview of San Francisco Fire Department. The SFFD provides emergency services to the City and County of San Francisco. The SFFD consists of 42 engine companies, 19 truck companies, 20 ambulances, 2 rescue squads, 2 fireboats, and 19 special purpose units. The engine companies are organized into nine battalions. There are 41 permanently-staffed fire stations (one fire station out of the 42 existing stations is currently out of service). Although the SFFD system has evolved over the years to respond to changing needs, the current station configuration has not changed substantially since the 1970s.[1]

Figure IV.I-1 shows the location of the fire stations in San Francisco. Each fire station has an area of responsibility for which it is typically the first responder to emergency calls (Figure IV.I-2 shows these primary response areas for each station). This means that the assigned fire station and its units (unless out on another call) will be dispatched first to a call within that area of responsibility. These areas have been designed so as to optimize response times.

Staffing at each station is determined based on the types of firefighting apparatuses each station maintains (which is related to the demand for emergency services experienced at each station). Engines are staffed with one officer and three firefighters, many of whom are trained emergency medical technicians (EMTs). On an Advanced Life Support (ALS) engine, one of the firefighters is a firefighter/paramedic, with a significantly higher level of medical training than an EMT. Trucks are staffed with one officer and four firefighters. Ambulances are staffed with an EMT and a paramedic, who provides pre-hospital advanced medical and trauma care. The number of engines, trucks, and ambulances that are on duty at any one time is based on staffing availability.

The SFFD has redundancy built into its response system, so that prompt responses can occur if multiple emergencies occur simultaneously within a primary response area. Incident calls and

[1] *A Review of San Francisco's Fire and EMS Services*, City and County of San Francisco, Office of the Controller, April 28, 2004. This document is available for review at the Planning Department in Case File No. 2009.0291E.

FIGURE IV.I-1

NOT TO SCALE

Fire Station Location and Station Number

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Station Location Map

SOURCES: COUNTY OF SAN FRANCISCO TRANSPORTATION AUTHORITY, 2004; LSA ASSOCIATES, INC., 2010.

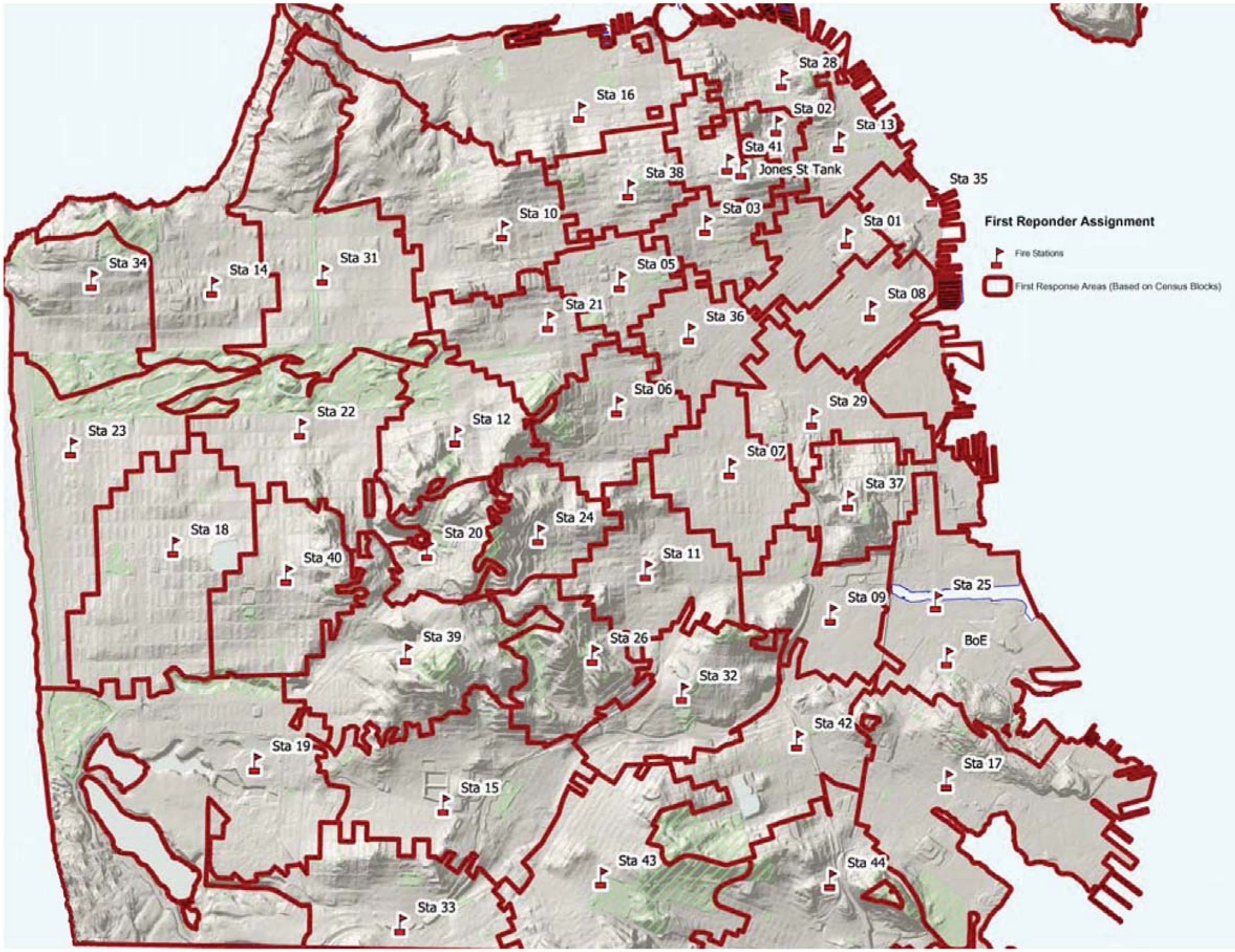


FIGURE IV.I-2

NOT TO SCALE

SOURCES: CITY & COUNTY OF SAN FRANCISCO, 2004; LSA ASSOCIATES, INC., 2010.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Primary Station Response Areas

responses are coded to fire boxes.[2] For each box, the SFFD has a protocol and order in which stations are called to respond, depending on the type of incident and whether vehicles or equipment are in use at another location.

The SFFD is organized into three Divisions, which are the largest geographical components of the SFFD. The Airport Division (Division 1) covers San Francisco International Airport; Division 2 covers the northern part of the City; and Division 3 covers the southern part of the City, including the project sites. Division 3 stretches approximately from Market Street on the north to the southern border of the City (encompassing Treasure Island and Yerba Buena Island, and the former Hunter's Point Naval Shipyard). Division 3 covers a mix of land uses, including the City's primary concentration of industrial uses.

Each Division consists of an assemblage of Battalions. Each Battalion consists of four to six individual stations. Battalion 3 (which encompasses the SFMOMA Expansion and Fire Station Relocation and Housing Project sites) is bounded by Market Street to the north; the Embarcadero to the east; Twentieth Street to the south; and an irregular line comprising several streets (including Langton Street, Folsom Street, Ninth Street, Bryant Street, Florila Street, Alabama Street, and Harrison Street) to the west (see Figure IV.I-3). Out of all the battalions, Battalion 3 received the second-highest number of emergency calls in 2005 and 2006 (Battalion 2, immediately to the west of Battalion 3, received the most calls). In 2005, Battalion 3 received 7,844 calls; it received 7,956 calls in 2006. Figure IV.I-4 shows the geographic density of emergency response calls in the City.

In Battalion 3, long-range plans include the construction of a new fire station as part of a planned 320,000 gross-square-foot public services facility in the Mission Bay South Redevelopment Area. The facility would include a 22,000 square-foot fire station, and potential reuse of the existing vacant Fire Station No. 30.[3]

[2] An incident is a specific event to which one or more fire stations or fire vehicles respond. Responses include each vehicle that is dispatched to the incident. Therefore, for one incident (depending on type), there could be two or more responses.

[3] *Redevelopment Agency Case No. ER #919-97 Addendum #7, Mission Bay Public Safety Building*, San Francisco Redevelopment Agency, January 7, 2010. This document is available for review at the Planning Department in Case File No. 2009.0291E.

Between July 1, 2005 and June 30, 2006, the SFFD responded to 100,402 incidents. Of these incidents, the majority (52.7 percent) required a response by combined fire and emergency medical services (EMS) personnel; 23.6 percent required a response by fire personnel; and an equal percentage required a response by EMS personnel (medic only). In general, requests for an SFFD response peak at 3:00 p.m.; the fewest calls are received between 4:00 and 5:00 a.m.[4]

The SFFD seeks to adhere to the response time goals established by the National Fire Protection Agency, as listed below this paragraph. Across all standards, the SFFD has an achievement rate of 90 percent. In San Francisco, the response time clock starts when the dispatch is received and acknowledged at the station. The clock stops when the responding unit tells the dispatcher that it is on the scene. In the case of a 5-minute elapsed response, the SFFD standard for "turn-out" time (the time from acknowledgement of the call to leaving the station) is 1 minute, leaving 4 minutes for travel. Below are the response time standards for fire suppression and emergency medical incidents established by the National Fire Protection Agency, which are used by the SFFD.

<u>Fire Suppression Incident</u>

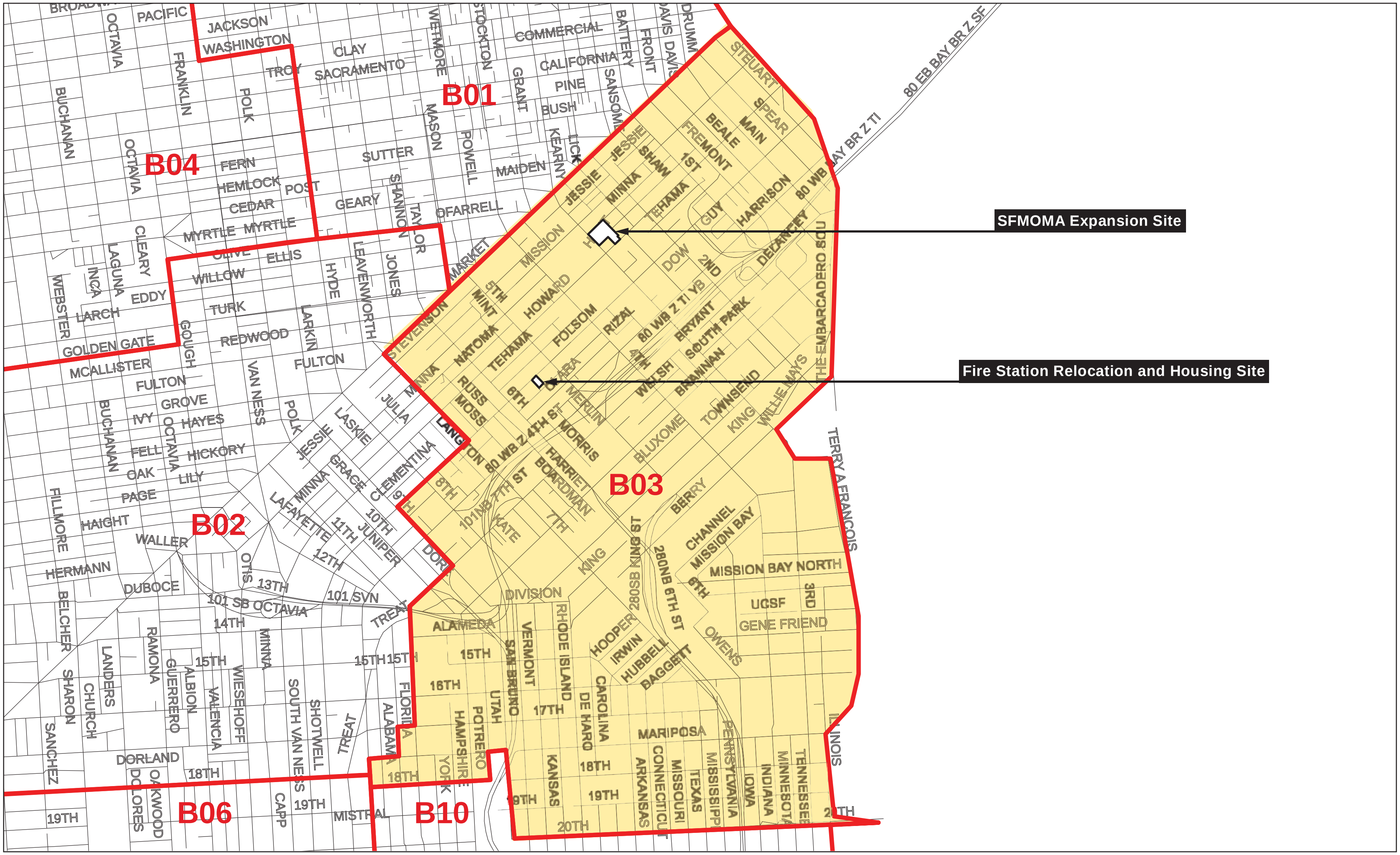
- First Arriving Engine Company Total Response Time: 5 minutes
- First Full Alarm Assignment Total Response Time: 9 minutes

<u>Emergency Medical Incident</u>

- First Responder Unit Total Response Time: 5 minutes
- Advanced Life Support (ALS) Unit Total Response Time: 9 minutes

In San Francisco, approximately 50 percent of the overall workload for suppression equipment (engines and trucks) is due to alarms, including commercial and residential building alarms, alarms outside buildings, and street box alarms.

[4] *A Review of San Francisco's Fire and EMS Services*, City and County of San Francisco, Office of the Controller, April 28, 2004. This document is available for review at the Planning Department in Case File No. 2009.0291E.



NOT TO SCALE

Battalion 3

Project Sites

SOURCES: COUNTY OF SAN FRANCISCO TRANSPORTATION AUTHORITY, 2004; LSA ASSOCIATES, INC., 2011.

FIGURE IV.I-3

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Battalion 3

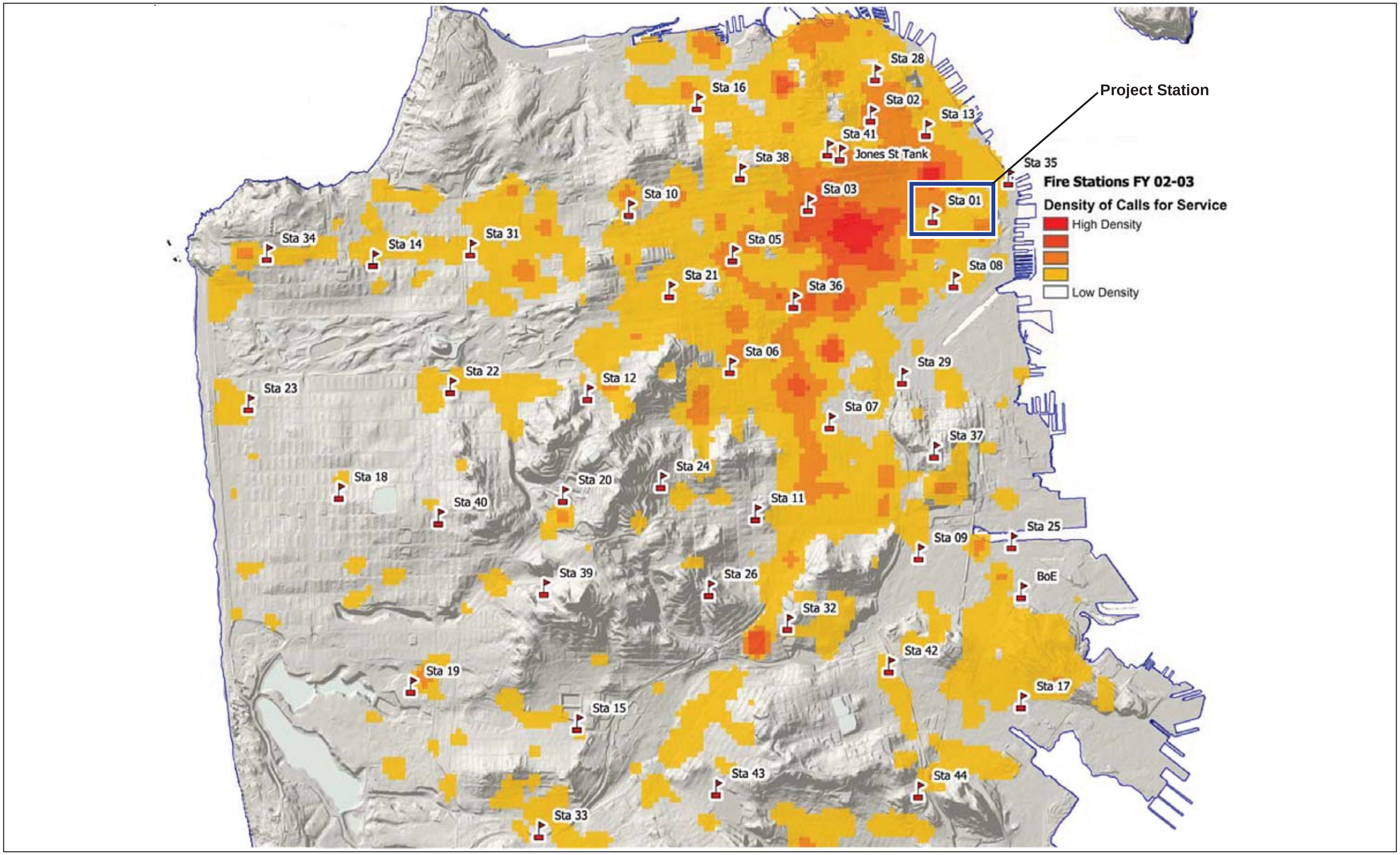


FIGURE IV.I-4

N

NOT TO SCALE

SOURCES: CITY & COUNTY OF SAN FRANCISCO, 2004; LSA ASSOCIATES, INC., 2010.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Density of Calls for Service

Fire Station No. 1. Fire Station No. 1 is located at 676 Howard Street, on the SFMOMA Expansion site. Fire Station No. 8, at 36 Bluxome Street, between Fourth and Fifth Streets, the second closest fire station to the project sites, is about 0.7 of a mile to the southwest of the SFMOMA Expansion site and about 0.5 of a mile southeast of the Fire Station Relocation and Housing Project site.

Fire Station No. 1, which is located in Division 3 and Battalion 3, is the busiest of the SFFD fire stations, with an average of 50 responses per day. Factors that contribute to the high demand for emergency responses at Fire Station No. 1 include the high population density in the response area, along with a wide range of land uses and a large transient population. Of Fire Station No. 1's 50 average daily responses, approximately 19 involve the use of an engine and nine require the use of a truck.[5] In 2002-2003, Fire Station No. 1 was responsible for 8 percent of all responses in the City. The existing fire station is staffed by 13 firefighters and houses three vehicles.

Table IV.I-1 summarizes the number and type of incidents for fiscal years 2007-2008 and 2008-2009 to which the following stations responded: Stations No. 1, No. 8, and No. 35 in Battalion 3; Station No. 3 in Battalion 4 to the northwest of the project sites; and Station No. 29 in Battalion 2 to the southwest. At Station No. 1, the number of calls on an annual basis has remained relatively constant over the two years that the data in Table IV.I-1 cover. Emergency and non-emergency calls account for approximately 80 percent of calls, alarms account for 18 percent of calls, and fires/rescues account for 2 percent of calls.

Certain fire stations have special functions, which are sometimes related to the geographic location of the station. Fire Station No. 1 specializes in responses involving hazardous materials and scuba diving. Station No. 1 is one of the two stations in San Francisco that contains a rescue squad. A rescue squad is a group of specialists trained to undertake human rescues of all types, including rescues from San Francisco Bay and the Pacific Ocean. The second San Francisco rescue squad is located at Station No. 7 at 19th and Folsom Streets. Each rescue squad is assigned to serve one half of

[5] *A Review of San Francisco's Fire and EMS Services*, City and County of San Francisco, Office of the Controller, April 28, 2004. This document is available for review at the Planning Department in Case File No. 2009.0291E.

San Francisco, and Station No. 1 would continue to provide these special functions following its relocation to 935 Folsom Street.

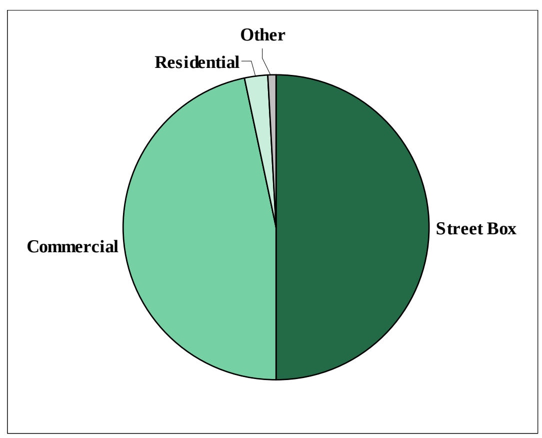
Table IV.I-1: SFFD Responses by Type (Selected Fire Stations)

Fiscal Year/Call Type	Fire Station/Location No. 1 Howard/Third	No. 3 Post/Polk	No. 8 Bluxome/Fourth	No. 29 16th/Vermont	No. 35 Pier 22 ½	Average
2007-2008						
Alarms	2,484	1,414	539	280	376	1,019
Fire/Rescue	318	211	104	62	53	150
Medical – No Emergency	3,802	2,205	771	335	307	1,484
Medical – Emergency	7,455	4,259	1,325	634	580	2,851
Total	**14,059**	**8,089**	**2,739**	**1,311**	**1,316**	**5,504**
2008-2009						
Alarms	2,507	1,392	542	314	355	1,022
Fire/Rescue	274	206	68	65	53	133
Medical – No Emergency	3,101	1,918	637	324	313	1,259
Medical – Emergency	7,704	4,523	1,351	666	579	2,965
Total	**13,586**	**8,039**	**2,598**	**1,369**	**1,300**	**5,379**

Source: SFFD, 2010.

At Fire Station No. 1, alarms account for approximately 18 percent of the total workload. Of the calls due to alarms, 50 percent are due to street box alarms and 47 percent are due to commercial alarms. Chart IV.I-1 illustrates the breakdown of alarms by type.

Chart IV.I-1: Breakdown of Alarms by Type, Fire Station No. 1



Source: *A Review of San Francisco's Fire and EMS Services*, City and County of San Francisco, Office of the Controller, April 28, 2004. This document is available for review at the Planning Department in Case File No. 2009.0291E.

The SFFD indicates that the current deficiencies of Fire Station No. 1 include: rush hour and pedestrian traffic in the site's vicinity (which complicates the departure of emergency vehicles); and the distance of the fire station from the Tenderloin neighborhood and the adjacent Sixth Street corridor to the south – where the majority of the station's emergency calls derive. In addition, the station has two vehicle bays (instead of the three bays proposed as part of the project), requiring one of the station's three fire trucks to be "parked in" or parked on Howard Street. Lastly, street fairs and other events in the area (e.g., conventions), may hinder response times and make vehicle maneuvers more difficult.[6]

The existing structure is also seismically unsound. In 1997, a large concrete wall segment being lifted by a crane during construction of the W Hotel fell through the roof of Fire Station No. 1, and penetrated both floors, ending up in the basement of the station. That damage was repaired, but the Department of Public Works estimates that bringing the station to modern seismic standards for an essential facility would cost approximately $9.5 million.

From the existing station on Howard Street, vehicles leaving the station travel westbound on Howard Street to access either Third Street northbound to continue to destinations north of Market Street, or continue westbound on Howard Street for locations west and south (via Fourth Street). For destinations to the east, vehicles need to either access Market or Mission Streets eastbound from Third Street northbound, or access Folsom Street eastbound from Fourth Street southbound. Fire Station No. 1 is located in an area with a high concentration of pedestrian activity (due to the proximity of the convention center, cultural institutions, commercial office uses, and other uses), is along a major access route to the regional freeway system (e.g., New Montgomery and Howard Streets), and is adjacent to a busy passenger zone where taxis and limousines occasionally extend upstream from the W Hotel. (See Figures II-2 and IV.A-1 for an illustration of the traffic-generating land uses surrounding Fire Station No. 1.) These conditions require constant monitoring of roadway conditions and extra precautions by firefighters during testing of equipment and incident responses.

Regulatory Setting. This section describes applicable State and local policies and regulations that pertain to fire safety.

<u>California Health and Safety Code</u>. State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which include building standards (also found in the California

[6] Personal communication with Thomas Doudiet, Assistant Deputy Chief, and Monica L. Fields, Deputy Chief of Administration, San Francisco Fire Department, November 18, 2010.

Building Code), and requirements for fire protection and notification systems, fire protection devices (such as extinguishers and smoke alarms), and fire suppression training.

San Francisco Fire Code. The San Francisco Fire Code incorporates by reference the California Fire Code, with certain local amendments. The San Francisco Fire Code regulates and governs the safeguarding of life and property from fire and explosion hazards arising from the storage, handling, and use of hazardous substances, materials, and devices, and from conditions hazardous to life or property in the occupancy of buildings and premises; provides for the issuance of permits, inspections, and other SFFD services; and allows for the assessment and collection of fees for those permits, inspections, and services. Revisions to the San Francisco Fire Code are scheduled for 2011.

The SFFD reviews building plans to ensure that certain fire and life safety features are provided and maintained in the buildings that fall under its jurisdiction. In coordination with the San Francisco Department of Building Inspection (DBI), the SFFD conducts plan checks to ensure that all structures, occupancies, and systems are designed in accordance with the San Francisco Building Code. Section 511 (Local Fire Safety Feature Requirements) of the San Francisco Fire Code requires that buildings 200 feet or greater in height must provide at least one elevator approved by the SFFD for firefighter use under fire conditions.

San Francisco General Plan. The San Francisco General Plan's Community Facilities Element contains the following principles related to the provision of fire facilities in San Francisco:

- In general, firehouses should be distributed throughout the City so that each firehouse has a primary service area extending within a radius of 0.5 of a mile. This spacing should vary in relation to population densities, building intensities and types of construction, the pattern of trafficways, and with the relative degree of fire hazard.
- Firehouses should be located on streets close to and leading into major or secondary thoroughfares.
- Firehouses should be located so that no topographic barriers require time-consuming detours within the primary service area of each firehouse.

Impacts

This section analyzes the impacts related to SFFD services that could result from implementation of the projects. The section begins with the significance criterion, which establishes the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the proposed projects. Mitigation measures are identified, as appropriate. As noted above, the potential impacts of the projects on all public services other than SFFD services are discussed on pages 116 to 120 of the Initial Study, included as Appendix A.

Significance Criterion. Implementation of the proposed projects would have a significant effect on public services if they would result in substantial adverse physical impacts associated with the provision of, or need for, new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any public services such as fire protection, police protection, schools, parks, or other services.

Impacts. This section discusses the impacts to public services associated with implementation of the proposed projects.

<u>Impact PS-1</u>: The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project would not result in adverse effects on response times and station efficacy. (Less Than Significant)

The proposed projects would result in demolition of the existing Fire Station No. 1, located at 676 Howard Street on the SFMOMA Expansion site. The fire station, which was built in 1958, comprises 14,410 square feet of space in a 2-story building and contains two vehicle bays allowing direct ingress/egress for only two of the fire station’s three fire trucks.

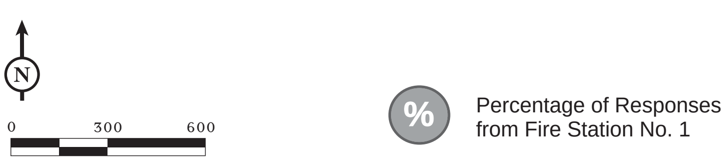
As part of the proposed projects, a new fire station would be developed at 935 Folsom Street. The new fire station would comprise approximately 15,000 square feet of interior space on a footprint of 6,750 square feet, and would contain three vehicle bays (allowing instant direct ingress/egress for the fire station's three trucks). Besides the three bays, the fire station would include modern features not present in existing Fire Station No. 1, including a design that is in accordance with current seismic standards for an essential facility, a dedicated communications room, a design that is accessible to the disabled, enhanced locker and shower facilities for both male and female firefighters, and on-site parking. According to the SFFD, these features – in addition to the extra vehicle bay – would represent an improvement over existing conditions at Fire Station No. 1 and would assist the fire station in providing effective emergency response service to its primary response area and surrounding areas.[7]

The proposed new location of Fire Station No. 1 was selected based on a comprehensive search by the SFFD. The search took into account the availability of land, land use compatibility, local air quality, and the ability to adequately reach the service area (including areas within the primary response area that experience a high density of requests for emergency services). As shown in Figure IV.I-4, the largest, most dense concentration of requests for emergency services in the City occurs west of existing Fire Station No. 1, roughly corresponding to the southern portion of the Tenderloin neighborhood, including the corridor around Sixth Street, extending a few blocks south of Market Street.

In 2009, Station No. 1 undertook approximately 12,460 responses to incidents (note that multiple vehicles responding to the same incident are counted as separate responses), with monthly responses ranging between 830 and 1,190, and with an average of about 1,040 responses per month. Approximately 33 percent of all responses from Station No. 1 were to locations east of Fifth Street and north of Harrison Street; approximately 8 percent were along the Fifth Street corridor north of Harrison Street; 53 percent were west of Fifth Street and north of Harrison Street (primarily along the Sixth Street corridor); and 6 percent were south of Harrison Street (see Figure IV.I-5).

[7] Personal communication with Thomas Doudiet, Assistant Deputy Chief, and Monica L. Fields, Deputy Chief of Administration, San Francisco Fire Department, November 18, 2010.

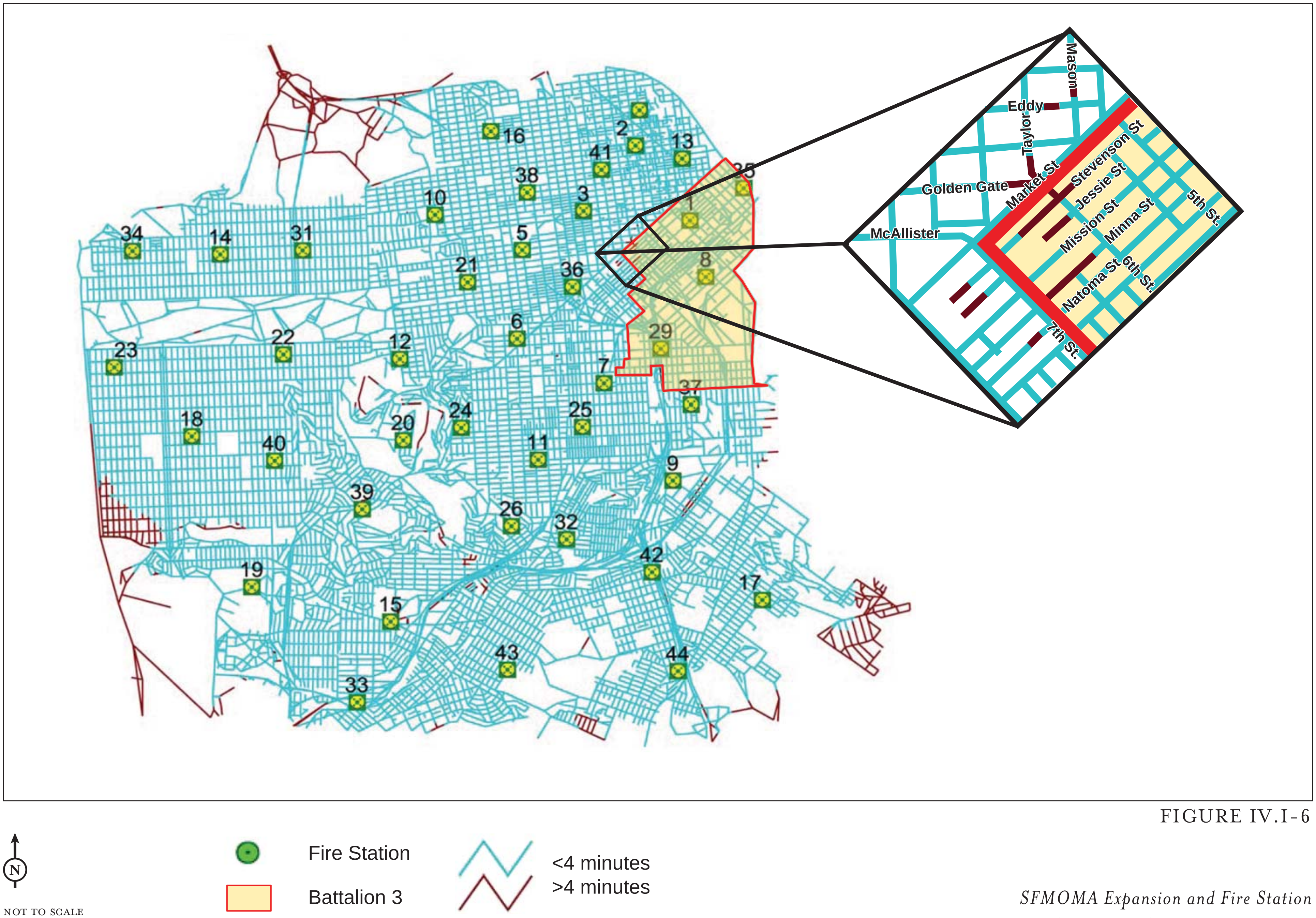
FIGURE IV.I-5



SOURCE: LSA ASSOCIATES, INC., 2010.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Response at Fire Station No. 1



SOURCES: COUNTY OF SAN FRANCISCO TRANSPORTATION AUTHORITY, 2004; LSA ASSOCIATES, INC., 2010.

FIGURE IV.I-6

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Station Coverage

In order to respond adequately to this high-density area, and to meet other criteria, the SFFD identified the preferred location for a new fire station as an area bounded by Mission Street on the north; Second Street on the east; Harrison Street on the south; and Seventh Street on the west. The proposed new fire station location is located approximately in the south-central portion of this preferred relocation area, and would provide enhanced access to the high-density call area around Sixth Street and the Tenderloin neighborhood in general, as described below.

Figure IV.I-6 shows the anticipated current response time of existing fire stations to all areas of the City. As shown in this figure, a small pocket of area for which response times of over 4 minutes exists centers around the vicinity of Sixth Street and Market Street. The proposed fire station location would allow for easier and faster access to this area.

To further evaluate the effect of the proposed relocation of Fire Station No. 1 on emergency response times, 2009 data on dispatch, on-scene times, and incident locations for trips by Engine 1 at Fire Station No. 1 were used to calculate average travel times (for all responses at all times of day) and average travel speeds. Please refer to Section IV.D, Transportation and Circulation, for additional detail. The travel times, travel speeds, and distance travelled were calculated from Station No. 1 to four representative locations (Second Street and Market Street; Second Street and Folsom Street; Fifth Street and Folsom Street; and Sixth Street and Market Street). These locations, which are mapped in Figures IV.E-1 through IV.E-4 in Section IV.E, Noise, were selected because they generate the highest number of calls for SFFD assistance. Existing average travel times between the existing station and incident locations were observed to be less than 5 minutes, and generally between 3 and 4 minutes. Changes in travel distance to the four locations from the fire station relocation site at 935 Folsom Street and existing representative travel times were used to determine the anticipated changes in travel times.

Based on this analysis, travel distances and travel times would be shorter for responses along Fifth Street, Sixth Street, and Folsom Street with the new station in place. While the distance to a response at Market Street/Second Street would increase, it is not anticipated that travel times would increase substantially, as average travel times would remain under 5 minutes. This location would be accessible via Folsom Street eastbound to Second Street northbound. Under existing conditions, due to the one-way street system and congestion along the Third Street corridor, travel times to Market Street/Second Street are longer compared to locations further away.[8] Please refer to Section IV.D, Transportation and Circulation, for additional detail.

Therefore, the relocation of Fire Station No. 1 to 935 Folsom Street would result in response times such that areas around Sixth and Market Streets would experience improved response times. The proposed fire station relocation would thus not substantially compromise response times in Fire Station No. 1's primary response area and would result in improved response times for certain areas with a high density of requests for emergency services (possibly freeing-up fire personnel availability for emergency responses elsewhere). Similarly, the relocated fire station would not obviously conflict with applicable policies in the Community Facilities Element of the General Plan. The fire station would be well-situated to respond to calls from areas with a high demand for emergency services, would be located along a major access route, and emergency response would not be impeded by topographical features.

Impact PS-2: The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project would not increase demand on SFFD services. (Less Than Significant)

The proposed projects would be developed in Battalion 3 – an area already served by the SFFD. Therefore, implementation of the projects would not result in new development that is inaccessible to the SFFD. However, the proposed projects would intensify land uses on their respective sites. The existing SFMOMA facility would increase by approximately 230,000 square feet. In addition, employment at the museum would increase from 383 full time equivalent employees (FTEs) to 470 FTEs (a net increase of 87 FTEs). Visitors to the museum would increase by 30 percent over the average visitorship between 2008 and 2010 (a net increase of 213,304 annual visitors).

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[8] *SFMOMA Expansion and Fire Station Relocation and Housing Project Transportation Impact Analysis*, LCW Consulting. July 2011. This document is available for review at the Planning Department in Case File No. 2009.0291E.

This increase in on-site employment and visitors would likely result in an incremental increase in demand for SFFD services, particularly EMS personnel in cases where site employees or visitors require emergency medical services. However, this increase in demand is not expected to be substantial due to the nature of site uses and the relatively modest increase in attendance (particularly when averaged out on a daily basis). The SFFD may need to deploy additional personnel to the site to respond to requests for emergency service; however, this additional deployment of staff would not constitute a significant environmental impact in regard to SFFD services because it would not in and of itself require the provision of new government facilities, the construction of which could cause significant environmental effects. Likewise, the expanded museum would be constructed in compliance with all modern Fire Code requirements and would not be expected to pose a significant risk of fire hazards.

Similar conclusions would be reached for the proposed development on the Fire Station Relocation and Housing Project site. This project would result in the development of a new fire station to replace the demolished Fire Station No. 1 and the construction of 13 new residential units. The new residential units, by nature of their relatively small number and location (immediately adjacent to the new fire station) would also not result in a significant increase in demand for SFFD services such that new fire-fighting facilities would be required, which would themselves result in significant environmental effects.[9]

<u>Impact PS-3</u>: The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project would result in substantial adverse physical impacts associated with the provision of a new governmental facility, the construction of which would cause adverse environmental effects. (Significant and Unavoidable)

The proposed projects would result in the construction of a new Fire Station No. 1 at 935 Folsom Street to replace the demolished fire station at 676 Howard Street. The new fire station would be constructed in order to maintain acceptable service ratios and response times for fire fighting and

[9] Personal communication with Thomas Doudiet, Assistant Deputy Chief, and Monica L. Fields, Deputy Chief of Administration, San Francisco Fire Department, November 18, 2010.

emergency services in the City. The demolition of the existing fire station and the construction of a new fire station would result in significant unavoidable environmental impacts to historic resources and air quality, which are discussed in more detail in Sections IV.C, Cultural Resources, and IV.F, Air Quality, of this EIR.

These significant effects are:

- Demolition of the existing building located at 935 Folsom Street, which is eligible for listing on the California Register of Historic Places (see Section IV.C, Cultural Resources, for additional detail).
- Exposure of sensitive receptors to substantial pollutant concentrations and the making of a considerable contribution to cumulatively significant levels of $PM_{2.5}$ and toxic air contaminants.

Cumulative Impacts. This section discusses the cumulative impacts to SFFD services that could result from the project in conjunction with past, present, and reasonably foreseeable future projects.

Impact PS-4: The proposed SFMOMA Expansion and Fire Station Relocation and Housing Project, combined with past, present, and reasonably foreseeable future projects, would not result in adverse physical impacts associated with the provision of, or need for, new or physically altered governmental facilities, the construction of which could cause significant environmental effects, in order to maintain acceptable service ratios, response times, or other performance objectives for SFFD services. (Less Than Significant)

Buildout of the proposed projects, and implementation of draft and adopted area plans, in conjunction with reasonably foreseeable projects, would increase overall demand for emergency services provided by the SFFD. Two major planning efforts in the vicinity of the project sites – the Transit Center District Plan and the East SoMa Area Plan – are expected to increase the local employee and residential population of the area, and would increase demand for emergency services.

The Transit Center District Plan would result in the future growth of high-density employment-generating uses in an area 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 East SoMa Area Plan (which covers the area generally bounded by Mission Street and Folsom Street on the north; The Embarcadero on the east; Townsend Street, Harrison Street, and Mission Creek Channel on the south; and Seventh Street and Fourth Street on the west) encourages new residential development in certain areas, and intensifies commercial and mixed uses along major transit corridors. Over time, residential development is forecast to intensify along Folsom Street, with over 5,000 new residents in the area, according to projections in the Eastern Neighborhoods Rezoning and Area Plans EIR. Other fire stations in the vicinity would also be anticipated to serve projected neighborhood growth, including Fire Station No. 3 (at 1067 Post Street, near Polk Street); Fire Station No. 8 (at 36 Bluxome Street, near Fourth Street), and Fire Station No. 35 (at Pier 22, along The Embarcadero). The new fire station planned for the Mission Bay South Redevelopment Area (near the site of former Fire Station No. 30) could also lend support to emergency responses in the area.

As discussed under Impact PS-1, the relocated Fire Station No. 1 would be well-positioned to serve new growth associated with buildout of the Transit Center District Plan and the East SoMa Area Plan, due to the proximity of the new fire station to major north/south and east/west arterials, away from the often-congested neighborhood near Third and Howard Streets. In addition, the fire station would result in improved response times to areas in the vicinity of Sixth and Market Streets, on the periphery of Fire Station No. 1's primary response area, where data indicate a high demand for service.

In addition, the increase in demand associated with buildout of the Transit Center District Plan and East SoMa Area Plan would be reduced due to the construction of new buildings in compliance with the most current San Francisco Fire Code regulations. Incorporation of current Fire Code regulations substantially reduces fire risks compared to older buildings. Although the proposed SFMOMA Expansion and Fire Station Relocation and Housing projects, in conjunction with reasonably foreseeable cumulative projects, may increase demand for SFFD services, that increase in demand in and of itself would not result in a significant environmental effect because the demand would be moderate due to the implementation of current building standards for fire protection and would not require the construction of new fire fighting facilities.

As discussed in Section IV.D, Transportation and Circulation, the proposed relocation of Fire Station No. 1, in conjunction with cumulative traffic volumes and anticipated changes to the roadway network, would not compromise SFFD's ability to respond to emergencies. MTA is currently studying the conversion of Folsom Street to a two-way street for its entire length. If Folsom Street is converted to two-way operations and a center median is installed, a median break would be required adjacent to 935 Folsom Street so that emergency vehicles could travel eastbound or westbound on Folsom Street. However, a two-way Folsom Street would not be expected to adversely affect operations at Fire Station No. 1. The "KEEP CLEAR" and "FIRE HOUSE" markings that would be painted on Folsom Street along the street segment adjacent to the proposed fire station would allow for unimpeded emergency vehicle egress and ingress. Similarly, the traffic signal preemption system that would link Fire Station No. 1 to the nearby intersections of Fifth/Folsom Streets and Sixth/Folsom Streets would enhance the ability of Fire Station No. 1 to respond effectively to emergency calls by reducing the time emergency vehicles are stopped at traffic lights at those intersections. Please refer to Section IV.D, Transportation and Circulation, for additional detail.

OTHER CEQA CONSIDERATIONS

This chapter discusses the following topics in relation to the proposed projects: growth inducement; significant environmental effects that cannot be avoided if the proposed projects are implemented; significant irreversible environmental changes that would result if the proposed projects are implemented; and areas of controversy and issues to be resolved.

GROWTH INDUCEMENT

A project is considered growth-inducing if it would directly or indirectly foster substantial economic or population growth, or the construction of substantial amounts of additional housing. Examples of projects likely to result in significant adverse growth inducement include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions in areas that are sparsely developed or undeveloped.

As discussed in the Population and Housing Section of the Initial Study, pages 61 through 67, the proposed projects would result in limited indirect and direct population growth. The SFMOMA Expansion would result in an approximately 23 percent increase in Full Time Equivalent (FTE) employees, from 383 FTE employees to a total of 470 FTE employees. This job growth could indirectly result in population growth in and around San Francisco, if new employees do not currently reside in San Francisco and decide to move to the area. Based on a nexus study prepared for the Jobs-Housing Linkage Program (Planning Code Sections 313 et seq.), the SFMOMA Expansion would create demand for about 33 new dwelling units in San Francisco, assuming that all SFMOMA employees would be new to San Francisco (it is likely that some workers would relocate from other jobs in San Francisco).

The Fire Station Relocation and Housing Project would directly contribute to growth through the development of up to 13 housing units at 935 Folsom Street. Using an average household occupancy rate of 1.7 to 1.8 for Census Tract 178 (in which the Fire Station Relocation and Housing Project site is located) the estimated population of the proposed housing project would be about 22 to 23 new residents. Employment associated with the relocated Fire Station No. 1 is expected to be similar to that of the existing fire station. Therefore, relocation of Fire Station No. 1 would not generate substantial indirect population growth through employment.

Although the proposed SFMOMA Expansion would indirectly contribute to population growth through employment growth at SFMOMA, and the Fire Station Relocation and Housing Project would result in direct population growth through the development of new housing on the site, this growth would be limited and would not be expected to spur additional growth in surrounding areas. The projects would be located in neighborhoods that, due in part to the planning initiatives of the Transit Center District Plan and recently-adopted East SoMa Area Plan, are expected to grow in coming years. In addition, the projects would be well-served by urban infrastructure, including the cultural, transit, and open space amenities of the SoMa neighborhood and downtown San Francisco. Therefore, the neighborhoods surrounding the project site are better equipped to accommodate growth than outlying parts of the Bay Area, where such services are more dispersed. Therefore, growth associated with the project would be neither substantial nor adverse.

SIGNIFICANT EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

In accordance with Section 21067 of CEQA and Sections 15040, 15081, and 15082 of the *CEQA Guidelines*, potential impacts of the proposed projects that would not be eliminated or reduced to a less-than-significant level are limited to effects on cultural resources and air quality. These effects are summarized in the following bullet points:

- Demolition of the existing building located at 935 Folsom Street, which is considered a historic resource based on its association with redevelopment of the South of Market neighborhood following the 1906 earthquake and fire, and for its representation of industrial architecture designed by Meyer and Johnson, a San Francisco firm.

- Exposure of sensitive receptors to substantial pollutant concentrations and a considerable contribution to cumulatively significant levels of $PM_{2.5}$ and toxic air contaminants.

SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES THAT WOULD RESULT IF THE PROPOSED PROJECT IS IMPLEMENTED

In accordance with Sections 15126.2(c) and 15127 of the *CEQA Guidelines*, an EIR for a project that involves adoption of a plan or policy, or an ordinance such as would be required for rezoning of the project sites, must identify any significant irreversible environmental changes that could result from implementation of the proposed project. Such significant irreversible environmental changes may include current or future uses of non-renewable resources, secondary or growth-inducing impacts that commit future uses of non-renewable resources, and secondary or growth-inducing impacts that commit future generations to similar uses. According to the *CEQA Guidelines*, irretrievable commitments of resources should be evaluated to assure that such current consumption is justified. In general, such irreversible commitments include the uses of resources such as energy and materials used to construct a proposed project, as well as the energy and natural resources (including water) that would be required to sustain a project and its inhabitants or occupants over the usable life of the project.

Construction and operation of the proposed projects would increase the use of electricity, natural gas, and possibly other forms of energy, in addition to water. However, due to City requirements and the inclusion into the building code of energy- and water-conserving features, the new buildings would likely be more energy- and water-efficient than existing buildings that would be demolished on the two sites. The SFMOMA Expansion and Housing Project would be subject to the San Francisco Green Building Ordinance. In addition, the Fire Station Relocation, under the Municipal Green Building Ordinance, would be required to achieve Leadership in Energy and Environmental Design (LEED) Silver certification from the U.S. Green Building Council or equivalent.

The projects would contribute to employment and population growth in San Francisco, and such growth would increase demand for energy and water. However, the projects are located near downtown San Francisco, which functions as an employment and transit node. Therefore, transportation-related energy demand associated with the projects would likely be reduced on a per capita basis, compared to development in outlying areas. In addition, neither project would include large expanses of turf or other features that would result in a wasteful use of water. Thus, on a regional scale, the proposed projects would not result in substantial adverse direct or secondary commitments to the use of non-renewable resources. The intensification of development in and around downtown San Francisco represents a way to accommodate regional growth with minimal additional use of non-renewable resources.

The proposed projects would result in land use changes on the project sites. On the SFMOMA Expansion site, a fire station and former office building would be demolished and replaced with museum and support uses. On the Fire Station Relocation and Housing Project site, a building formerly used as a commercial laundry and for garment manufacturing would be demolished and replaced with a new fire station and a multi-family residential project. The proposed replacement uses on the sites would be consistent with land use changes anticipated for the surrounding neighborhoods as part of the Downtown Plan, East SoMa Area Plan, and other City plans, and would contribute to the long-term viability of the SoMa neighborhood as a mixed-use district. Therefore, the proposed projects would not commit future generations to adverse changes in land use.

AREAS OF KNOWN CONTROVERSY AND ISSUES TO BE RESOLVED

On October 27, 2010, the Planning Department issued a Notice of Preparation (NOP) of an EIR. Individuals, groups, and agencies that received these notices included owners of properties within 300 feet of the project site, tenants of properties adjacent to the project site, and other potentially interested parties, including regional and State agencies. On the basis of public comments on the NOP, potential areas of controversy for the proposed projects (and places in the Initial Study or EIR where these issues are addressed) include: detail of proposed project plans (Chapter II, Project Description, of the EIR); construction-period impacts related to aesthetics, transportation, noise, and air quality (Sections IV.B, Aesthetics; IV.D, Transportation and Circulation; IV.E, Noise; and IV.F, Air Quality, of the EIR and pages 80 to 97 of the Initial Study); impacts to wind and shadow patterns (Section IV.H, Wind and Shadow, of the EIR and pages 100 to 104 of the Initial Study); emission of greenhouse gases (Section IV.G, Greenhouse Gas Emissions, of the EIR); demolition of historically-significant structures (Section IV.C, Cultural Resources, of the EIR); effects on visual character and scenic vistas (Section IV.B, Aesthetics, of the EIR and pages 53 to 60 of the Initial Study); ability of proposed number of residential units to be accommodated on the Fire Station Relocation and Housing Project site (Chapter II, Project Description, of the EIR); incorporation of art into the projects (Chapter II, Project Description, and Chapter VI, Other CEQA Considerations, of the EIR); operation-period impacts related to traffic, noise, and air quality (Sections IV.D, Transportation and Circulation; IV.E, Noise; and IV.F, Air Quality, of the EIR and pages 80 to 97 of the Initial Study); and sirens and horns associated with emergency vehicle traffic (Sections IV.D, Transportation and Circulation, and IV.E, Noise, of the EIR). All controversial environmental issues have been resolved in the EIR.

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ALTERNATIVES

The *CEQA Guidelines* require the analysis of a reasonable range of alternatives to the proposed projects or to the location of the proposed projects, which would feasibly attain most of the basic objectives of the proposed projects and avoid or substantially lessen any of the significant effects of the proposed projects (*CEQA Guidelines* Section 15126.6). The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit informed public participation and an informed and reasoned choice by the decision-making body (*CEQA Guidelines* Section 15126.6(f)).

CEQA generally defines "feasible" to mean an alternative that is capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, technological, and legal factors. The following factors may also be taken into consideration when assessing the feasibility of alternatives: site suitability; economic viability; availability of infrastructure; General Plan consistency; other plans or regulatory limitations; jurisdictional boundaries; and the ability of the proponent to attain site control (*CEQA Guidelines* Section 15126.6(f)(1)).

CEQA also requires that a No Project Alternative be evaluated (*CEQA Guidelines* Section 15126.6(e)); the analysis of the No Project Alternative is based on the assumption that the projects would not be approved. In addition, an environmentally superior alternative must be identified among the alternatives considered. The environmentally superior alternative is generally defined as the alternative that would result in the least adverse environmental impacts to the project sites and affected environment. If the No Project Alternative is found to be the environmentally superior alternative, the EIR must identify an environmentally superior alternative among the other alternatives.

CEQA Guidelines Section15126.6(c) also requires an EIR to identify and briefly discuss any alternatives that were considered by the Lead Agency but were rejected as infeasible during the scoping process. In identifying alternatives, primary consideration was given to alternatives that would reduce significant impacts while still meeting most of the basic project objectives. Those alternatives that would have impacts identical to or more severe than the proposed projects, or that would not meet most of the project objectives, were rejected from further consideration.

This chapter identifies alternatives to the proposed projects and discusses environmental impacts associated with each alternative. Alternatives were selected that would reduce identified impacts of the proposed projects. The proposed projects would result in significant unavoidable impacts related to demolition of the structure located at 935 Folsom Street, which is considered a historic resource for purposes of environmental review, and the emission of pollutants during construction of the Fire Station Relocation and Housing Project. No other significant unavoidable impacts were identified in the analyses in Chapter IV.

This chapter compares four identified alternatives, as summarized below:

SFMOMA EXPANSION AND FIRE STATION RELOCATION AND HOUSING PROJECT SITES

- The **No Project Alternative**, under which the project sites would not be redeveloped in the short-term, and would remain generally in their existing condition.

SFMOMA Expansion Site

- The **Preservation Alternative**, under which the building located at 676 Howard Street would remain intact and Fire Station No. 1 would remain in operation. Under this alternative, the SFMOMA Howard Street addition would occupy only the footprint of 670 Howard Street. This alternative would be coupled with preservation of the existing building located at 935 Folsom Street (i.e., the No Project Alternative would be implemented only on the Fire Station Relocation and Housing Project site).
- The **Partial Fire Station Demolition Alternative**, under which the façade of the building located at 676 Howard Street would be preserved. The museum addition on this parcel would be set back approximately 50 feet from the edge of Howard Street to preserve the massing of the Howard

Street frontage of the building. Fire Station No. 1 would be relocated to 935 Folsom Street under this alternative.

Fire Station Relocation and Housing Project Site

- The **Adaptive Reuse Alternative**, under which the existing building at 935 Folsom Street would be adaptively reused as Fire Station No. 1. Three new vehicle bay doors would be cut into the Folsom Street façade and other openings along Falmouth Street or Shipley Street would need to be created. A seismic retrofit of the building would be required to meet essential facilities standards. No housing would be constructed on the site as part of this alternative.

A. NO PROJECT ALTERNATIVE (SFMOMA EXPANSION AND FIRE STATION RELOCATION AND HOUSING PROJECT SITES)

Description

Under the No Project Alternative, the SFMOMA Expansion and the Fire Station Relocation and Housing sites would not be redeveloped with new museum, fire station, and housing uses, and would generally remain in their existing condition. The exiting SFMOMA, located at 151 Third Street, would continue to function as a museum, and internal building space could be reconfigured to allow for an evolving series of exhibits. However, the museum would not be expanded on the site to accommodate the museum's growing permanent collection and special exhibitions. In addition, the Doris and Donald Fisher collection would not be able to be exhibited on a permanent basis at SFMOMA. Off-site administrative and support space for the museum (currently located at 667 Mission Street and Fort Mason) would not be relocated to the SFMOMA Expansion site. The 4-story building located at 670 Howard Street, currently owned by an SFMOMA affiliate, would continue to be used for museum support activities.

In the short-term, Fire Station No. 1 would continue to operate at 676 Howard Street. However, the existing structure is seismically unsound and sustained damage when, in 1997, a large concrete wall segment being lifted by a crane during construction of the W Hotel fell through the roof of the building. The Department of Public Works estimates that bringing the station to modern seismic standards for an essential facility would cost approximately $9.5 million. Therefore, under the No Project Alternative, the SFFD may explore the options of retrofitting the existing building. For the purposes of environmental review in this EIR, the fire station use would continue at the 676 Howard Street site under the No Project Alternative into the foreseeable future.

Under the No Project Alternative, the commercial/industrial building located at 935 Folsom Street would also remain in its existing condition. Because the building is in poor shape due to deferred maintenance, its potential for reuse in the near-term is limited. Therefore, this alternative assumes that the building would remain vacant, and that additional deterioration of the structure could potentially occur.

Objectives

The No Project Alternative would realize none of the project objectives, including those applicable to both the SFMOMA Expansion and the Fire Station Relocation and Housing Project. In particular, the alternative would not allow for the development of an additional 116,250 square feet of gallery space contiguous to the existing museum, or the consolidation of the museum's administrative and support functions. Although SFMOMA would continue to operate on the site, the No Project Alternative would preclude a major expansion of the facility and substantial growth in modern art gallery space near downtown San Francisco. The alternative would not allow the museum to accept the Doris and Donald Fisher Collection, and if portions of the collection were to be exhibited, display options would be substantially restricted because no new gallery space would be developed.

The No Project Alternative, by retaining the 676 Street Howard Street site for Fire Station No. 1, would not realize the project objective relating to the replacement of the existing fire station with a station that is seismically sound and that includes features allowing for effective operation as an essential facility. Although existing Fire Station No. 1 is located on an east-west thoroughfare between Mission and Harrison Streets, responses are hindered by the vehicle and pedestrian congestion that often occurs around the Third and Howard Streets area. Therefore, the No Project Alternative would not allow Fire Station No. 1 to access the eastern South of Market, Tenderloin, and Downtown neighborhoods as effectively as a new station located at 935 Folsom Street. In addition, no housing would be developed on the 935 Folsom Street site as part of the alternative.

Impacts

The No Project Alternative would avoid the significant impacts related to demolition of the building at 935 Folsom Street and the emission of pollutants during construction at 935 Folsom Street that would result from the Fire Station Relocation and Housing Project.

Land Use. The land use type and pattern on the sites would not change as part of the No Project Alternative. The SFMOMA Expansion site would continue to be occupied by museum and fire station uses, and the Fire Station Relocation and Housing Project site would continue to be occupied by a vacant commercial/industrial structure. No changes in land use controls, including zoning districts, would be required as part of the alternative. Like the proposed projects, the No Project Alternative would not divide an established community or conflict with plans, policies, or regulations adopted for environmental protection. Similarly, the land use character of the sites is assumed to remain unchanged in the near-term under the alternative. Therefore, the alternative, similar to the proposed projects, would not make a considerable contribution to cumulative changes in land use associated with the buildout of area plans and other development in the vicinity of the sites.

Aesthetics. The No Project Alternative would result in the continuation of existing aesthetic conditions on the two sites. SFMOMA would not undergo a physical expansion and the three additional buildings on the sites would not substantially change in appearance (although ongoing structural maintenance activities may occur). Therefore, the alternative would not affect scenic vistas, scenic resources, or the overall visual character of the area. The alternative would also not introduce new lighting or new glare-generating features to the area. In addition, the alternative would not make a considerable contribution to cumulative changes to aesthetics, including impacts associated with the intensification of the urban fabric and changes to the City skyline associated with buildout of the Transit Center District Plan and other area plans.

Cultural Resources. The No Project Alternative would avoid the significant unavoidable effect of the project on historic architectural resources. Specifically, the alternative would avoid the demolition of the structure located at 935 Folsom Street, which is considered a resource by nature of its eligibility for listing on the California Register. The No Project Alternative would avoid the SFMOMA Expansion's less-than-significant impacts related to the demolition of the 670 and 676 Howard Street buildings, because they would remain intact. Because no ground disturbance would be required as part of the alternative, the No Project Alternative would not have the potential to adversely affect archaeological resources, and no mitigation for the protection and evaluation of such resources would be required.

Transportation and Circulation. Similar to the proposed projects, the No Project Alternative would result in no significant transportation and circulation-related impacts. Unlike the proposed projects, bike, pedestrian, and vehicular circulation conditions would remain generally the same, and no less-than-significant increase in museum-related trips would occur (although such trips would likely continue to fluctuate over time with the introduction of new exhibits to the museum). On-site parking on the SFMOMA site would remain under this alternative. None of the transportation-related improvement measures identified for the proposed projects would be implemented under this alternative. The alternative would not contribute to less-than-considerable cumulative area-wide growth in vehicle and transit trips.

Noise. The No Project Alternative would avoid demolition and construction activities on the sites. Therefore, the site vicinities would not experience temporary increases in ambient noise levels. In addition, ambient noise levels would remain similar to existing conditions under the No Project Alternative. No changes in emergency vehicle-related noise patterns would occur because Fire Station No. 1 would remain in its existing location (and routes to high demand areas would remain unchanged). As residential uses would not be developed at 935 Folsom Street, added insulation for a residential building would not be required. The alternative would not contribute to less-than-considerable cumulative long-term increases in ambient noise levels.

Air Quality. Because no demolition or construction activities would occur as part of the No Project Alternative, the alternative would avoid the need for mitigation of potentially hazardous building materials and other pollutants, and would avoid significant and unavoidable exposure of sensitive receptors to air pollutants associated with construction at the Fire Station Relocation and Housing Project site. Because the alternative would not increase vehicle trips compared to existing conditions, it would not contribute to increased cumulative regional levels of pollutants, although such pollutants would be less than significant under the proposed projects. However, the existing museum and fire station at 151 Third Street and 676 Howard Street would continue to generate regional pollutants at less-than-significant levels through their continued operation.

Greenhouse Gas Emissions. The No Project Alternative would avoid the emissions of greenhouse gases that would occur during the demolition/construction phase of the proposed projects. However, the museum and fire station would continue to contribute to cumulative levels of greenhouse gas emissions. It should be noted that the buildings proposed as part of the projects would be designed to comply with the San Francisco Greenhouse Gas Reduction Strategy and would be expected to use less energy (and generate fewer greenhouse gas emissions) on a per capita basis than the existing buildings on the sites.

Wind and Shadow. Under the No Project Alternative, wind and shadow conditions around the sites would remain unchanged. The No Project Alternative, similar to the proposed projects, would not substantially or adversely affect wind and shadow patterns (including patterns associated with cumulative development) around the sites because the height, configuration, and massing of the existing buildings would not be altered.

Public Services. Fire Station No. 1 would remain at its existing location under the No Project Alternative and would therefore remain subject to the existing conditions associated with its location and design. Operations would continue to be complicated by vehicle and pedestrian congestion that occurs around the existing station, by the existence of only two vehicle bays in the fire station (requiring one of the station's three fire trucks to be "parked in" or parked on Howard Street), and the lack of modern design features. Such features, in accordance with current seismic standards for an essential facility, include: a dedicated communications room, a design that is accessible to the disabled, enhanced locker and shower facilities for both male and female firefighters, and on-site parking. In addition, as discussed in Section IV.D, Transportation and Circulation, travel distances and travel times from a new fire station located at 935 Folsom Street would be shorter for responses along Fifth, Street, and Folsom Streets compared to existing conditions (and comparable for other locations). Therefore, under the No Project Alternative, Fire Station No. 1 would continue to be subject to the constraints associated with the existing facility, including local congestion and a shortage of vehicle bays, and would not as effectively be able to respond to increased demand for emergency services associated with cumulative development in the area as the proposed project. Because no new development (and associated employment and population increases) would occur on the two sites, the No Project Alternative would not generate an incremental increase in demand for public services, including schools, police, and fire/emergency services.

Other Topics. The No Project Alternative would avoid the increase in employment and residential population that would occur as part of the proposed projects because SFMOMA would not increase its employment by 87 full time equivalent (FTE) employees and a new multi-family residential structure containing 13 units would not be developed at 935 Folsom Street. Similarly, the No Project Alternative would not generate an increase in demand for recreation facilities, or utilities. Existing buildings on the sites that would be demolished as part of the proposed projects would remain under the alternative and would continue to be subject to possible seismic hazards, assuming no future upgrades. The 676 Howard Street and 935 Folsom Street structures have structural problems that could make them vulnerable to earthquakes. Drainage and water quality conditions would remain unchanged under the No Project Alternative, and design measures currently required to improve water quality would neither be required nor implemented on the sites. In addition, the alternative would not result in any potentially significant but mitigable impacts associated with hazardous building materials. Similar to the proposed projects, the No Project Alternative would not result in impacts to biological resources, mineral/energy resources, and agriculture and forestry resources.

B. PRESERVATION ALTERNATIVE (SFMOMA EXPANSION SITE)

Description

The primary objective of the Preservation Alternative, included herein for informational purposes, is to retain the building located at 676 Howard Street (currently occupied by Fire Station No. 1) in order to reduce less-than-significant project effects that would result from the demolition of that structure, while allowing SFMOMA to expand – and in doing so retain the building located at 935 Folsom Street in order to avoid significant unavoidable impacts to historic resources associated with demolition of that building. The Preservation Alternative would thus remove 676 Howard Street from the SFMOMA Expansion site and retain Fire Station No. 1 in its existing location and configuration. Fire Station No. 1 would continue to have vehicle access via Howard and Hunt Streets. Under the alternative, 676 Howard Street would remain operational as Fire Station No. 1 and would function independently of SFMOMA operations (thus avoiding construction of a new fire station at 935 Folsom Street). However, as discussed under "No Project Alternative," above, the existing fire station is seismically unsound and the Department of Public Works estimates that bringing the building to modern seismic standards for an essential facility would cost approximately $9.5 million. Therefore, under the Preservation Alternative (similar to the No Project Alternative), the SFFD may explore the options of retrofitting the existing building.

As with the proposed projects, the building located at 670 Howard Street (the Heald Building, which is not considered a historic resource under CEQA) would be demolished, and the museum addition would partially extend over Hunt Street to connect the 151 Third Street structure to the new narrower (than proposed as part of the project) wing fronting onto Howard Street.

Under the Preservation Alternative, the width of the museum's frontage on Howard Street would be reduced from 97 feet to 57 feet, and the height of the Howard Street frontage would increase from approximately 200 feet (10 stories) to approximately 218 feet (11 stories). The museum would expand to the same degree as the proposed project, with up to approximately 230,000 square feet of additional gallery and support space. Off-site administrative and support space for the museum (currently located at 667 Mission Street and Fort Mason) would be relocated to the expanded museum. No promenade would be developed that would connect Natoma and Howard Streets, as under the proposed project.

Figure VI-1 shows the conceptual Howard Street elevation of the Preservation Alternative. Figure VI-2 shows the conceptual first floor plan for the alternative.

The Fire Station Relocation and Housing Project, proposed for 935 Folsom Street, would not be implemented under the Preservation Alternative because there would no need to relocate Fire Station No. 1.

Objectives

While the Preservation Alternative could meet most of the project sponsor's objectives with regard to the SFMOMA Expansion, a few key objectives would not be met, or would not be achieved to the extent of the proposed SFMOMA Expansion. As described in the following bullet points, galleries in the Howard Street wing of the building would not meet the space requirements needed to fully accommodate the larger sculptures and paintings in the SFMOMA permanent collection and the Fisher Collection. In addition, SFMOMA would not be able to proceed with the alternative while meeting established time and budget constraints due to the complexity of engineering and constructing the alternative. The project sponsor has determined that the Preservation Alternative would not feasibly meet key objectives of the SFMOMA Expansion for several reasons:

- The width of the museum's Howard Street frontage would be reduced from 97 feet to 57 feet. Structural elements would further reduce the street entry to approximately 45 feet at the ground level, eliminating the museum's proposed entrance along the promenade connecting Natoma and Howard Streets, and the lobby. The public exhibition of "Sequence," by Richard Serra (one of the major works from the Fisher Collection) in a ground floor publicly-accessible gallery space would not be possible under this alternative because the width of the lobby gallery would be too small. (Sequence is a 13-foot-tall steel plate sculpture with horizontal dimensions of 65 feet by 41 feet that must be located at the ground level both for structural and seismic safety reasons.) Therefore, under the Preservation Alternative, Sequence could not be exhibited in the museum.

- The promenade connecting Natoma and Howard Streets, associated open space, and museum access point would not be developed because insufficient space would be available for such a feature.
- Above the ground floor, the bay widths of the galleries fronting Howard Street would be reduced to approximately 45 feet wide, 20 feet narrower than the museum's preference for new galleries. The smaller floor plates, combined with the undesirability of placing galleries any higher than the seventh floor, would require eliminating nearly all support space from the lower seven floors of the expansion, such that those galleries would be without nearby back-of-house support space, compromising their utility.

The Preservation Alternative would also not meet most of the San Francisco Fire Department's criteria for a new Fire Station No. 1. If the existing Fire Station No. 1 were to be retained, the San Francisco Fire Department (SFFD) would not receive a new fire station meeting essential facility seismic standards, at no cost to the SFFD. Fire Station No. 1 would not be enlarged from two vehicle bays to three vehicle bays, improved living quarters to house both male and female firefighters would not be provided and essential firefighting and emergency services equipment would not be located as efficiently as possible adjacent to the vehicle bays. Fire Department capacity would not be increased to cover the lost services of the 416 Jessie Street Station, which closed in 1995.

Impacts

The Preservation Alternative would avoid the significant unavoidable impact to historic resources associated with demolition of the building located at 935 Folsom Street and reduce identified less-than-significant effects associated with demolition of the building located at 676 Howard Street which would occur as a result of the proposed projects.

Land Use. On the SFMOMA Expansion site, the Preservation Alternative would result in land use impacts that are similar to those that would result from the project, although the land use of the property located at 676 Howard Street (Fire Station No. 1) would not change, and that property would not be rezoned to the C-3-S Zoning District. Similar to the proposed SFMOMA Expansion,

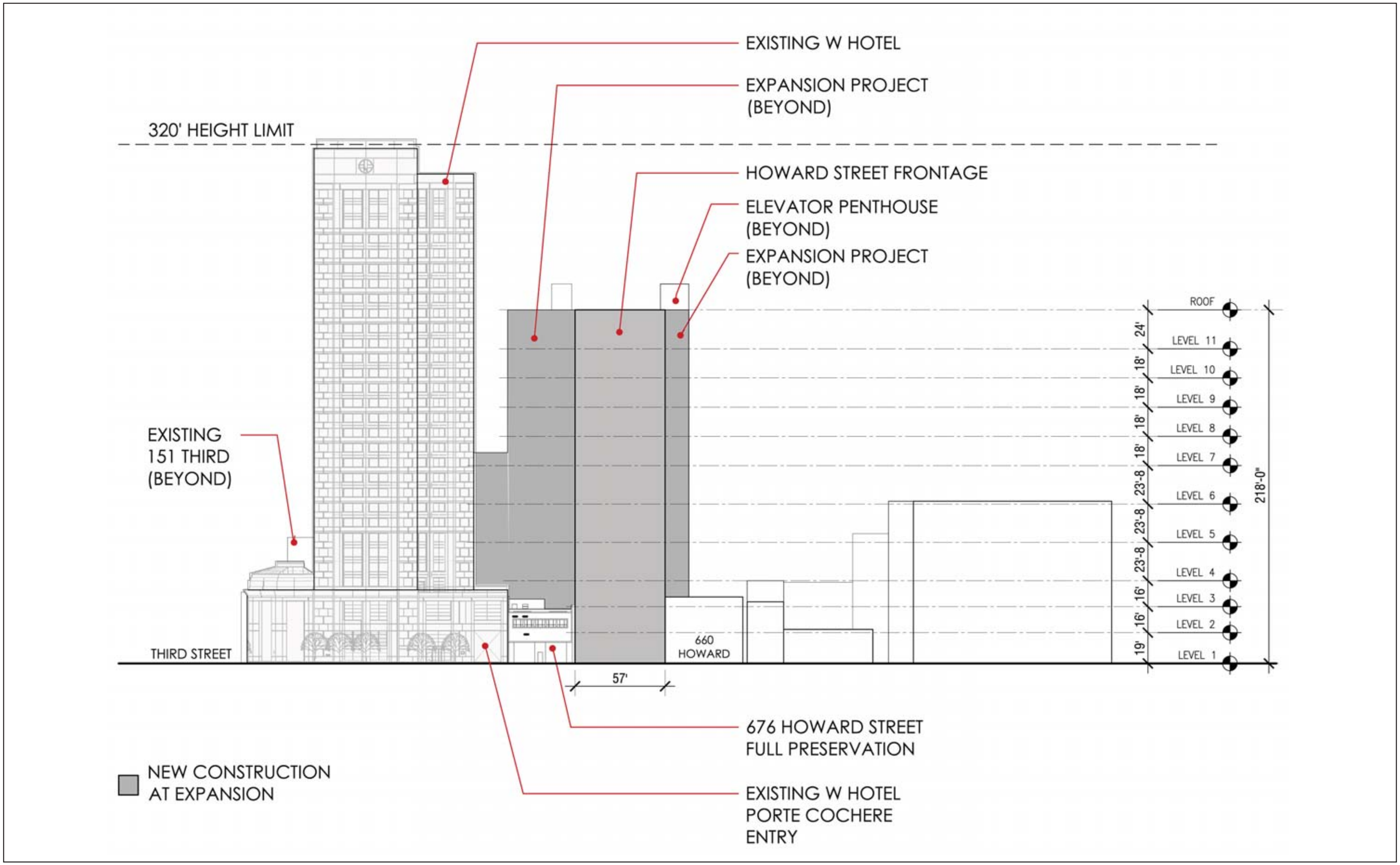

FIGURE VI-1

NOT TO SCALE

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Preservation Alternative - Conceptual Howard Street Elevation

SOURCE: SNØHETTA, 2011.

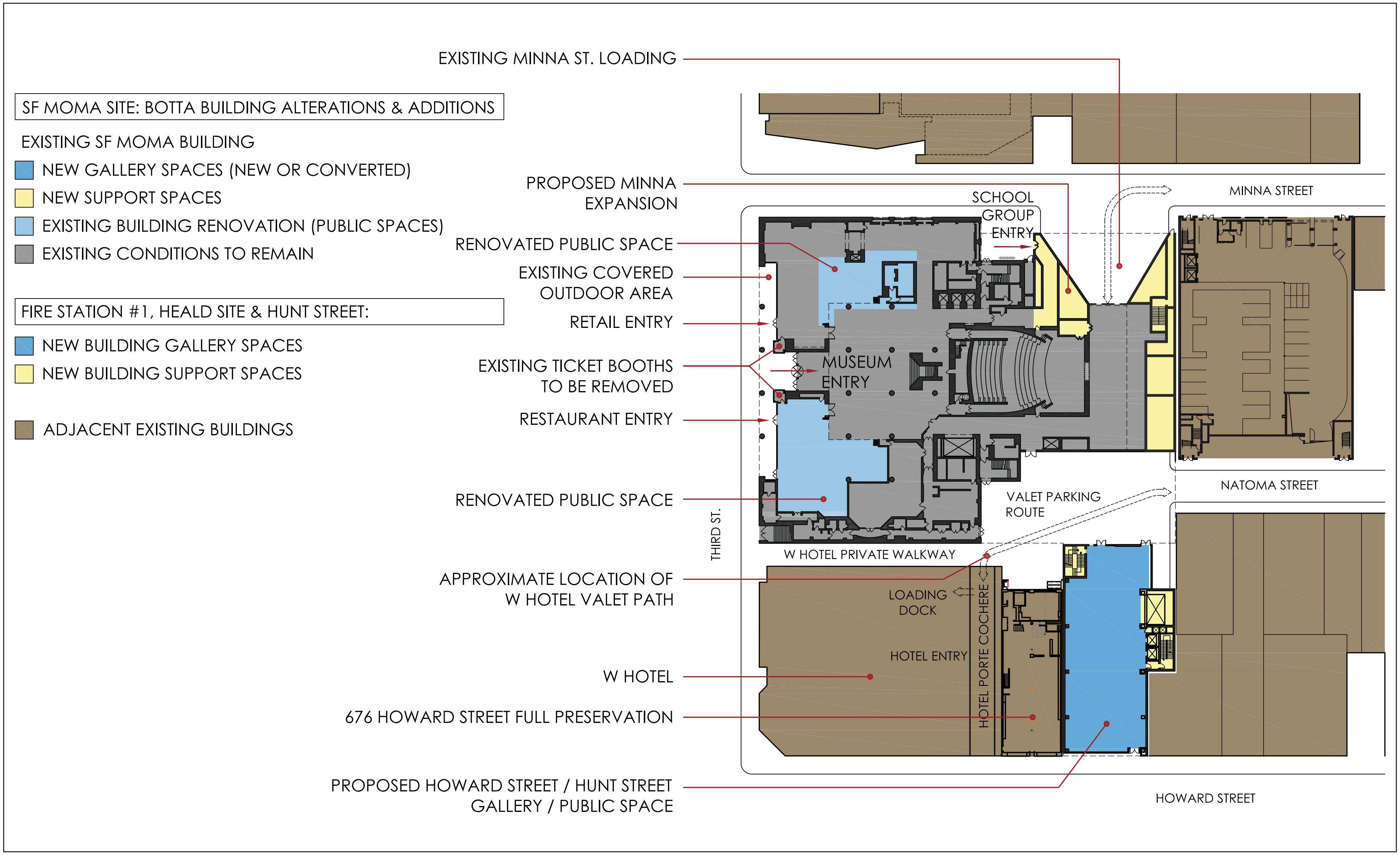

FIGURE VI-2

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Preservation Alternative - Typical Conceptual Ground Floor Plan

NOT TO SCALE

SOURCE: SFMOMA, 2011.

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vacation of Hunt Street would be required as part of the alternative, and the resultant land use impacts would be less-than-significant. Like the proposed projects, expansion of the museum under the Preservation Alternative would not divide an established community or conflict with plans, policies, or regulations adopted for environmental protection. Under the alternative, land uses would not change at 935 Folsom Street, and no change in land use controls at the site (i.e., rezoning from MUR to P) would occur. The alternative would not contribute to a considerable loss of PDR space in the City associated with cumulative development. However, the alternative would also not develop housing on the southern portion of the site, and would not promote the policy objectives of plans like the East SoMa Area Plan, or other policy documents, to the extent of the proposed Fire Station Relocation and Housing Project. The alternative, which would extend up to 218 feet in height, would meet all height requirements, but would require an exception to bulk requirements, similar to the proposed SFMOMA Expansion.

Aesthetics. The Preservation Alternative, like the SFMOMA Expansion, would change the aesthetics of the SFMOMA Expansion site. A key difference in aesthetics effects between the proposed SFMOMA Expansion and the alternative would be the retention of Fire Station No. 1 and the replacement of the Heald Building (670 Howard Street) with a structure 1 story taller than proposed as part of the SFMOMA Expansion, extending to a height of 218 feet (approximately 18 feet taller than the maximum height of the SFMOMA Expansion). However, this additional height would not violate the height limitations for SFMOMA specified in the DDA, which only apply to the area "between the southerly line of Minna Street and the northerly line of Natoma Street." In addition, because the heightened expansion would be located to the east of the 29-story W Hotel, views from the west of the site would not be substantially altered compared to the proposed project. From Viewpoint 1 (Mission and Third Streets) and Viewpoint 2 (Yerba Buena Gardens), the alternative would appear taller than the proposed project, as the height of the alternative would be approximately 18 feet taller than the proposed project, and would obscure more of the upper floors of the Pacific Telephone Building (134-140 New Montgomery Street). The taller alternative would be visible from Viewpoint 3 (Howard Street overpass), Viewpoint 4 (Howard and Third Streets), and Viewpoint 7 (Jessie Square), but the taller building would not block views of notable structures or other elements of a scenic view. From the east of the site (Viewpoints 5 and 6), the taller alternative would be visible, but would be lower in height than the 320-foot W Hotel. Because the W Hotel would be taller than the alternative, the alternative would not appear out-of-place in this location and would not compromise longer-range views or substantially change the appearance of the City skyline. Likewise, the addition would not substantially adversely change the visual character of the area (which is currently defined by the juxtaposition of generally newer taller buildings and older, lower-rise structures). The alternative would similarly not make a considerable contribution to cumulative changes to views and visual character in the area associated with the buildout of area plans (including the development of several towers as part of the Transit Center District Plan and other area plans). Under the alternative, visual conditions at the Fire Station Relocation and Housing site would remain unchanged.

Cultural Resources. Similar to the No Project Alternative, the Preservation Alternative would avoid the effects of the projects on historic built resources. Specifically, the alternative would avoid the demolition of the structure located at 676 Howard Street, which is a contributor to a larger potential thematic historic district, and the structure located at 935 Folsom Street, which is independently considered a resource because it is eligible for listing on the California Register. Less-than-significant effects to the potential 1952 Firehouse Bond Act Thematic Historic District would be reduced because the 676 Folsom Street structure would remain. The setting of the 676 Howard Street structure would change under the alternative, but this change in setting would not be sufficient to compromise the building's contribution to the potential 1952 Firehouse Bond Act Thematic Historic District (because the surrounding neighborhood is characterized by changes in building form over time). Because no ground disturbance would occur on the 676 Howard and 935 Folsom Street sites, the Preservation Alternative would avoid potentially significant, though mitigable, impacts to archaeological resources on those sites.

Transportation and Circulation. Similar to the proposed projects, this alternative would result in no significant transportation and circulation-related impacts, including in the cumulative condition. Because SFMOMA would expand to the same extent as the proposed project, the alternative would increase trips on local and regional roadways, although these additional trips would not result in significant impacts to roadway operations. While the number of SFFD-related trips is not anticipated to increase under the project, trip patterns were projected to change due to the relocation of Fire

Station No. 1. Under this alternative, emergency vehicle routes would not change, and emergency responses from Fire Station No. 1 would continue to be affected by certain existing conditions, such as pedestrian traffic and hotel-related vehicle traffic that sometimes conflicts with fire truck movements. The alternative would not result in new trips generated by the housing project proposed as part of the Fire Station Relocation and Housing Project because no housing would be built at 935 Folsom Street. No connecting promenade between Natoma and Howard Streets would be developed as part of the alternative.

Noise. Under this alternative, construction-related increases in ambient noise levels would be approximately the same at the 151 Third Street and 670 Howard Street sites and avoided at the 935 Folsom Street site (because demolition and construction activities on that site would not occur), compared to the proposed projects. Long-term operational ambient noise levels on the 151 Third Street and 670 Howard Street sites would remain similar to the proposed SFMOMA Expansion, although museum employees and visitors would be exposed to noise generated by SFFD operations at 676 Howard Street. However, because museum employees and visitors are not considered sensitive receptors, exposure to noise generated by SFFD operations would not be considered significant. Noise conditions at 935 Folsom Street would remain similar to existing conditions and roadway noise patterns associated with SFFD operations would remain approximately the same as under existing conditions. Because no residential uses would be developed on the 935 Folsom Street site, no new residents would be exposed to new noise-generating uses at this site. Similar to the project, the alternative would not make a considerable contribution to traffic-related noise levels.

Air Quality. Construction-period and operational-period air pollutant emissions would remain approximately the same at the 151 Third Street and 670 Howard Street sites under the Preservation Alternative, compared to the proposed SFMOMA Expansion. In addition, because Fire Station No. 1 would remain at its existing location, patterns of emergency vehicle-related emissions would be unchanged under the alternative, compared to existing conditions. Because no new housing would be constructed under the alternative, no emissions associated with residential automobile trips would occur. In addition, the alternative would avoid significant and unavoidable exposure of sensitive receptors to air pollutants associated with construction at the Fire Station Relocation and Housing

Project site, because no construction on that site would occur. No significant impacts to air quality would occur under the alternative.

Greenhouse Gas Emissions. Under the alternative, greenhouse gas emissions at the SFMOMA Expansion site would be similar to those generated by the SFMOMA Expansion, during both the construction and operational phases. However, greenhouse gas emissions associated with project-related construction and operation activities at the Fire Station Relocation and Housing Project site would be avoided by the alternative. Thus the contribution of the alternative to cumulative greenhouse gas emissions would be reduced, though still less than significant, compared to the proposed projects.

Wind and Shadow. Because the Preservation Alternative would result in the construction of an 11-story building (instead of a 10-story building, as proposed as part of the project), and would create a larger gap between the proposed Howard Street tower and W Hotel than would occur as part of the project, wind conditions would worsen slightly compared to the SFMOMA Expansion (including cumulative wind conditions). In particular, the alternative would likely create stronger winds relative to existing conditions on the south side of Howard Street, where winds currently exceed the hazard criterion. In addition, rooftop wind speeds would also increase relative to the proposed project.[1] The 11-story addition would slightly increase shadow coverage on Howard Street compared to the SFMOMA Expansion during the Summer Solstice, and Spring and Fall Equinoxes. However, this expanded shadow would not cover parks or formal open space areas (other than Howard Street itself and adjacent sidewalks). The alternative would thus not conflict with Section 295 of the Planning Code or create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas.

Public Services. Fire Station No. 1 would remain at its existing location under this alternative and would therefore remain subject to the existing constraints of its location and design. Operations would continue to be hindered by vehicle and pedestrian congestion that occurs around the existing

[1] *Pedestrian Level Winds, Commentary on the Impact of Preservation Alternatives, San Francisco Museum of Modern Art*, RWDI, April 13, 2011. This document is available for review at the Planning Department in Case File No. 2010.0275E.

station. In addition, operations would continue to be constrained by the existence of only two vehicle bays in the fire station (requiring one of the station's three fire trucks to be "parked in" or parked on Howard Street) and the lack of modern design features, such as a design that is in accordance with current seismic standards for an essential facility, a dedicated communications room, a design that is accessible to the disabled, enhanced locker and shower facilities for both male and female firefighters, and on-site parking. In addition, as discussed in Section IV.D, Transportation and Circulation, travel distances and travel times from a new fire station located at 935 Folsom Street would be shorter for responses along Fifth, Sixth, and Folsom Streets compared to existing conditions (and comparable for other locations). Therefore, under this alternative, Fire Station No. 1 would not function as well as it would under the proposed projects, and would be less effective at responding to cumulative demand for emergency services. Because no new housing would be constructed as part of the Preservation Alternative, no associated less-than-significant increases in demand for public services would occur.

Other Topics. The Preservation Alternative would result in the same direct increase in employment and indirect increase in residential population that would result from the SFMOMA Expansion, because the same number of museum employees would be retained under the alternative. However, because no housing would be built as part of the alternative, it would not directly increase the City's population by approximately 22 residents. Therefore, demand for utilities and recreational facilities would also be incrementally less than the proposed projects. Because the 676 Howard Street and 935 Folsom Street buildings would remain on the two project sites, they would continue to be subject to seismic hazards that could make them vulnerable to earthquakes, if no additional structural upgrades were undertaken (independent of the alternative). In addition, design measures currently required to improve water quality would not be implemented on the 935 Folsom Street site (although similar measures would be implemented on the SFMOMA Expansion site, excluding the 676 Howard Street property). In addition, with implementation of Mitigation Measures M-HZ-1a through M-HZ-1d identified in the Initial Study, the Preservation Alternative would avoid the release of hazardous building materials, including asbestos and lead-based paint, that could result from demolition of the 676 Howard and 935 Folsom Street structures. Similar to the proposed projects, the Preservation Alternative would result in less-than-significant impacts to biological resources, mineral/energy resources, and agriculture and forestry resources.

C. PARTIAL FIRE STATION DEMOLITION ALTERNATIVE (SFMOMA EXPANSION SITE)

Description

The primary objective of the Partial Fire Station Demolition Alternative is to retain the front half of Fire Station No. 1 (located at 676 Howard Street) in order to reduce less-than-significant impacts to historic resources associated with demolition of the building, while allowing SFMOMA to expand. The alternative would demolish the northern half of Fire Station No. 1 (along Hunt Street) and retain and adaptively reuse the front half of the fire station extending 50 feet north from Howard Street. The first and second floors of the fire station would become part of the museum expansion project. The 8 levels of the museum expansion above the second floor of the fire station would step around the retained footprint, resulting in a setback of approximately 50 feet at 676 Howard Street. As would occur under the proposed SFMOMA Expansion, the structure located at 670 Howard Street (the Heald Building) would be demolished, and the museum addition would extend over Hunt Street to connect the 151 Third Street structure to the new notched wing fronting onto Howard Street. The museum would expand to the same degree as the proposed SFMOMA Expansion, with up to approximately 230,000 square feet of additional gallery and support space.

Under this alternative, the height of the expansion would be approximately the same as the proposed project, at approximately 200 feet (10 stories). The 676 Howard Street building is a 2-story, reinforced concrete structure and would need to be significantly modified to accommodate the removal of half the existing structure. New structural walls or columns would be introduced to stabilize the north (cut) face of the existing structure. Because the existing and new buildings would have different structural systems, rows of new structural elements would be introduced parallel to the east and north faces of the preserved 676 Howard Street building, and these elements would be seismically separated from the retained portion of the structure.

The interior of the 676 Howard Street building at the ground floor would not become part of the Howard Street lobby/gallery, but instead would be a separate gallery differentiated and separated from the rest of the ground floor, resulting in a fragmented Howard Street frontage. Alternatively, the museum could locate a satellite retail store in the ground floor of 676 Howard Street. The second floor of the partially preserved 676 Howard Street building, which would have a ceiling height of less than 9 feet (making it unusable as a gallery), would be used for support, administrative, or storage functions. Similar to the Preservation Alternative, no promenade would be developed that would connect Natoma and Howard Streets, as under the proposed project.

Because the retained portion of 676 Howard Street would not accommodate Fire Station No. 1, the Fire Station Relocation and Housing Project would be implemented similar to the proposed project, and Fire Station No. 1 would relocate to 935 Folsom Street.

Figure VI-3 shows the conceptual Howard Street elevation of the Partial Fire Station Demolition Alternative. Figure VI-4 shows the conceptual first floor plan for the alternative.

Objectives

While this alternative could meet most of the project sponsor's objectives with regard to the SFMOMA Expansion, a few key objectives would not be met, or would not be achieved to the extent of the SFMOMA Expansion. As described in the following bullet points, similar to the Preservation Alternative, galleries along the Howard Street frontage of the building would not meet the space requirements needed to fully accommodate the larger sculptures and paintings in the SFMOMA permanent collection and the Fisher Collection. In addition, SFMOMA would not be able to proceed with the alternative while meeting established time and budget constraints due to the complexity of engineering and constructing the alternative. The project sponsor has determined that this alternative would not feasibly meet key objectives of the SFMOMA Expansion for several reasons:

- The museum's Howard Street frontage would be segregated into the partially preserved 676 Howard Street frontage (40 feet wide) and the new construction occupying the site of the Heald Building (670 Howard Street) (57 feet wide). Structural elements would further reduce the street entry to approximately 45 feet at the ground level, eliminating the museum's proposed entrance along the promenade connecting Natoma and Howard Streets and lobby. The public exhibition of "Sequence," by Richard Serra (one of the major works from the Fisher Collection) in a ground floor publicly-accessible gallery space would not be possible under this alternative because the

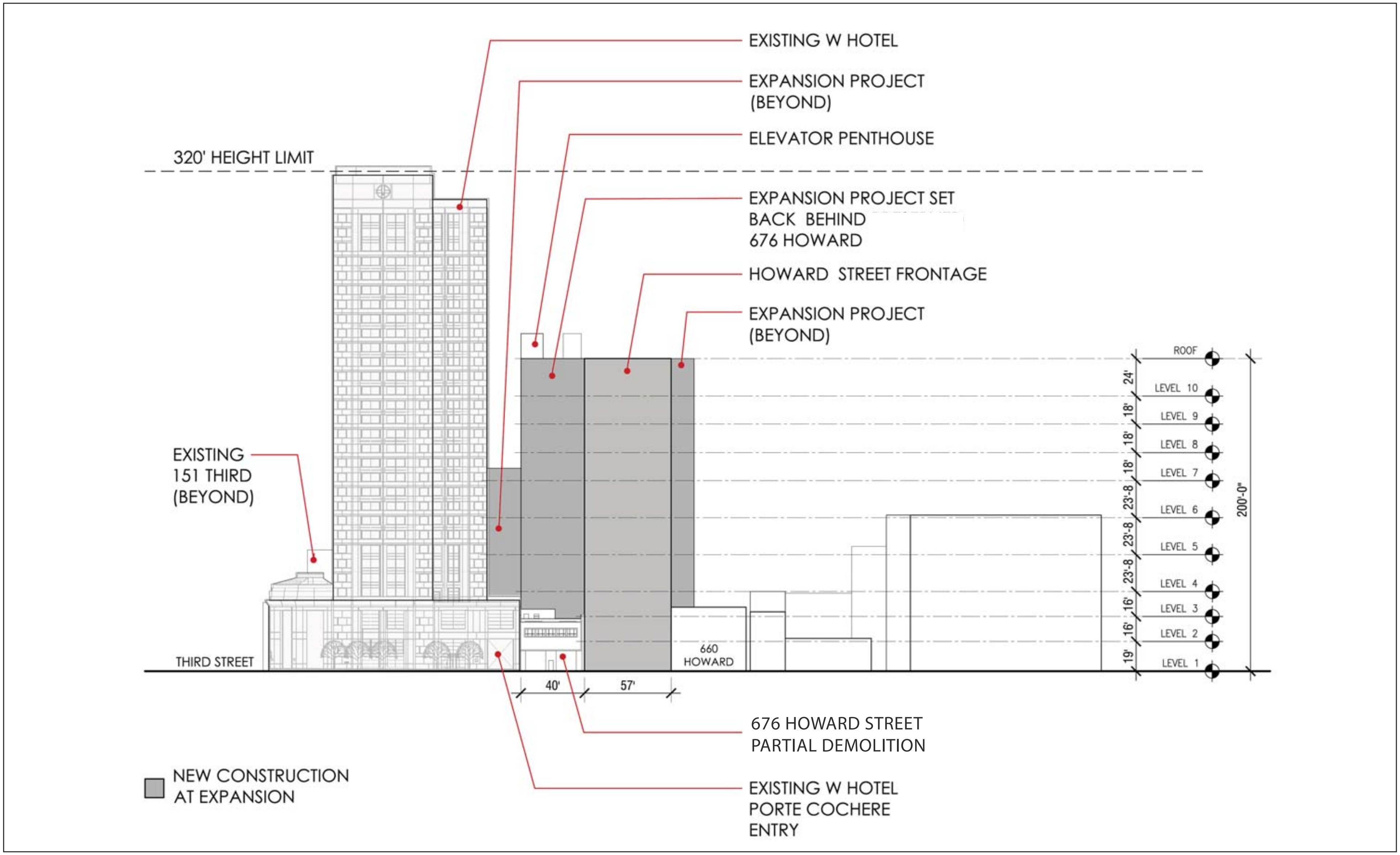

FIGURE VI-3

NOT TO SCALE

SOURCE: SNØHETTA, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Partial Fire Station Demolition Alternative – Conceptual Howard Street Elevation

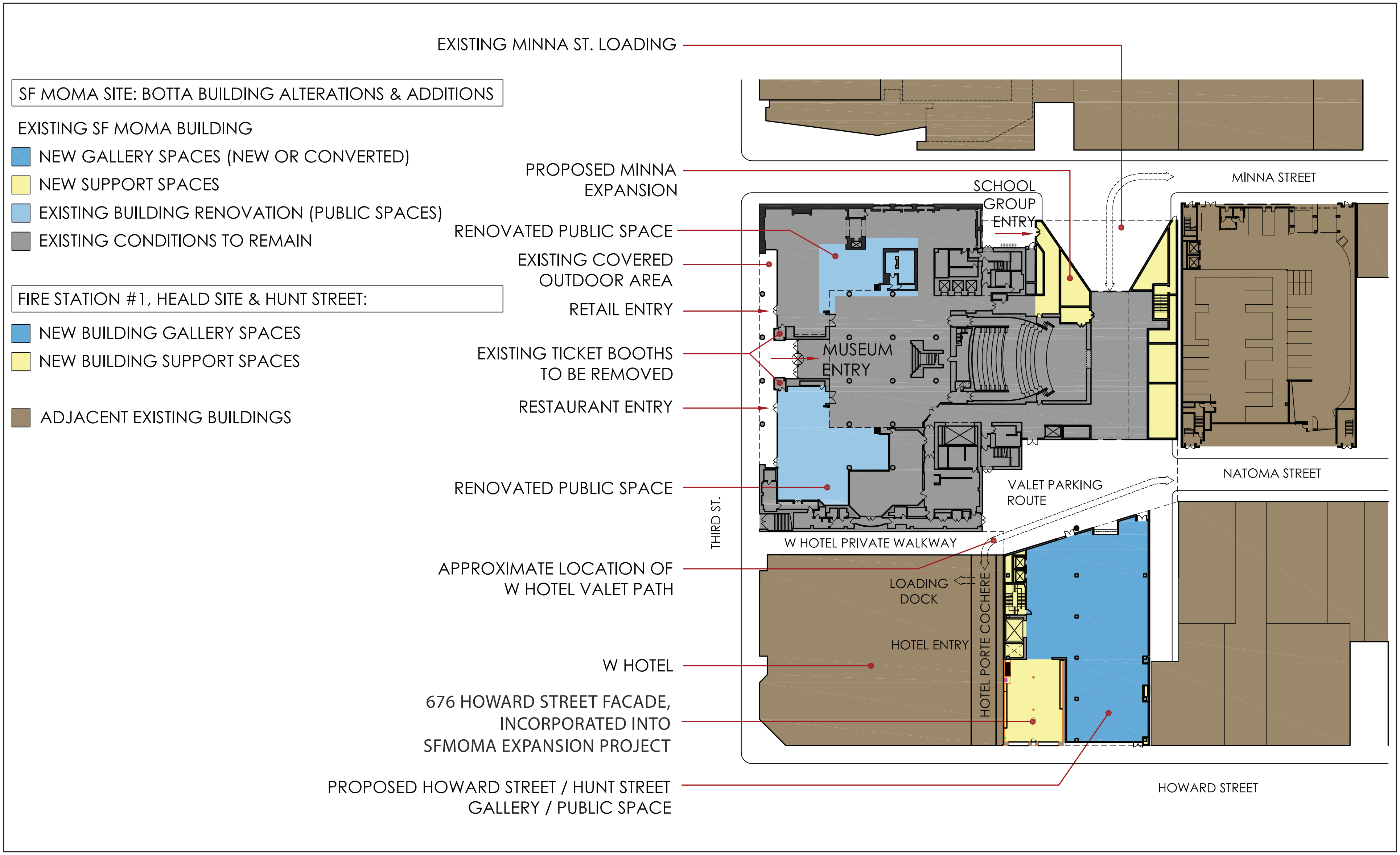

FIGURE VI-4

NOT TO SCALE

SOURCE: SFMOMA, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Partial Fire Station Demolition Alternative – Ground Floor Plan

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width of the lobby gallery would be too small. (Sequence is a 13-foot-tall steel plate sculpture with horizontal dimensions of 65 feet by 41 feet that must be located at the ground level both for structural and seismic safety reasons.) Therefore, under the Partial Fire Station Demolition Alternative, Sequence could not be exhibited in the museum.

- The promenade connecting Natoma and Howard Streets, associated open space, and museum access point would not be developed because insufficient space would be available for such a feature.
- Above the ground floor, gallery bay widths would be reduced to approximately 45 feet in width at the front 50 feet of the galleries fronting Howard Street. Gallery bay widths would be 20 feet narrower than the project sponsor's requirements for new galleries.

The Partial Fire Station Demolition Alternative would meet the SFFD's criteria for a new Fire Station No. 1 because the replacement fire station and housing project at 935 Folsom Street would be implemented similarly to the proposed Fire Station Relocation and Housing Project.

Impacts

This alternative would incrementally reduce identified less-than-significant effects to historic resources associated with demolition of Fire Station No. 1 at 676 Howard Street, which is a contributor to the potential 1952 Firehouse Bond Act Thematic Historic District.

Land Use. The Partial Fire Station Demolition Alternative would result in land use effects, including less-than-significant impacts in the cumulative condition, that are almost identical to those that would result from the proposed projects, both on the SFMOMA Expansion and Fire Station Relocation and Housing Project sites. The project approvals required for the alternative would be the same as those for the project, and an exception to the bulk requirements in the Planning Code would be required. Like the proposed projects, this alternative would not divide an established community or conflict with plans, policies, or regulations adopted for environmental protection.

Aesthetics. A key difference in aesthetics effects between the proposed SFMOMA Expansion and the Partial Fire Station Demolition Alternative would be the retention of the southern half of Fire Station No. 1 and development of a 10-story building that would be set back from Howard Street. Because the building would be the same height as that proposed as part of the project, the impacts of the Partial Fire Station Demolition Alternative on views would be identical to those that would result from the proposed project. Likewise, the addition would not substantially adversely change the visual character of the area, which is currently defined by the juxtaposition of generally newer taller buildings and older, lower-rise structures. Under the alternative, visual conditions at the Fire Station Relocation and Housing site would remain unchanged.

Cultural Resources. Even though the Partial Fire Station Demolition Alternative would retain a portion of the 676 Howard Street structure, it would result in similar effects to cultural resources as the proposed projects, including demolition of the structure located at 935 Folsom Street (considered a historic resource), and less-than-significant project and cumulative impacts to the 1952 Firehouse Bond Act Thematic Historic District associated with the partial demolition of the structure located at 676 Howard Street. The retention of the 676 Howard Street façade would reduce the less-than-considerable cumulative impacts associated with demolition of the building on the potential thematic historic district. However, the physical appearance and function of the structure could be substantially altered with implementation of the alternative. In particular, an 8-story-structure would be placed on top of the existing building. This addition would substantially change the appearance of the fire station and would sufficiently compromise its form, setting, and integrity such that the structure would not longer be considered a contributory resource. Therefore, similar to the SFMOMA Expansion, although a portion of the extant fire station would be retained as part of this alterative, the overall number of contributors to the potential 1952 Firehouse Bond Act Thematic Historic District would be reduced from an existing 14 to 13. Impacts to archaeological resources associated with demolition and construction activities would be approximately the same as those that would result from the proposed SFMOMA Expansion, since the area of ground disturbance would be similar (although a portion of the footprint of Fire Station No. 1 would be excluded from ground-disturbing construction activities).

Transportation and Circulation. This alternative would result in transportation and circulation impacts that are almost identical to those that would result from the proposed projects. Similar to the proposed projects, the Partial Fire Station Demolition Alternative would result in no significant transportation and circulation-related impacts, and would not considerably contribute to cumulative traffic effects. Because SFMOMA would expand to the extent of the proposed SFMOMA Expansion, the alternative would increase trips on local and regional roadways, although these additional trips would not result in significant impacts to traffic, transit, pedestrian, or bicycle circulation. Because Fire Station No. 1 would relocate to 935 Folsom Street as part of the alternative, the circulation patterns of emergency vehicles would change, similar to the proposed projects (as described in Section IV.D, Transportation and Circulation), and would not be expected to result in significant levels of congestion or other significant adverse transportation-related impacts. In addition, similar to the proposed Fire Station Relocation and Housing Project, the fire station relocated under the alternative would be equipped with a traffic signal preemption system and “KEEP CLEAR” and “FIRE HOUSE” markings would be painted on Folsom Street along the street segment adjacent to the fire station. No promenade connecting Natoma and Howard Streets would be developed as part of the alternative.

Noise. The Partial Fire Station Demolition Alternative would result in noise-related impacts that are almost identical to those that would result from the proposed projects. Under this alternative, construction-related increases in ambient noise levels would be generally the same at the SFMOMA site compared to the proposed SFMOMA Expansion (although variations in construction-period noise levels would be associated with the increased complexity in engineering associated with the façade retention of the 676 Howard Street building). Operational period noise impacts would also be the same under the alternative compared to the projects, because SFMOMA would expand to the same degree as the SFMOMA Expansion, resulting in similar patterns of operation, visitation, and employment. Construction-period and operational noise conditions associated with development at the 935 Folsom Street site would be identical compared to the Fire Station Relocation and Housing Project (as described in Section IV.E, Noise), because the alternative includes the development of the same fire station and multi-family residential building that are proposed as part of the Fire Station Relocation and Housing Project (and noise-generating construction and operational activities would be identical to those resulting from the proposed Fire Station Relocation and Housing Project). Thus the alternative would require implementation of Mitigation Measures NO-3 and NO-4 to reduce fire station-related operational noise and interior (residential) noise levels to a less-than-significant level. Similar to the proposed projects, the alternative would not make a considerable contribution to cumulative traffic-related noise levels.

Air Quality. Construction-period and operational-period air pollutant emissions would remain approximately the same at the sites under this alternative, compared to the proposed projects (although patterns of construction-period emissions at the SFMOMA site could change slightly compared to the project due to differences in development patterns along the Howard Street frontage of the site). Mitigation Measures AQ-3 and AQ-6 to address construction-period emissions would be required, similar to the proposed projects, and construction on the 935 Folsom Street site would expose sensitive receptors to significant and unavoidable levels of air pollutants.

Greenhouse Gas Emissions. Under the Partial Fire Station Demolition Alternative, greenhouse gas emissions at the sites would be similar to those generated by the projects, during both the construction and operational phases; construction activities, general land use changes, and activity levels at both sites would be similar to those associated with the proposed projects, and would thus not make a considerable contribution to cumulative greenhouse gas emissions.

Wind and Shadow. The Partial Fire Station Demolition Alternative, which would result in the development of a new structure extending up to approximately 200 feet (10 stories), similar to the proposed project, would result in similar at-grade wind conditions compared to the SFMOMA Expansion in the project and cumulative condition. In addition, shadow patterns would be almost identical to those that would result from the project, and shadow would not cover parks or formal open space areas (other than local street segments and sidewalks, for short periods). The alternative would thus not conflict with Section 295 of the Planning Code or create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas.

Public Services. Impacts to SFFD services associated with this alternative would be identical to those that would result from the proposed projects, because Fire Station No. 1 would be relocated to 935 Folsom Street and the new fire station would be at the same location as proposed under the Fire Station Relocation and Housing Project. Similar to the projects, the alternative would not make a considerable adverse contribution to cumulative demand for emergency services.

Other Topics. The Partial Fire Station Demolition Alternative would result in the same direct increase in employment and indirect and direct increase in residential population that would result from the SFMOMA Expansion and Fire Station Relocation and Housing Project, because the same number of museum employees and new residents would be generated by the alternative. Similarly, new demand for utilities and recreational facilities would be identical to the demand associated with the proposed projects. Impacts related to geology and soils, hydrology, and water quality would also be similar to those generated by the proposed projects because the type and scale of development on the two sites would be similar. Similar to the proposed projects, the Partial Fire Station Demolition Alternative would not result in adverse impacts to biological resources, mineral/energy resources, and agriculture and forestry resources.

D. ADAPTIVE REUSE ALTERNATIVE (FIRE STATION RELOCATION AND HOUSING PROJECT SITE)

Description

The primary objective of the Adaptive Reuse Alternative is to retain – to the degree feasible – the existing structure located at 935 Folsom Street in order to reduce impacts to historic resources associated with the demolition of the building, while allowing Fire Station No. 1 to be relocated to the site. The Adaptive Reuse Alternative would thus convert the existing building at 935 Folsom Street to a new fire station. Because the existing building (which comprises the entirety of the site) would be retained and used for the fire station, development of the 13-unit multifamily residential structure proposed as part of the Fire Station Relocation and Housing Project would be precluded. Under the Adaptive Reuse Alternative, the proposed SFMOMA Expansion or the Partial Fire Station Demolition Alternative could occur.

In order to accommodate a fire station, substantial changes to the existing building would be required. Because the soils underlying the site may be unstable and the existing building is not structurally sound due to lack of maintenance in recent years, the adaptive reuse of the existing 935 Folsom Street building for a code-compliant firehouse would require virtually all of the existing structure to be replaced. In particular, the Folsom Street façade would require substantial alteration to accommodate the new apparatus bay doors.

As part of the Adaptive Reuse Alternative, three new apparatus bay doors would be cut into the Folsom Street façade and other openings along Falmouth and/or Shipley Streets would be created and/or altered to accommodate new functions. The existing structure would require complete reconstruction in place, with a new deep pile and grade beam foundation, new floor and roof structures, and a full seismic retrofit to meet seismic standards for essential facilities.[2] In addition, large sections of the exterior concrete walls with severe cracking would require replacement. The following discussion describes the interior and exterior alterations that would be made to the existing building to implement the Adaptive Reuse Alternative.

Interior. The Folsom Street façade of the building would be converted to accommodate three new bays for SFFD emergency vehicles. The installation of bays would require a major reconfiguration of the Folsom Street façade, as well as the removal of an existing mezzanine floor directly behind that façade. A smaller existing garage door opening would be retrofitted to provide parking access for the Captain. Besides vehicle parking, the remainder of the first floor would be occupied by a communications room, fitness room, turnout locker area, a new public lobby with an elevator, and miscellaneous storage. The southern portion of the building would be re-structured to accommodate on-site parking for SFFD employees. The L-shaped second floor would be converted to required common living spaces and sleeping rooms for SFFD personnel.

Exterior. As noted above, the installation of three new bay doors would require a major alteration of the Folsom Street façade, with the removal of much of the building's character-defining features.

[2] *Conversion of Existing Building to SF Firehouse, 935 Folsom Street*, Murphy Burr Curry, Inc., Structural Engineers, February 1, 2011. This document is available for review at the Planning Department in Case File No. 2009.0291E.

Installation of the bays would require removal of nearly all existing windows and doors, as well as removal of the existing decorative balcony and the ornamental pilasters. Other existing openings could be retained, but they would require the installation of new windows and doors. Along the Falmouth and Shipley Street facades, existing openings would be retained but reconfigured with new windows and solid spandrel panels (i.e., covering the space between two adjoining arches) appropriate to the new uses within. In addition, the existing unprotected wood-framed roof and clerestory structures would require complete replacement with a non-combustible roof structure suitable for a modern essential services facility.

Structural Considerations. The existing concrete and wood structure rests on poor soils[3] and exhibits severe deterioration and differential settlement. The conversion of the structure into a code-compliant essential facility firehouse would require a major reconstruction of the existing structure in-place, with the following structural implications:

- *New Foundations/Exterior Walls*. A new deep pile (thus requiring pile driving, similar to the proposed Fire Station Relocation and Housing Project) and grade beam foundation would be required beneath the existing exterior concrete walls. The new pile and foundation would require the existing heavy walls to be undermined, realigned to vertical and supported above the ground to allow for the installation of the new foundation beneath them. Given the poor condition of the existing concrete walls and the severity of current settlement, large portions of the walls would likely not survive this procedure and would need to be completely replaced.
- *New Floors*. Given the poor underlying soils and the heavy fire equipment loads anticipated as part of the Adaptive Reuse Alternative, the ground floor would require a new 24-inch matt slab over the entire building footprint. The entire mezzanine/second floor structure would need to either be removed or replaced with an all-new structure to meet current codes.
- *New Roof and Clerestory Structure*. As noted above, the existing combustible roof structure would need to be replaced with a non-combustible structure suitable to an essential services facility.

[3] *Preliminary Geotechnical Study, 935 Folsom Street*, Treadwell and Rollo, January 25, 2010. This document is available for review at the Planning Department in Case File No. 2009.0291E. See discussion on pages 125 to 131 of the Initial Study available as Appendix A of this EIR.

- *New Windows and Doors*. All openings would require new windows and doors meeting current energy code requirements.

It is estimated that the cost of the Adaptive Reuse Alternative would be approximately $2.7 million more than the cost of the proposed Fire Station Relocation Project. In addition, because the multi-family residential building would not be built, the estimated $800,000 value of the land for that project would not be recouped by SFMOMA.

Figure VI-5 shows elevations of the Adaptive Reuse Alternative. Figure VI-6 shows sections of the alternative. Figures VI-7 through VI-9 show the ground floor, second floor, and roof plans of the alternative.

Objectives

The Adaptive Reuse Alternative would meet all the project sponsor's objectives related to the SFMOMA Expansion, and most of the objectives related to the Fire Station Relocation and Housing Project. However, a few key objectives would not be met, or would be compromised with implementation of the alternative. The alternative, because it would cost approximately $2.7 million above the cost of the proposed Fire Station Relocation and Housing Project (and would not allow for the recoupment of costs associated with the housing site) would not be considered to be cost-effective for SFMOMA. Similarly, because the alternative would retain the footprint of the existing 935 Folsom Street building, the development potential of the Shipley Street frontage of the site would be eliminated. In addition, the alternative would achieve the objective related to the construction of a seismically sound essential facility to a lesser degree than the proposed Fire Station Relocation and Housing Project due to the high degree of additional seismic and other structural reinforcement required.

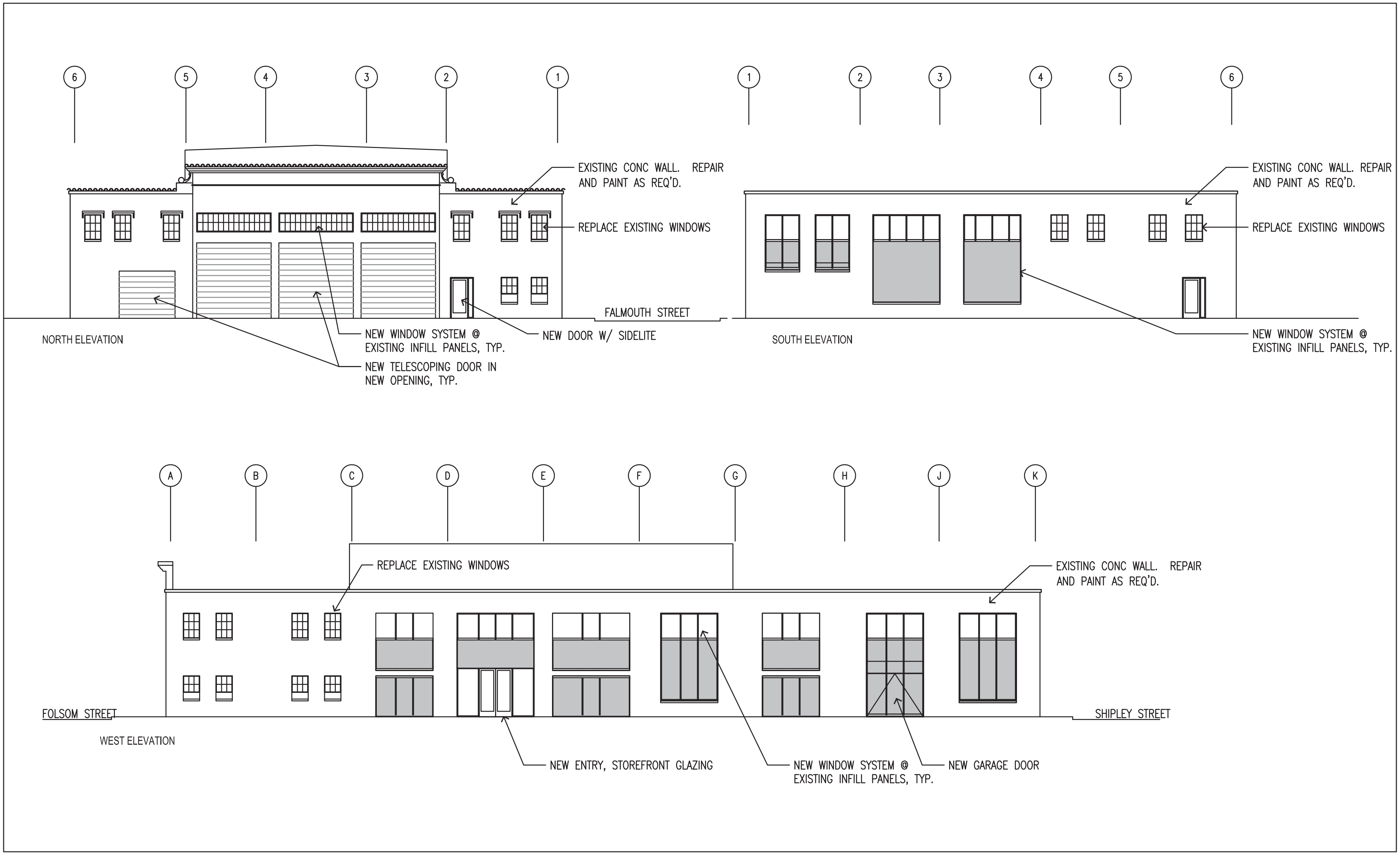

FIGURE VI-5

0 16 32
FEET

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Adaptive Reuse Alternative - Elevations

SOURCE: LMS ARCHITECTS, 2011.

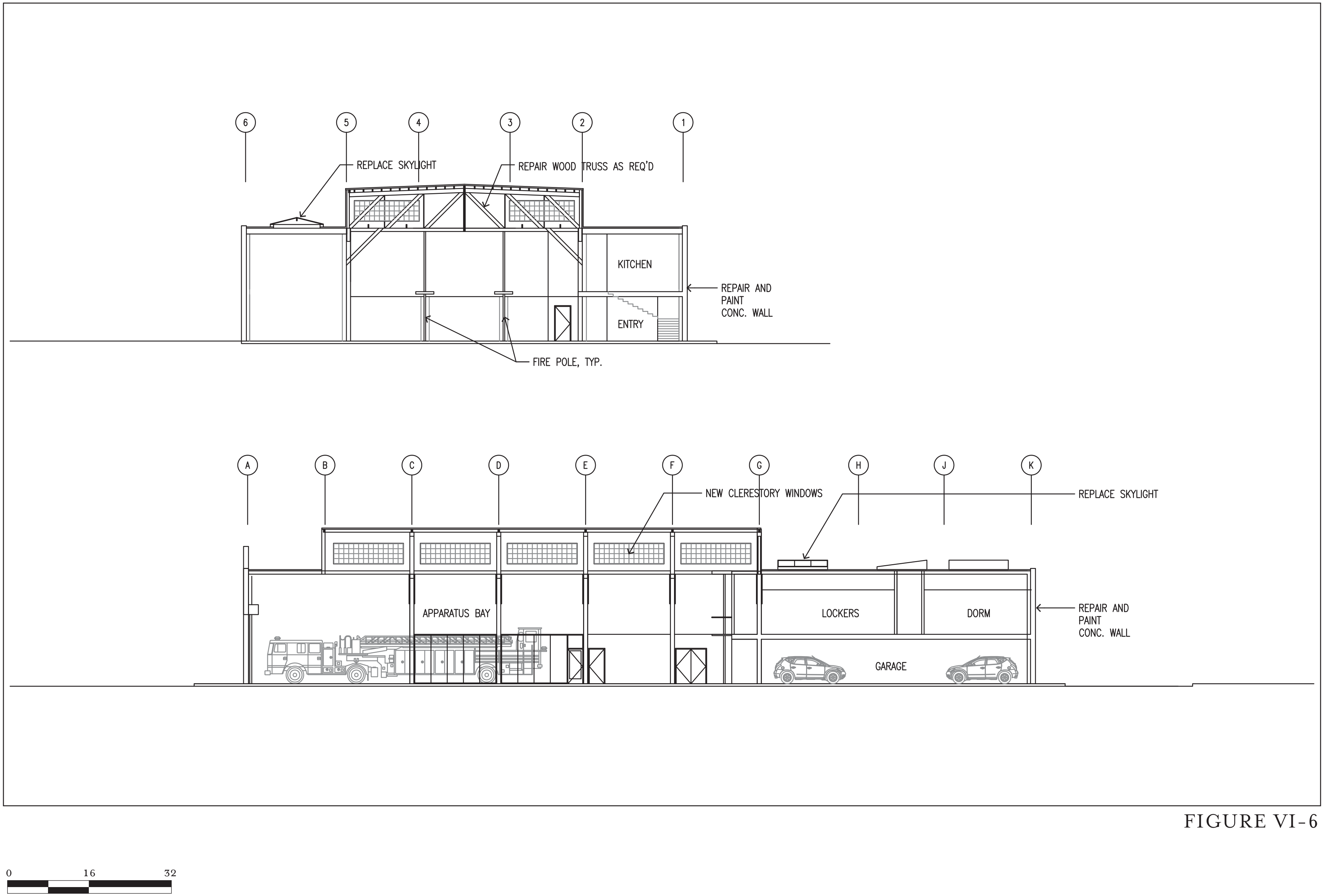

FIGURE VI-6

SOURCE: LMS ARCHITECTS, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Adaptive Reuse Alternative – Sections

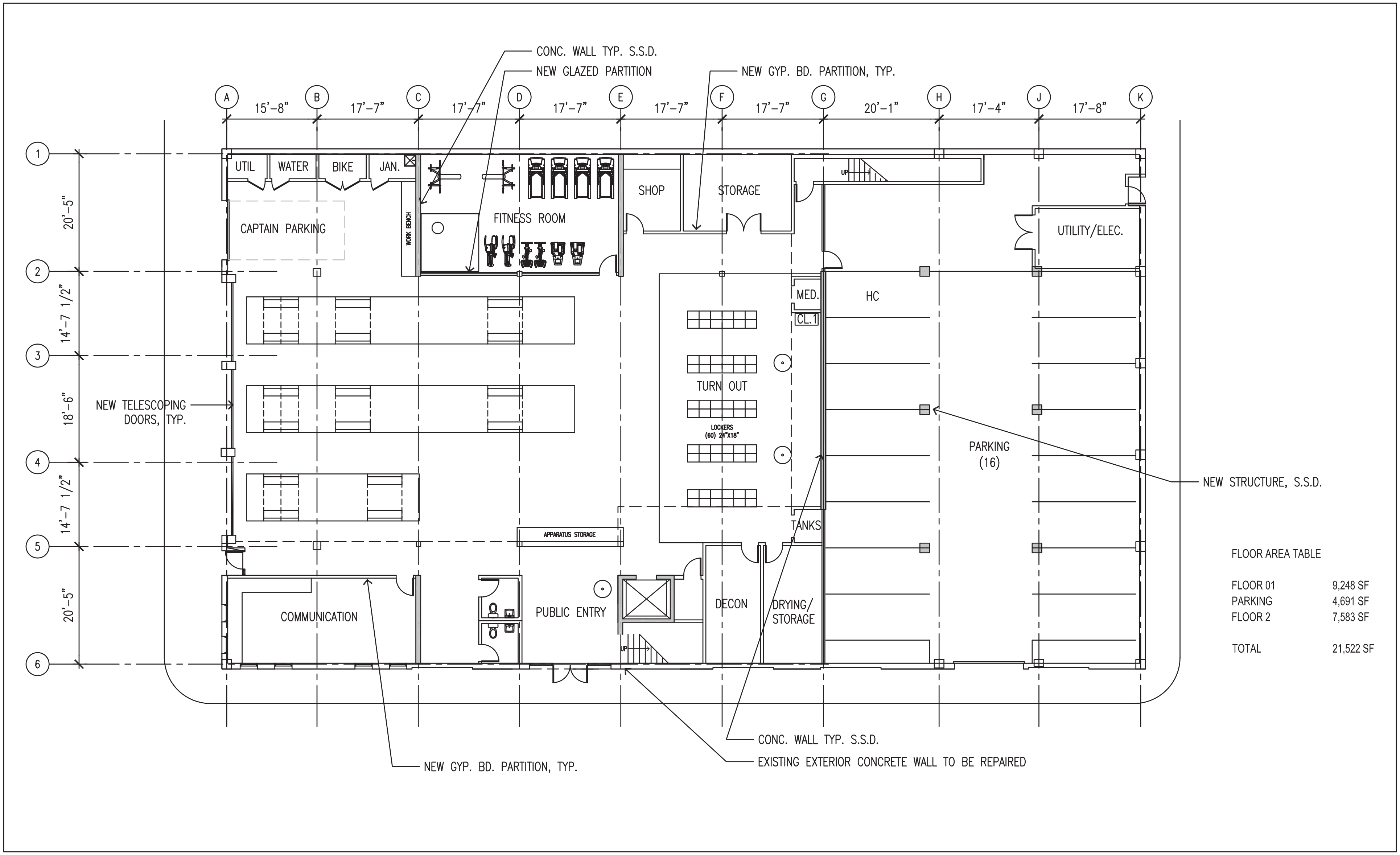

FIGURE VI-7

0 16 32
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SOURCE: LMS ARCHITECTS, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Adaptive Reuse Alternative - Ground Floor Plan

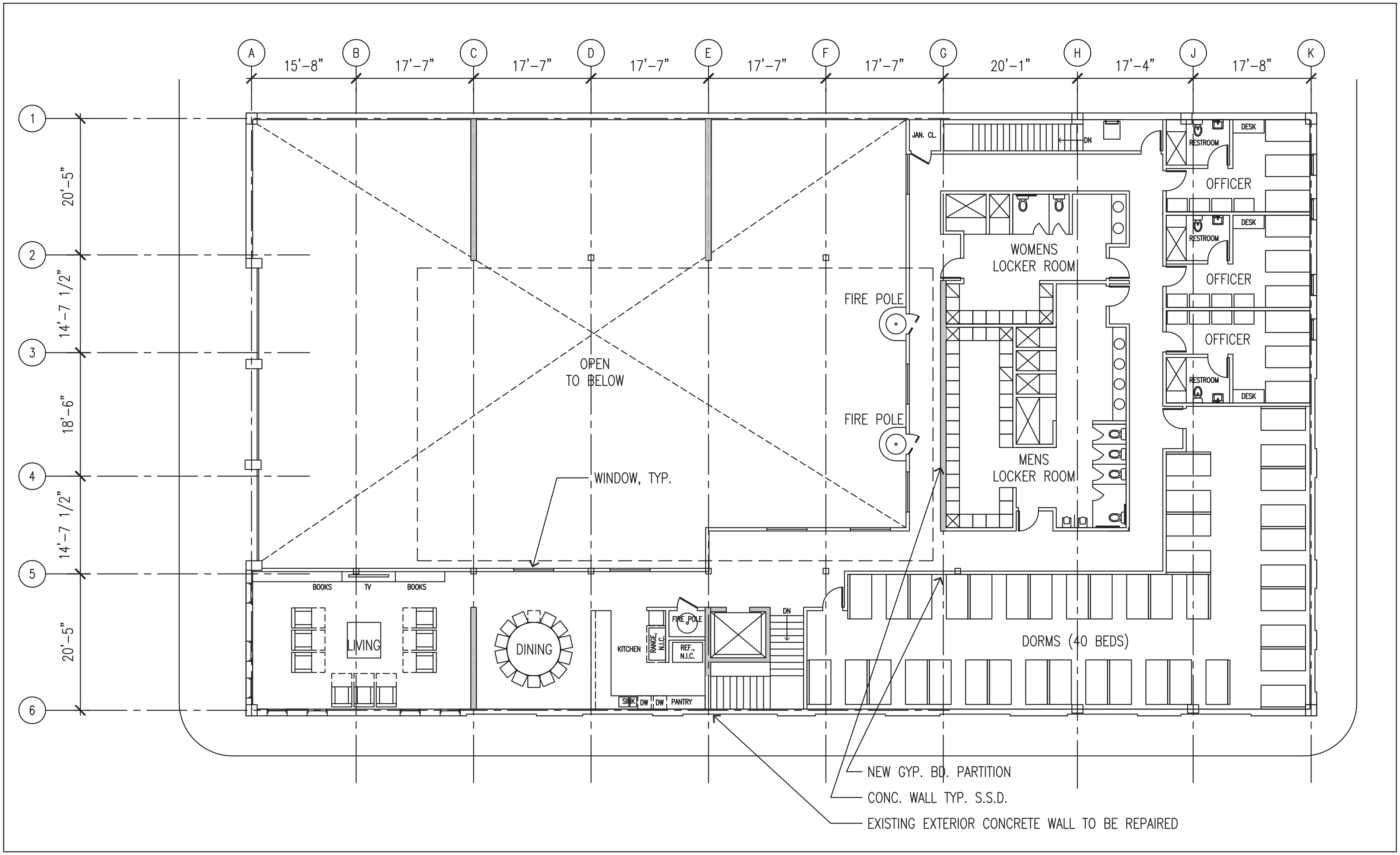
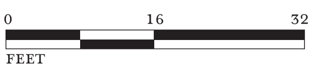


FIGURE VI-8



SOURCE: LMS ARCHITECTS, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Adaptive Reuse Alternative - Second Floor Plan

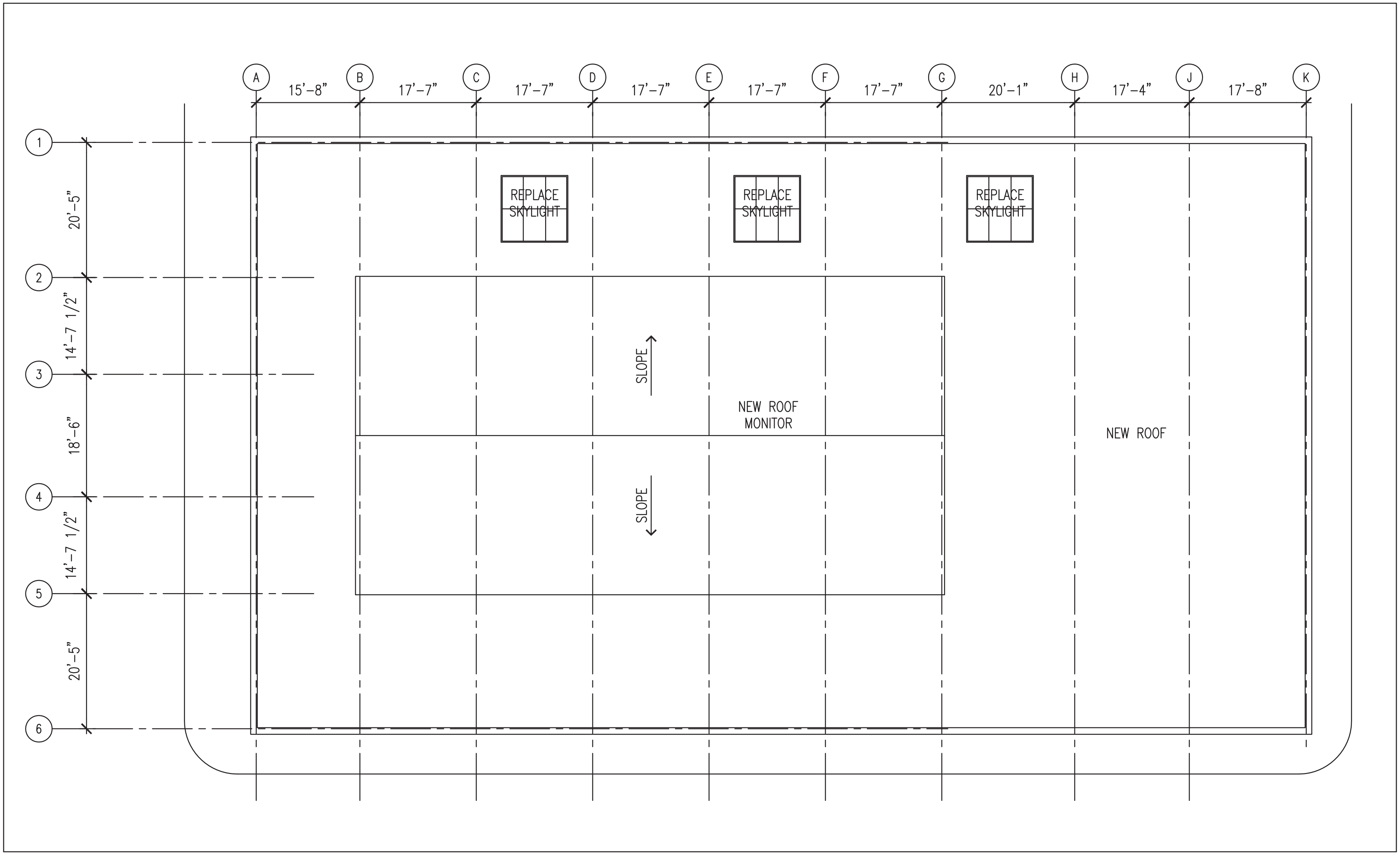
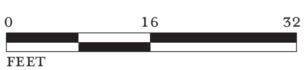


FIGURE VI-9



SOURCE: LMS ARCHITECTS, 2011.

SFMOMA Expansion and Fire Station Relocation and Housing Project EIR

Adaptive Reuse Alternative - Roof Plan

Impacts

The Adaptive Reuse Alternative would result in many of the same environmental effects that would result from the proposed projects, although impacts to historic resources associated with demolition of the 935 Folsom Street building would be incrementally reduced (but not to a less-than-significant level).

Land Use. The Adaptive Reuse Alternative would result in land use impacts that are identical to those that would result from the SFMOMA Expansion. However, no housing would be constructed on the 935 Folsom Street site, and therefore the entire site would be rezoned to the Public (P) District, instead of about 60 percent of the parcel as under the Fire Station Relocation and Housing Project. Although the entire site would be converted to a Public use, such a change in use would not result in significant land use-related impacts, as a new fire station comprising the entirety of the site would not divide an established community or conflict with plans, policies, or regulations adopted for environmental protection. However, the construction of housing on the site (as proposed under the Fire Station Relocation and Housing Project) would be considered a generally beneficial land effect, as it would promote the intent of the Mixed Use Residential (MUR) District and the housing-related policies of the East SoMa Area Plan. Therefore, the Adaptive Reuse Alternative would not contribute new residential uses to the neighborhood's housing stock.

Aesthetics. The Adaptive Reuse Alternative would result in aesthetic effects on the SFMOMA site and vicinity that are identical to those that would result from implementation of the SFMOMA Expansion. However, the alternative would result in different changes to the aesthetic character of the 935 Folsom Street compared to the proposed Fire Station Relocation and Housing Project. These changes in character would result from the retention and alteration of the existing building on the site. These characteristics would not result in adverse aesthetic effects in either the project-specific or cumulative conditions, as the adaptive reuse of the existing building could be considered to reflect a continuation of baseline conditions in the visual environment, associated with the retention of the area's light industrial visual character. Similar to the Fire Station Relocation and Housing Project, the alternative would not compromise scenic views because its height, massing, and lot coverage would not be altered.

Cultural Resources. The Adaptive Reuse Alternative would result in similar impacts to cultural resources as would occur under the proposed projects, as Fire Station No. 1 located at 676 Howard Street would be demolished (resulting in a less-than-considerable project and cumulative impact to the 1952 Firehouse Bond Act Thematic Historic District). Although the alternative would retain and adaptively reuse the industrial/commercial structure located at 935 Folsom Street, modifications to the building needed to accommodate the fire station would make the building no longer eligible for listing on the California Register. The building is eligible for listing on the California Register for its architectural qualities and as a representative work of a master architect. The Adaptive Reuse Alternative would require substantial changes to the exterior of the building, including the installation of three new bay doors along the Folsom Street frontage of the façade and removal of nearly all existing windows and doors, as well as removal of the existing decorative balcony and ornamental pilasters. Openings along the Falmouth and Shipley Street facades would be retained, but would be reconfigured with new windows and solid spandrel panels. These changes would compromise the building's character-defining features, including those that convey the building's design and the intent of the original architect. Therefore, for purposes of a conservative analysis, the structure would no longer be considered a historic resource, and, similar to the proposed projects, the alternative would result in a significant adverse effect to historic resources, though at a lesser level of magnitude than the proposed Fire Station Relocation and Housing Project. Similar to the project, Mitigation Measure CP-4 would be required to reduce impacts to historic resources (although the impacts would remain significant and unavoidable). Impacts to archaeological resources associated with the alternative would be similar to the proposed project, since new piles and a new foundation would need to be installed under the 935 Folsom Street building, which would require ground disturbance of the type that could adversely affect archaeological materials.

Transportation and Circulation. The Adaptive Reuse Alternative would result in transportation and circulation impacts that are similar to those that would result from the proposed projects, including in the cumulative condition. Similar to the proposed projects, the Adaptive Reuse Alternative would result in no significant transportation and circulation-related impacts. Because SFMOMA would expand to the extent of the project, the alternative would increase trips on local and regional roadways, although these additional trips would not result in significant impacts to roadway operation.

Because Fire Station No. 1 would relocate to 935 Folsom Street as part of the alternative, the circulation patterns of emergency vehicles would change, similar to the projects, and would not be expected to result in significant levels of congestion or other significant adverse transportation-related impacts. In addition, similar to the proposed Fire Station Relocation and Housing Project, the fire station relocated under the alternative would be equipped with a traffic signal preemption system and "KEEP CLEAR" and "FIRE HOUSE" markings would be painted on Folsom Street along the street segment adjacent to the fire station. The 13 residential units proposed as part of the projects would not be developed as part of the alternative. Therefore, overall vehicle traffic would be slightly reduced compared to the proposed projects.

Noise. The Adaptive Reuse Alternative would result in noise-related impacts that are similar to those that would result from the proposed projects. Under the Adaptive Reuse Alternative, construction-related increases in ambient noise levels would be the same at the SFMOMA site and approximately the same at the 935 Folsom Street site compared to the proposed projects (although variations in construction-period noise levels would be associated with the need to structurally reinforce the 935 Folsom Street structure). Similar to construction of the Fire Station Relocation and Housing Project, construction of the alternative would require the implementation of Mitigation Measures M-NO-2b and F-1 (from the Mitigation Monitoring and Reporting Program prepared for the Eastern Neighborhoods Rezoning and Area Plan) to reduce pile driving impacts, as discussed on page 93 of the Initial Study (Appendix A). Operational period noise impacts at the SFMOMA site would also be the same under the alternative compared to the SFMOMA Expansion, because SFMOMA would expand to the same degree as the SFMOMA Expansion, resulting in similar patterns of operation, visitation, and employment. Operation period noise levels at the 935 Folsom Street site would also be similar compared to the Fire Station Relocation and Housing Project because Fire Station No. 1 would relocate to the site as part of the Adaptive Reuse Alternative (and the trip patterns of emergency vehicles would change, consistent with the proposed projects). Mitigation Measure NO-3 would be required to reduce operational noise associated with relocated Fire Station No. 1. However, because no housing would be constructed on the site as part of the alternative, new residents on the site would not be exposed to high noise levels associated with SFFD operations, and also would not incrementally contribute to the noise environment. Similar to the proposed projects, the alternative would not make a considerable contribution to cumulative traffic-related noise levels.

Air Quality. Construction-period and operational-period air pollutant emissions would remain approximately the same at the sites under the Adaptive Reuse Alternative, compared to the proposed projects (although patterns of construction-period emissions at the 935 Folsom Street site could change slightly compared to the Fire Station Relocation and Housing Project due to changes in construction techniques associated with adaptively reusing the existing structure for a fire station). Similar to the proposed projects, Mitigation Measures AQ-3 and AQ-6 would be required, but sensitive receptors around 935 Folsom Street would be exposed to significant and unavoidable levels of air pollutants during the construction period. In addition, because no housing would be developed on the site as part of the alternative, new site residents would not be exposed to area pollutants, including those generated by the adjacent fire station, and would not themselves generate motor vehicle emissions. However, it should be noted that emissions associated with the housing project would not be cumulatively considerable.

Greenhouse Gas Emissions. Under the Adaptive Reuse Alternative, greenhouse gas emissions at the sites would be similar to those generated by the projects, during both the construction and operational phases, although greenhouse gas emissions would be slightly reduced because the housing project would not be developed as part of the alternative. Similar to the proposed projects, the alternative would not make a considerable contribution to cumulative greenhouse gas emissions.

Wind and Shadow. Under the alternative, wind and shadow effects on the SFMOMA site would be identical to those associated with the proposed SFMOMA Expansion, under both project and cumulative conditions. Because the existing structure at 935 Folsom Street would be retained as part of the alternative and adaptively reused for a fire station, wind and shadow conditions on the fire station site would be almost identical to existing conditions. However, it should be noted that while the proposed Fire Station Relocation and Housing Project would change wind and shadow conditions on the 935 Folsom Street site, none of these changes would be significant effects because hazardous winds would not be generated and shadow would not cover parks or formal open space areas other than nearby streets and sidewalks.

Public Services. Impacts to SFFD services associated with the Adaptive Reuse Alternative would be almost identical to those that would result from the proposed projects because Fire Station No. 1 would be relocated to 935 Folsom Street (and the new fire station would have similar facilities to those that would be developed as part of the Fire Station Relocation and Housing Project, including three vehicle bays along Folsom Street). Because the alternative would not include the development of 13 residential units on the site, the increase in demand for SFFD services associated with the alternative (including in the cumulative condition) would be incrementally reduced compared to the projects.

Other Topics. The Adaptive Reuse Alternative would result in the same direct increase in employment that would result from the SFMOMA Expansion and Fire Station Relocation and Housing Project, but the alternative would not result in a direct increase in residential population because it would not include the development of 13 residential units on the 935 Folsom Street site. Therefore, demand for utilities and recreational facilities would be incrementally reduced compared to the proposed projects. As described above in the description of the alternative, the existing 935 Folsom Street building would require a substantial seismic retrofit to meet safety requirements for a fire station. With the retrofit, the structure would not be expected to pose significant risks of a seismic-related collapse to the SFFD occupants. The extent of new stormwater drainage facilities on the 935 Folsom Street site would be limited because the existing structure would remain intact. Therefore, storm-water treatment mechanisms may not be as effective as those implemented as part of the Fire Station Relocation and Housing Project. Hazards-related impacts on the 935 Folsom Street site under the alternative would be similar to those associated with the projects, because hazardous building materials would be remediated under either scenario (pursuant to Mitigation Measures M-HZ-1a through M-HZ-1d identified in the Initial Study). Similar to the proposed projects, the Partial Fire Station Demolition Alternative would not result in impacts to biological resources, mineral/energy resources, and agriculture and forestry resources.

E. ALTERNATIVES CONSIDERED BUT REJECTED FROM FURTHER CONSIDERATION

The following alternatives were considered as part of this alternatives analysis, but ultimately rejected from detailed analysis:

1. *Relocation of Fire Station No. 1 to another site within the fire station's service area*. This alternative was rejected because SFMOMA was unable to locate and acquire another site within the service area meeting SFFD criteria, including the criterion that firefighter living spaces not be exposed to elevated levels of particulate matter associated with the I-80 freeway that runs between Harrison and Bryant Streets.

2. *High-rise construction above the existing 151 Third Street building and at the Minna Street and Natoma Street wings*. This alternative was rejected because it could result in significant new shadow and visual impacts, including changes to views from Yerba Buena Gardens.

3. *Construction of additional gallery, visitor and support spaces for SFMOMA and/or the Fisher Collection off-site*. This alternative was rejected because a key objective of the SFMOMA expansion project is to construct new galleries immediately contiguous to the museum's existing galleries, to provide galleries to display the Fisher Collection, and consolidate all visitor and support functions on-site. A prior proposal to locate a stand-alone museum to display the Fisher Collection in the Presidio was withdrawn in 2009.

F. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The proposed projects would result in significant and unavoidable effects to historic architectural resources due to the proposed demolition of the structure located at 935 Folsom Street, and significant and unavoidable effects to sensitive receptors in the vicinity of 935 Folsom Street due to the generation of air pollutants during the construction period. The No Project Alternative would avoid these significant effects.

The environmentally superior alternative is that alternative (other than the No Project Alternative) that would result in the least substantial environmental effects of any alternative. Thus, this EIR identifies the Preservation Alternative as the environmentally superior alternative. The Preservation

Alternative would avoid identified significant unavoidable impacts to historic resources by retaining the 935 Folsom Street building and would also avoid the significant and unavoidable exposure of sensitive receptors to air pollutants associated with construction at the Fire Station Relocation and Housing Project site (because no construction would occur on that site). The alternative would allow SFMOMA to expand and Fire Station No. 1 to continue operating in its existing location. However, this alternative would not achieve many of the objectives identified for the proposed projects, including the construction of adequate facilities to accommodate the Doris and Donald Fisher Collection, and the criteria established by the SFFD for a new fire station.

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Attn: Michael Jacinto, EIR Coordinator
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