



DRAFT ENVIRONMENTAL IMPACT REPORT

Central SoMa Plan

PLANNING DEPARTMENT
CASE NO. **2011.1356E**

STATE CLEARINGHOUSE NO. 2013042070



**SAN FRANCISCO
PLANNING
DEPARTMENT**

	Draft EIR Publication Date:	DECEMBER 14, 2016
	Draft EIR Public Hearing Date:	JANUARY 26, 2017
	Draft EIR Public Comment Period:	DECEMBER 14, 2016 – FEBRUARY 13, 2017

Written comments should be sent to:

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ACRONYMS AND ABBREVIATIONS

Central SoMa Plan

AADT	Average Annual Daily Traffic
ABAG	Association of Bay Area Governments
AC Transit	Alameda-Contra Costa Transit District
ARB	California Air Resources Board
ARDTP	Archeological Research Design and Treatment Plan
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit District
BCDC	San Francisco Bay Conservation and Development Commission
CAP	Clean Air Plan
CEQA	California Environmental Quality Act
CIE	Cultural/Institutional/Educational
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CU	Conditional Use
dB	Decibel
dBA	A-Weighted Decibel
DBI	San Francisco Department of Building Inspection
DEIR	Draft Environmental Impact Report
DPH	San Francisco Department of Public Health
DPM	Diesel Particulate Matter
DPR	California Department of Parks and Recreation
DPW	San Francisco Department of Public Works
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
ERO	Environmental Review Officer (of the Planning Department)
FAR	Floor Area Ratio
FARR	Final Archeological Resources Report
GHG	Greenhouse Gas
HABS	Historic American Buildings Survey
I-80	Interstate Highway 80
L _{dn}	Day-Night Noise Level
LEED®	Leadership in Energy and Environmental Design
LOS	Level of Service (measure of traffic or other transportation operations)
mgd	Million Gallons per Day
MIPS	Management, Information, and Professional Services
MLD	Most Likely Descendant
MOMA	San Francisco Museum of Modern Art
mph	Miles per Hour
MTA	San Francisco Municipal Transportation Agency
MTC	Metropolitan Transportation Commission
MUG	Mixed-Use General

MUO	Mixed-Use Office
NAAQS	National Ambient Air Quality Standards
NAHC	California Native American Heritage Commission
NC-T	Neighborhood Commercial Transit
NEPA	National Environmental Policy Act
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
NOP	Notice of Preparation
NWIC	Northwest Information Center
OHP	State of California Office of Historic Preservation
OPR	Governor's Office of Planning and Research
PDA	Priority Development Area
PDR	Production, Distribution, and Repair
PM	Particulate Matter
PM _{2.5}	Particulate Matter 2.5 microns or less in diameter
PM ₁₀	Particulate Matter 10 microns or less in diameter
ppb	Parts per Billion
ppm	Parts per Million
pphm	Parts per Hundred Million
RED	Residential Enclave District
ROG	Reactive Organic Gases
RSD	Residential Service District
SAAQS	State Ambient Air Quality Standards
SALI	Service, Arts, Light Industrial
SB	Senate Bill
SCH	State Clearinghouse (in the Governor's Office of Planning and Research)
SEP	Southeast Wastewater Treatment Plant
SFBAAB	San Francisco Bay Area Air Basin
SFCTA	San Francisco County Transportation Authority
SFD	San Francisco City Datum
SFPUC	San Francisco Public Utilities Commission
SFUSD	San Francisco Unified School District
SLI	Service/Light Industrial
SLR	Service/Light Industrial/Residential
SO ₂	Sulfur Dioxide
SoMa	South of Market
SRO	Single-Room Occupancy
SSO	Service/Secondary Office
SUD	Special Use District
TACs	Toxic Air Contaminants
TB-DTR	Transbay Downtown Residential
TDM	Transportation Demand Management
TDR	Transferrable Development Rights
TIDF	Transit Impact Development Fee
TOG	Total Organic Gases
v/c ratio	Volume-to-Capacity Ratio
µg/m ³	Micrograms per Cubic Meter

SUMMARY

Central SoMa Plan

This environmental impact report (EIR) chapter provides a brief summary of the findings of the EIR regarding the Central SoMa Plan (the Plan) and its potential environmental consequences. The chapter includes a summary of the project description; the environmental analysis, including environmental impacts and mitigation measures identified in this EIR; alternatives to the Plan and their comparative environmental effects; and areas of controversy and issues to be resolved.

This summary should not be relied upon for a thorough understanding of the Plan, its environmental impacts, or mitigation measures. Please refer to Chapter I, Introduction, for a more complete description of the type of environmental analysis contained in this EIR, Chapter II, Project Description, for a more complete description of the proposed project, Chapter IV, Environmental Setting, Impacts, and Mitigation Measures, for a more complete description of associated impacts and mitigation measures, and Chapter VI, Alternatives, for a more complete description of identified alternatives to the proposed project and the comparative impacts.

Project Synopsis

The Central SoMa Plan (formerly, Central Corridor Plan) is a comprehensive plan for the area surrounding much of southern portion of the Central Subway transit line, a 1.7-mile extension of the Third Street light rail line that will link the Caltrain Depot at Fourth and King Streets to Chinatown and provide service within the South of Market (SoMa) area. The Plan Area includes roughly 230 acres that comprise 17 city blocks, as well as the streets and thoroughfares that connect SoMa to its adjacent neighborhoods: Downtown, Mission Bay, Rincon Hill, and the Mission District.

The Plan Area is bounded by Second Street on the east, Sixth Street on the west, Townsend Street on the south, and by an irregular border that generally jogs along Folsom, Howard and Stevenson Streets to the north (see **Figure II-1, Central SoMa Plan Area Boundaries**, in Chapter II, Project Description). The project analyzed in the EIR includes street network changes throughout the Plan Area, including specific designs within, and in some cases beyond, the Plan Area for the following streets: Howard, Folsom, Harrison, Bryant, Brannan, Third, and Fourth Streets. In addition, open space improvements would also occur within and outside of the Plan Area.

The Plan envisions Central SoMa becoming a sustainable neighborhood, one in which the needs of the present may be met without compromising the ability of future generations to meet their own needs. The Plan's sponsor, the City and County of San Francisco (the City), endeavors to address the social, economic, and environmental aspects of sustainability through a planning strategy that accommodates anticipated population and job growth, provides public benefits, and respects and enhances neighborhood character. That strategy has informed the current draft of the Plan, which comprehensively addresses a wide range of topics that include: land use; transportation infrastructure; parks, open space and recreation facilities; ecological

sustainability; historic preservation; urban design and urban form; and financial programs and implementation mechanisms to fund public improvements.

The Plan seeks to encourage and accommodate housing and employment growth by (1) removing land use restrictions to support a greater mix of uses while also emphasizing office uses in portions of the Plan Area; (2) amending height and bulk districts to allow for taller buildings; (3) modifying the system of streets and circulation within and adjacent to the Plan Area to meet the needs and goals of a dense, transit-oriented, mix-use district; and (4) creating new, and improving existing, open spaces.

The Plan also proposes project-level changes to certain individual streets analyzed in this EIR, including Howard, Folsom, Harrison, Bryant, Brannan, Third, and Fourth Streets. Two different options are being analyzed for the couplet of Howard Street and Folsom Street. Under the One-Way Option, both streets would retain a one-way configuration (except Folsom Street east of Second Street which would retain its existing two-way operation). Under the Two-Way Option, both streets would be converted into two-way operation, and some modifications to Harrison Street would also occur as described in more detail in Chapter II, Project Description.

Plan policies have been drafted in conjunction with the land use proposals and call for public realm improvements, including planning for new open spaces; changes to the street and circulation system; policies to preserve neighborhood character and historic structures; and strategies that aim to improve public amenities and make the neighborhood more sustainable. The Plan also includes financial programs to support its public improvements through the implementation of one or more new fees, in addition to taxes or assessments that would be applied to subsequent development projects.

The Plan's eight goals are used as the EIR's project objectives. Additional detail related to these goals is included in Chapter II, Project Description. The eight goals of the Plan are as follows:

1. Increase the capacity for jobs and housing;
2. Maintain the diversity of residents;
3. Facilitate an economically diversified and lively jobs center;
4. Provide safe and convenient transportation that prioritizes walking, bicycling, and transit;
5. Offer an abundance of parks and recreational opportunities;
6. Create an environmentally sustainable and resilient neighborhood;
7. Preserve and celebrate the neighborhood's cultural heritage; and
8. Ensure that new buildings enhance the character of the neighborhood and the city.

Consistent with its goal to increase the capacity for jobs and housing (Goal 1), the Plan includes the objective of increasing the area where space for jobs and housing can be built (Objective 1.1). The Plan would accomplish this by retaining existing zoning that supports capacity for new jobs and housing, and replacing existing zoning that restricts the capacity for office and residential development with zoning that enables office and residential development.

The Plan would result in the following land use zoning changes:

- North of Harrison Street, the Mixed Use, Residential (MUR) use district west of Fifth Street would be converted to Mixed Use General (MUG). The MUR, Western SoMa-Mixed Use General (WS-MUG), and Light Industrial (M-1) use districts east of Fifth Street would be converted to Mixed Use Office (MUO). The existing zoning districts either limit or do not permit office uses, whereas the MUG and MUO zoning designations would allow for greater flexibility in the mix of land uses, including office development as well as new all-commercial buildings in the MUO use district.
- The parcels in the block bounded by Third, Folsom, Hawthorne, and Harrison Streets currently designated C-3-O (Downtown Office) would retain this designation.
- South of Harrison Street, existing use districts would all be converted to MUO or West SoMa Mixed Use Office (WS-MUO), except for parcels currently designated South Park District (SPD) and the West SoMa Service, Arts, Light Industrial (WS-SALI) area west of Fourth Street between Harrison and Bryant Streets, which would retain their current zoning designations. Use districts in this area that would be converted to MUO or WS-MUO include Residential Enclave (RED), Service/Light Industrial (SLI), M-1, and Service Secondary Office (SSO), as well as the area south of Bryant Street currently designated WS-SALI. These existing use districts either limit or restrict office uses or, when office uses are allowed, restrict other uses, such as entertainment or residential uses. Converting these use districts to MUO or WS-MUO would permit a mix of land uses that allow for greater flexibility, as the MUO and WS-MUO districts generally allow office, residential, and most other uses without limitation.

Changes to height limits under the Plan would include the following:

- Within the Plan Area north of Harrison Street, height limits on most parcels would remain between 45 and 85 feet, though there would be several adjustments, both higher and lower, within this range.
- The Plan would substantially increase the height limit for the north side of Harrison Street between Second and Third Streets, from the current range of 85–130 feet to a range of 130–200 feet.
- Other substantial height increases north of Harrison would include the southwest corner of Fourth and Clementina, which would increase from the current range of 55–130 feet to 180 feet; and the southwest corner of Fifth and Howard Streets, which would increase from the current range of 45–85 feet to 180–300 feet.
- South of Harrison Street, proposed amendments to permitted height limits are concentrated on the south side of Harrison Street between Second and Fourth Streets, where current height limits would be increased from 40–85 feet to 130–350 feet.
- Substantial height increases would also be concentrated south of Bryant Street, from east of Fourth Street to Sixth Street. Many sites within this area would increase from the current height limit of 30–85 feet to 130–400 feet.
- Lower height limits would be maintained around South Park, along the west side of Fourth Street between Bryant and Brannan Streets, and along the south side of the I-80 freeway between Fourth and Sixth Streets.

To ensure that the proposed zoning changes foster the development of a neighborhood that is consistent with the Plan's other goals, the Plan contains numerous objectives, policies, and implementation measures that limit and condition development. In particular, these relate to Goal II – Maintain the Diversity of Residents, Goal III – Facilitate an Economically Diversified and Lively Jobs Center, Goal VII – Preserve and Celebrate the

Neighborhood's Cultural Heritage, and Goal VIII – Ensure that New Buildings Enhance the Character of the Neighborhood and the City.

To ensure that removal of protective zoning proposed by the Plan does not result in a loss of Production, Distribution, and Repair (PDR) uses in the Plan Area (Plan Objective 3.3), the Plan would maintain a portion of the current SALI use district. The Plan also contains policies and implementation measures that would limit conversion of PDR space in former industrial districts, require PDR space as part of large commercial developments, and provide incentives to fund, build, and protect PDR uses.

To implement the circulation and streetscape principles in the Plan, this EIR studies proposed changes in the street network to support an attractive pedestrian and cycling environment and to lessen the impact of traffic on transit performance, while accommodating regional and through traffic on a limited number of streets where necessary. Specific proposals have been developed for Folsom, Harrison, Third, Fourth, Bryant, and Brannan Streets, extending as far west as 11th Street (in the case of Howard and Folsom Streets) and east to The Embarcadero (Folsom Street only). The proposals include wider sidewalks, upgraded and/or new transit lanes, cycle tracks and bicycle lanes, and travel lane reductions. Under the two-way option, Howard and Folsom Streets would be converted from one-way traffic to two-way operations.

The Plan also includes proposals to upgrade existing parks and create new open spaces, create a more sustainable and resilient neighborhood, preserve important historical and cultural features, and promote high-quality urban design.

Approval and implementation of the final proposed Plan would require the following actions, among others. (Approving bodies are identified in *italics*.) Specific and detailed actions would be determined as the Plan is developed:

- Amendments to the *General Plan* (various elements and figures) to conform to the concepts of the Central SoMa Plan. *Planning Commission recommendation; Board of Supervisors Approval*;
- Determination of consistency of the proposed *General Plan* amendments and rezoning with the *General Plan* and *Planning Code* Section 101.1 Priority Policies. *Planning Commission*;
- Amendment of the *Planning Code* to conform to the concepts of the Central SoMa Plan. *Planning Commission recommendation; Board of Supervisors Approval*;
- Amendment of the *Planning Code* and Zoning Maps to change mapped use districts and height limits throughout the Plan Area. *Planning Commission recommendation; Board of Supervisors Approval*; and
- Approval of alterations to street rights-of-way, including, for example, the configuration of travel lanes, sidewalk widths, and bicycle lanes, addition of crosswalks, and alley way improvements that are part of the Plan's proposals for the street network and public realm. *San Francisco Transportation Agency; Department of Public Works*.

Project-Level and Program-Level Analysis

This EIR contains both analysis at a “program-level” pursuant to CEQA Guidelines Section 15168 for adoption and implementation of the Plan and “project-level” environmental review for street network changes and open space improvements. A program EIR is appropriate for a project that will involve a series of actions that are (1) related geographically, (2) logical parts in a chain of contemplated actions, (3) connected as part of a

continuing program, and (4) carried out under the same authorizing statute or regulatory authority and have similar environmental impacts that can be mitigated in similar ways (CEQA Guidelines Section 15168).

The EIR's evaluation of the Plan is programmatic. Its assessment of potential environmental impacts is based on the various Plan components that are required for its implementation and would facilitate its goals and objectives. CEQA Guidelines Section 15168 notes that the use of a programmatic EIR "ensures consideration of cumulative impacts that might be slighted in a case-by-case analysis; avoids duplicative reconsideration of basic policy considerations; allows the lead agency to consider broad policy alternatives and program-wide mitigation measures at an early time, when the agency has greater flexibility to deal with basic problems or cumulative impacts; and allows for a reduction in paperwork.

With respect to the proposed open space improvements and street network improvements described in Chapter II, Project Description, these components are, unless otherwise noted, analyzed in this EIR at the project-level due to the sufficiency of detailed information available.

Summary of Environmental Impacts, Mitigation Measures, and Improvement Measures

This EIR analyzes the potential environmental effects of the Plan, including the street network changes and open space improvements. On April 24, 2013, the Planning Department sent a Notice of Preparation (NOP) to governmental agencies, organizations and persons who may have an interest in the proposed project (Appendix A). The NOP requested that agencies and interested parties comment on environmental issues that should be addressed in the EIR. A scoping meeting was held on May 15, 2013, to explain the environmental review process for the Plan and to provide opportunity to take public comment and concerns related to the Plan's potential environmental impacts. The Planning Department considered the public comments received at the scoping meeting and prepared an Initial Study in order to focus the scope of the EIR by assessing which environmental topics would not result in significant impacts on the environment. The Planning Department published the Initial Study on February 12, 2014 (Appendix B).

The Initial Study found that the Plan would have potentially significant impacts in the areas of land use, aesthetics, cultural and paleontological resources, transportation and circulation, noise, air quality, wind, shadow, utilities, and hydrology and water quality. Accordingly, these topics are evaluated in this EIR. The Initial Study also found that impacts on the remaining environmental topics that are required to be examined under the State CEQA Guidelines and Chapter 31 of the *San Francisco Administrative Code* would be less than significant, less than significant with mitigation measures, or would have no impact, and, therefore, need not be considered in the EIR.

Table S-1, Summary of Impacts of the Plan—Identified in the EIR, p. S-7, presents a summary of the environmental effects identified in this EIR, along with feasible mitigation measures to avoid or reduce the severity of an impact. In addition, the level of significance both before and after the implementation of any identified mitigation measure is indicated.

The Initial Study identified resource topics that would result in no impact, a less-than-significant impact, or less-than-significant with mitigation. These topics, which are summarized in **Table S-2, Summary of Impacts of the Plan—Identified in the Initial Study**, p. S-43, are not addressed in this EIR.

The categories used to designate impact significance are described as follows:

- **No Impact.** A no impact conclusion is reached if there is no potential for impacts or the environmental resource does not occur within the project area or the area of potential effects. For example, there would be no impacts related to displacement of housing if there is no existing housing at the project site. In that case, no adverse changes (or impacts) to the environment are expected.
- **Less-than-Significant Impact.** This determination applies if the impact does not exceed the defined significance criteria or would be eliminated or reduced to a less-than-significant level through compliance with existing local, state, and federal laws and regulations. No mitigation is required for impacts determined to be less than significant.
- **Less-than-Significant-Impact with Mitigation.** This determination applies if the project would result in a significant effect, exceeding the established significance criteria, but feasible mitigation is available that would reduce the impact to a less-than-significant level.
- **Significant and Unavoidable Impact with Mitigation.** This determination applies if the project would result in an adverse effect that exceeds the established significance criteria, and although feasible mitigation might lessen the impact, the residual effect would remain significant, and, therefore, the impact would be unavoidable.
- **Significant and Unavoidable Impact.** This determination applies if the project would result in an adverse effect that exceeds the established significance criteria, and there is no feasible mitigation available to reduce the impact to a less-than-significant level. Therefore, the residual impact would be significant and unavoidable.

Existing law provides several regulatory controls that would serve to avoid potential significant impacts; they are summarized here for informational purposes. These measures include prohibition of the use of mirrored glass on buildings to reduce glare, as per City Planning Commission Resolution 9212; limitation of construction-related noise levels, pursuant to the San Francisco Noise Ordinance (Article 29 of the *San Francisco Police Code*, 1972); compliance with *Planning Code* Section 139, Standards for Bird-Safe Buildings; compliance with Section 3426 of the *San Francisco Building Code*, Work Practices for Lead-Based Paint on Pre-1979 Buildings and Steel Structures; compliance with Article 22A of the *San Francisco Health Code* (also known as the Maher Ordinance), requiring that project sponsors retain the services of a qualified professional to prepare a Phase I Environmental Site Assessment (ESA) that meets the requirements of *Health Code* Section 22.A.6; compliance with Article 38 of the *San Francisco Health Code*, requiring new residential construction projects in specific areas identified as having poor air quality to install enhanced ventilation; observance of state and Federal Occupational Safety and Health Administration (OSHA) safety requirements related to handling and disposal of other hazardous materials, such as asbestos; compliance with the Construction Dust Control Ordinance; and compliance with Clean Construction Ordinance for City projects. These regulations are required and therefore assumed in the impact analysis. Where the analysis determines that the impact is sufficiently reduced to less-than-significant levels after considering these requirements, that conclusion is made and no mitigation measures are required to further lessen the impact.

TABLE S-1 SUMMARY OF IMPACTS OF THE PLAN — IDENTIFIED IN THE EIR

Impact	Level of Significance Before Mitigation	Mitigation and Improvement Measures	Level of Significance After Mitigation
A. Land Use and Land Use Planning			
Impact LU-1: Development under the Plan, and proposed open space improvements and street network changes would not physically divide an established community.	LTS	None required.	NA
Impact LU-2: Development under the Plan, including proposed open space improvements and street network changes, would conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. Specifically, the Plan could result in traffic noise along Howard Street (under the two-way option for Howard and Folsom Streets) that exceeds the noise standards in the <i>General Plan's</i> Environmental Protection Element	S	Implement Mitigation Measures NO-1a, Transportation Demand Management, and Mitigation Measure NO-1b, Siting of Noise-Generating Uses , for new development projects.	SUM
Impact C-LU-1: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would contribute considerably to a significant cumulative land use impact. Specifically, the Plan, under both the one-way and two-way options for Folsom and Howard Streets, could make a considerable contribution to cumulative traffic noise levels which would exceed the noise standards in the <i>General Plan's</i> Environmental Protection Element.	S	Implement M-NO-1a, Transportation Demand Management (TDM) , for new development projects.	SUM

LEGEND:

NI = No impact

LTS = Less than significant or negligible impact; no mitigation required

SU = Significant and unavoidable adverse impact, no feasible mitigation

NA = Not Applicable

S = Significant

LTSM = Less than significant or negligible impact; after mitigation

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TABLE S-1 SUMMARY OF IMPACTS OF THE PLAN — IDENTIFIED IN THE EIR

Impact	Level of Significance Before Mitigation	Mitigation and Improvement Measures	Level of Significance After Mitigation
B. Aesthetics			
Impact AE-1: Development under the Plan, including the proposed open space improvements and street network changes, would not substantially degrade the visual character or quality of the Plan Area or substantially damage scenic resources.	LTS	None required.	NA
Impact AE-2: Development under the Plan, including the proposed open space improvements and street network changes, would alter public views of the Plan Area from short-, mid-, and long-range vantage points and alter views into the surrounding neighborhoods from within the Plan Area, but would not adversely affect public views or have a substantial adverse effect on scenic vistas.	LTS	None required.	NA
Impact AE-3: Development under the Plan, including the proposed open space improvements and street network changes, would not create a new source of substantial light or glare in the Plan Area that would adversely affect day or nighttime views or substantially impact other people or properties.	LTS	None required.	NA
Impact C-AE-1: Development under the Plan, including the proposed street network changes and open space improvements, in combination with past, present and reasonably foreseeable future projects, would alter the visual character and public views of and through SoMa, but would not adversely affect visual character, scenic vistas, or scenic resources or substantially increase light and glare.	LTS	None required.	NA

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Impact	Level of Significance Before Mitigation	Mitigation and Improvement Measures	Level of Significance After Mitigation
C. Cultural and Paleontological Resources			
Impact CP-1: Development under the Plan would result in the demolition or substantial alteration of individually identified historic architectural resources and/or contributors to a historic district or conservation district located in the Plan Area, including as-yet unidentified resources, a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.	S	<p>Mitigation Measure M-CP-1a: Avoidance or Minimization of Effects on Identified Historical Resources. The project sponsor of a subsequent development project in the Plan Area shall consult with the Planning Department’s Preservation staff to determine whether there are feasible means to redesign or otherwise revise the project to avoid significant adverse effects on historic architectural resource(s) (including historic districts), whether previously identified or identified as part of the project’s historical resources analysis. If avoidance is not feasible, the project sponsor shall seek feasible means to reduce effects on historic architectural resource(s) to a less-than-significant level, with the significance of the impact to be judged based on whether the proposed project would materially impair the resource as defined in CEQA Guidelines Section 15064.5(b).</p> <p>Mitigation Measure M-CP-1b: Documentation of Historical Resource(s). Where avoidance of effects to a less-than-significant level is not feasible, as described in M-CP-1a, the project sponsor of a subsequent development project in the Plan Area shall undertake historical documentation prior to the issuance of demolition or site permits. To document the buildings more effectively, the sponsor shall prepare Historic American Buildings Survey (HABS)-level photographs and an accompanying HABS Historical Report, which shall be maintained on-site, as well as in the appropriate repositories, including but not limited to, the San Francisco Planning Department, San Francisco Architectural Heritage, the San Francisco Public Library, and the Northwest Information Center. The contents of the report shall include an architectural description, historical context, and statement of significance, per HABS reporting standards. The documentation shall be undertaken by a qualified professional who meets the standards for history, architectural history, or architecture (as appropriate), as set forth by the <i>Secretary of the Interior’s Professional Qualification Standards</i> (36 Code of Federal Regulations, Part 61). HABS documentation shall provide the appropriate level of visual documentation and written narrative based on the importance of the resource (types of visual documentation typically range from producing a sketch plan to developing measured drawings and view camera (4x5) black and white photographs). The appropriate level of HABS documentation and written narrative shall be determined by the Planning Department’s Preservation staff. The report shall be reviewed by the Planning Department’s Preservation staff for completeness. In certain instances, Department Preservation staff may request HABS-level photography, a historical report, and/or measured architectural drawings of the existing building(s).</p> <p>Mitigation Measure M-CP-1c: Oral Histories. For projects that would demolish a historical resource or contributor to a historic district for which Planning Department preservation staff determined that such a measure would be effective and feasible, the project sponsor shall undertake an oral history project that</p>	SUM

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		<p>includes interviews of people such as residents, past owners, or former employees. The project shall be conducted by a professional historian in conformance with the Oral History Association's Principles and Standards (http://alpha.dickinson.edu/oha/pub_eg.html). In addition to transcripts of the interviews, the oral history project shall include a narrative project summary report containing an introduction to the project, a methodology description, and brief summaries of each conducted interview. Copies of the completed oral history project shall be submitted to the San Francisco Public Library, Planning Department, or other interested historical institutions.</p> <p>Mitigation Measure M-CP-1d: Interpretive Program. For projects that would demolish a historical resource or contributor to a historic district for which Preservation Planning staff determined that such a measure would be effective and feasible, the project sponsor shall work with Department Preservation staff or other qualified professional to institute an interpretive program on-site that references the property's history and the contribution of the historical resource to the broader neighborhood or historic district. An example of an interpretive program is the creation of historical exhibits, incorporating a display featuring historic photos of the affected resource and a description of its historical significance, in a publicly accessible location on the project site. This may include a website or publically-accessible display. The contents of the interpretative program shall be determined by the Planning Department Preservation staff. The development of the interpretive displays should be overseen by a qualified professional who meets the standards for history, architectural history, or architecture (as appropriate) set forth by the <i>Secretary of the Interior's Professional Qualification Standards</i> (36 Code of Federal Regulations, Part 61). An outline of the format, location and content of the interpretive displays shall be reviewed and approved by the San Francisco Planning Department's Preservation staff prior to issuance of a demolition permit or site permit. The format, location and content of the interpretive displays must be finalized prior to issuance of any Building Permits for the project.</p> <p>Mitigation Measure M-CP-1e: Video Recordation. For projects that would demolish a historical resource or contributor to a historic district for which Preservation Planning staff determined that such a measure would be effective and feasible, the project sponsor shall work with Department Preservation staff or other qualified professional, to undertake video documentation of the affected historical resource and its setting. The documentation shall be conducted by a professional videographer, preferably one with experience recording architectural resources. The documentation shall be narrated by a qualified professional who meets the standards for history, architectural history, or architecture (as appropriate), as set forth by the <i>Secretary of the Interior's Professional Qualification Standards</i> (36 Code of Federal Regulations, Part 61). The documentation shall include as much information as possible—using visuals in combination with narration—about the materials, construction methods, current condition, historic use,</p>	

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		<p>and historic context of the historical resource.</p> <p>Archival copies of the video documentation shall be submitted to the Planning Department, and to repositories including but not limited to: the San Francisco Public Library, Northwest Information Center and the California Historical Society. This mitigation measure would supplement the traditional HABS documentation, and would enhance the collection of reference materials that would be available to the public and inform future research.</p> <p>The video documentation shall be reviewed and approved by the San Francisco Planning Department's Preservation staff prior to issuance of a demolition permit or site permit or issuance of any Building Permits for the project.</p>	
Impact CP-2: Neither the proposed open space improvements nor street network changes would adversely affect historic architectural resources in a way that would result in a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.	LTS	None required.	NA
Impact CP-3: Construction activities in the Plan Area would result in a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5, through indirect construction damage to historic architectural resources.	S	<p>Mitigation Measure M-CP-3a: Protect Historical Resources from Adjacent Construction Activities. The project sponsor of a development project in the Plan Area shall consult with Planning Department Environmental Planning/Preservation staff to determine whether adjacent or nearby buildings constitute historical resources that could be adversely affected by construction-generated vibration. For purposes of this measure, nearby historic buildings shall include those within 100 feet of a construction site for a subsequent development project if pile driving would be used at that site; otherwise, it shall include historic buildings within 25 feet if vibratory and vibration-generating construction equipment, such as jackhammers, drill rigs, bulldozers, and vibratory rollers would be used. If one or more historical resources is identified that could be adversely affected, the project sponsor shall incorporate into construction specifications for the proposed project a requirement that the construction contractor(s) use all feasible means to avoid damage to adjacent and nearby historic buildings. Such methods may include maintaining a safe distance between the construction site and the historic buildings (as identified by the Planning Department Preservation staff), using construction techniques that reduce vibration (such as using concrete saws instead of jackhammers or hoe-rams to open excavation trenches, the use of non-vibratory rollers, and hand excavation), appropriate excavation shoring methods to prevent movement of adjacent structures, and providing adequate security to minimize risks of vandalism and fire. No measures need be applied if no vibratory equipment would be employed or if there are no historic</p>	LTSM

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		<p>buildings within 100 feet of the project site.</p> <p>Mitigation Measure M-CP-3b: Construction Monitoring Program for Historical Resources. For those historical resources identified in Mitigation Measure M-CP-3a, and where heavy equipment would be used on a subsequent development project, the project sponsor of such a project shall undertake a monitoring program to minimize damage to adjacent historic buildings and to ensure that any such damage is documented and repaired. The monitoring program, which shall apply within 100 feet where pile driving would be used and within 25 feet otherwise, shall include the following components. Prior to the start of any ground-disturbing activity, the project sponsor shall engage a historic architect or qualified historic preservation professional to undertake a pre-construction survey of historical resource(s) identified by the San Francisco Planning Department within 125 feet of planned construction to document and photograph the buildings' existing conditions. Based on the construction and condition of the resource(s), the consultant shall also establish a standard maximum vibration level that shall not be exceeded at each building, based on existing condition, character-defining features, soils conditions, and anticipated construction practices (a common standard is 0.2 inch per second, peak particle velocity). To ensure that vibration levels do not exceed the established standard, the project sponsor shall monitor vibration levels at each structure and shall prohibit vibratory construction activities that generate vibration levels in excess of the standard.</p> <p>Should vibration levels be observed in excess of the standard, construction shall be halted and alternative construction techniques put in practice, to the extent feasible. (For example, pre-drilled piles could be substituted for driven piles, if feasible based on soils conditions; smaller, lighter equipment might be able to be used in some cases.) The consultant shall conduct regular periodic inspections of each building during ground-disturbing activity on the project site. Should damage to either building occur, the building(s) shall be remediated to its pre-construction condition at the conclusion of ground-disturbing activity on the site.</p>	
Impact CP-4: Development under the Plan, including the proposed open space improvements and street network changes, would cause a substantial adverse change in the significance of an archeological resource pursuant to CEQA Guidelines Section 15064.5.	S	<p>Mitigation Measure M-CP-4a: Project-Specific Preliminary Archeological Assessment. This archeological mitigation measure shall apply to any project involving any soils-disturbing or soils-improving activities including excavation, utilities installation, grading, soils remediation, compaction/chemical grouting to a depth of five (5) feet or greater below ground surface, for which no archeological assessment report has been prepared.</p> <p>Projects to which this mitigation measure applies shall be subject to Preliminary Archeology Review (PAR) by the San Francisco Planning Department archeologist.</p> <p>Based on the PAR, the Environmental Review Officer (ERO) shall determine if there is a potential for</p>	LTSM

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		<p>effect to an archeological resource, including human remains, and, if so, what further actions are warranted to reduce the potential effect of the project on archeological resources to a less-than-significant level. Such actions may include project redesign to avoid the potential to affect an archeological resource; or further investigations by an archeological consultant, such as preparation of a project-specific Archeological Research Design and Treatment Plan (ARDTP) or the undertaking of an archeological monitoring or testing program based on an archeological monitoring or testing plan. The scope of the ARDTP, archeological testing or archeological monitoring plan shall be determined in consultation with the ERO and consistent with the standards for archeological documentation established by the Office of Historic Preservation (OHP) for purposes of compliance with CEQA (OHP Preservation Planning Bulletin No. 5). Avoidance of effect to an archeological resource is always the preferred option.</p> <p>Mitigation Measure M-CP-4b: Procedures for Accidental Discovery of Archeological Resources. This mitigation measure is required for projects that would result in soil disturbance and are not subject to Mitigation Measure M-CP-4a.</p> <p>Should any indication of an archeological resource, including human remains, be encountered during any soils-disturbing activity of the project, the project head foreman and/or project sponsor shall immediately notify the ERO and shall immediately suspend any soils-disturbing activities in the vicinity of the discovery until the ERO has determined what additional measures should be undertaken.</p> <p>If the ERO determines that an archeological resource may be present within the project site, the project sponsor shall retain the services of an archeological consultant from the pool of qualified archeological consultants maintained by the San Francisco Planning Department archeologist. The archeological consultant shall advise the ERO as to whether the discovery is an archeological resource, retains sufficient integrity, and is of potential scientific/historical/cultural significance. If an archeological resource is present, the archeological consultant shall identify and evaluate the archeological resource. The archeological consultant shall make a recommendation as to what action, if any, is warranted. Based on this information, the ERO may require, if warranted, specific additional measures to be implemented by the project sponsor.</p> <p>Measures might include preservation in situ of the archeological resource, an archeological monitoring program, an archeological testing program, or an archeological treatment program. If an archeological treatment program, archeological monitoring program or archeological testing program is required, it shall be consistent with the Planning Department's Environmental Planning (EP) division guidelines for such programs. The ERO may also require that the project sponsor immediately implement a site security program if the archeological resource is at risk from vandalism, looting, or other damaging actions. If</p>	

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		<p>human remains are found all applicable state laws will be followed as outlined in Impact CP-7 and an archeological treatment program would be implemented in consultation with appropriate descendant groups and approved by the ERO.</p> <p>The project archeological consultant shall submit a Final Archeological Resources Report (FARR) to the ERO that evaluates the historical significance of any discovered archeological resource and describes the archeological and historical research methods employed in the archeological monitoring/data recovery program(s) undertaken. Information that may put at risk any archeological resource shall be provided in a separate removable insert within the final report.</p> <p>Copies of the Draft FARR shall be sent to the ERO for review and approval. Once approved by the ERO, copies of the FARR shall be distributed as follows: California Archeological Site Survey Northwest Information Center (NWIC) shall receive one copy and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The Environmental Planning Division of the San Francisco Planning Department shall receive one bound copy, one unbound copy, and one unlocked, searchable PDF copy on a CD of the FARR along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest or interpretive value, the ERO may require a different final report content, format, and distribution from that presented above.</p>	
Impact CP-5: Development under the Plan, including the proposed open space improvements and street network changes, could cause a substantial adverse change in the significance of a tribal cultural resource pursuant to CEQA Guidelines Section 21084.3.	S	<p>Mitigation Measure M-CP-5: Project-Specific Tribal Cultural Resource Assessment. This tribal cultural resource mitigation measure shall apply to any project involving any soils-disturbing or soils-improving activities including excavation, utilities installation, grading, soils remediation, compaction/chemical grouting to a depth of five (5) feet or greater below ground surface.</p> <p>Projects to which this mitigation measure applies shall be reviewed for the potential to affect a tribal cultural resource in tandem with Preliminary Archeology Review (PAR) of the project by the San Francisco Planning Department archeologist. For projects requiring a Mitigated Negative Declaration or Environmental Impact Report, the Department "Notification Regarding Tribal Cultural Resources and CEQA" shall be distributed to the Department tribal distribution list. Consultation with California Native American tribes regarding the potential of the project to affect a tribal cultural resource will occur at the request of any notified tribe. For all projects subject to this mitigation measure, if staff determines that the proposed project may have a potential significant adverse effect on a tribal cultural resource, then the following shall be required as determined warranted by the ERO.</p> <p>If staff determines that preservation-in-place of the tribal cultural resource is both feasible and effective, based on information provided by the applicant regarding feasibility and other available information,</p>	LTSM

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		then the project archeological consultant shall prepare an archeological resource preservation plan (ARPP). Implementation of the approved ARPP by the archeological consultant shall be required when feasible. If staff determines that preservation-in-place of the TCR is not a sufficient or feasible option, then the project sponsor shall implement an interpretive program of the TCR in coordination with affiliated Native American tribal representatives. An interpretive plan produced in coordination with affiliated Native American tribal representatives, at a minimum, and approved by the ERO shall be required to guide the interpretive program. The plan shall identify proposed locations for installations or displays, the proposed content and materials of those displays or installation, the producers or artists of the displays or installation, and a long-term maintenance program. The interpretive program may include artist installations, preferably by local Native American artists, oral histories with local Native Americans, artifacts displays and interpretation, and educational panels or other informational displays.	
Impact CP-6: Development under the Plan, including the proposed open space improvements and street network changes, would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature.	LTS	None required.	NA
Impact CP-7: Development under the Plan, including the proposed open space improvements and street network changes, would not disturb human remains, including those interred outside of formal cemeteries.	LTS	None required.	NA
Impact C-CP-1: Development under the Plan, in combination with past, present, and reasonably foreseeable future projects in the vicinity, could result in demolition and/or alteration of historical resources, thereby contributing considerably to significant cumulative historical resources impacts.	S	Implement Mitigation Measures M-CP-1a, Avoidance or Minimization of Effects on Historical Resources, M-CP-1b, Documentation of Historical Resource(s); M-CP-1c, Oral Histories; M-CP-1d, Interpretive Program; and M-CP-1e, Video Recordation.	SUM

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Impact C-CP-2: The proposed open space improvements and street network changes within the Plan Area, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute considerably to significant cumulative historical resources impacts.	LTS	None required.	NA
Impact C-CP-3: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable future projects in the vicinity, could cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5 or a tribal cultural resource pursuant to CEQA Guidelines Section 21084.3. (Less than Significant with Mitigation)	S	Implement Mitigation Measures M-CP-4a, Project-Specific Preliminary Archeological Assessment; M-CP-4b, Procedures for Accidental Discovery of Archeological Resources; and M-CP-5: Project-Specific Tribal Cultural Resource Assessment.	LTSM
Impact C-CP-4: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature, and would not disturb human remains, including those interred outside of formal cemeteries.	LTS	None required	NA
D. Transportation and Circulation			
Impact TR-1: Development under the Plan, including the proposed open space improvements and the street network changes, would not cause substantial additional VMT or substantially increase automobile travel.	LTS	None required.	NA

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Impact TR-2: Development under the Plan, including the proposed open space improvements and the street network changes, would not result in traffic hazards.	LTS	None required.	NA
Impact TR-3: Development under the Plan, including the proposed open space improvements and street network changes, would result in a substantial increase in transit demand that would not be accommodated by local transit capacity, and would cause a substantial increase in delays resulting in adverse impacts on local and regional transit routes.	S	<ul style="list-style-type: none"> • Mitigation Measure M-TR-3a: Transit Enhancements. The following are City actions that would reduce local and regional transit impacts associated with implementation of the Central SoMa Plan and proposed street network changes. • <i>Enhanced Transit Funding.</i> To accommodate project transit demand, the City shall ensure that sufficient operating and capital funding is secured, including through the following measures: • Establish fee-based sources of revenue such as parking benefit districts. • Establish a congestion-charge scheme for downtown San Francisco, with all or a portion of the revenue collected going to support improved local and regional transit service on routes that serve Downtown and the Central SoMa Plan Area. • Seek grant funding for specific capital improvements from regional, State and federal sources. • <i>Transit Corridor Improvement Review.</i> During the design phase, the SFMTA shall review each street network project that contains portions of Muni transit routes where significant transit delay impacts have been identified (routes 8 Bayshore, 8AX Bayshore Express, 8BX Bayshore Express, 10 Townsend, 14 Mission, 14R Mission Rapid, 27 Bryant, 30 Stockton, 45 Union-Stockton, and 47 Van Ness). Through this review, SFMTA shall incorporate feasible street network design modifications that would meet the performance criteria of maintaining accessible transit service, enhancing transit service times, and offsetting transit delay. Such features could include, but shall not be limited to, transit-only lanes, transit signal priority, queue jumps, stop consolidation, limited or express service, corner or sidewalk bulbs, and transit boarding islands, as determined by the SFMTA, to enhance transit service times and offset transit delay. Any subsequent changes to the street network designs shall be subject to a similar review process. • <i>Transit Accessibility.</i> To enhance transit accessibility, the Planning Department and the SFMTA shall establish a coordinated planning process to link land use planning and development in Central SoMa to transit and other alternative transportation mode planning. This shall be achieved through some or all of the following measures: • Implement recommendations of the <i>Better Streets Plan</i> that are designed to make the pedestrian environment safer and more comfortable for walk trips throughout the day, especially in areas where 	SUM

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		<p>sidewalks and other realms of the pedestrian environment are notably unattractive and intimidating for pedestrians and discourage walking as a primary means of circulation. This includes traffic calming strategies in areas with fast-moving, one-way traffic, long blocks, narrow sidewalks and tow-away lanes, as may be found in much of the Central SoMa area.</p> <ul style="list-style-type: none"> • Implement building design features that promote primary access to buildings from transit stops and pedestrian areas, and discourage the location of primary access points to buildings through parking lots and other auto-oriented entryways. • Develop Central SoMa transportation implementation programs that manage and direct resources brought in through pricing programs and development-based fee assessments, as outlined above, to further the multimodal implementation and maintenance of these transportation improvements. • <i>Muni Storage and Maintenance.</i> To ensure that Muni is able to service additional transit vehicles needed to serve increased demand generated by development in Central SoMa, the SFMTA shall provide maintenance and storage facilities. In 2013, the SFMTA prepared a <i>Real Estate and Facilities Vision for the 21st Century</i> report.¹ The document provides a vision for addressing Muni's storage and maintenance needs, particularly in light of substantial growth in fleet as well as changes in the fleet composition. • Mitigation Measure M-TR-3b: Boarding Improvements. The SFMTA shall implement boarding improvements such as low floor buses and pre-payment that would reduce the boarding times to mitigate the impacts on transit travel times on routes where Plan ridership increases are greatest, such as the 8 Bayshore, 8AX/8BX Bayshore Expresses, 10 Townsend, 14 Mission, 14R Mission Rapid, 27 Bryant, 30 Stockton, 45 Union-Stockton, and 47 Van Ness routes. These boarding improvements, which would reduce delay associated with passengers boarding and alighting, shall be made in combination with Mitigation Measures M-TR-3c, Upgrade Transit-only Lanes on Third Street, M-TR-3d, Signalization and Intersection Restriping at Townsend/Fifth Streets, and M-TR-3e, Implement Tow-away Lanes on Fifth Street, which would serve to reduce delay associated with traffic congestion along the transit route. • Mitigation Measure M-TR-3c: Signalization and Intersection Restriping at Townsend/Fifth Streets. The SFMTA shall design and construct a new traffic signal at the intersection of 	

¹ SFMTA, *Real Estate and Facilities Vision for the 21st Century*, January 2013. Available at <http://archives.sfmta.com/cms/cmta/documents/1-29-13VisionReport.pdf>, accessed December 31, 2015.

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		<p>Townsend/Fifth Streets, and reconfigure the Townsend Street eastbound approach to provide one dedicated left-turn lane (with an exclusive left turn phase) adjacent to a through lane. This reconfiguration would require restriping of the two existing travel lanes at the eastbound approach to this intersection.</p> <p>Mitigation Measure M-TR-3d: Implement Tow-away Transit-only Lanes on Fifth Street. The SFMTA shall implement a northbound tow-away transit-only lane on Fifth Street between Townsend and Bryant Streets during the p.m. peak period to mitigate the impacts on transit travel times on the 47 Van Ness. This peak period transit-only lane can be implemented by restricting on-street parking (about 30 parking spaces) on the east side of Fifth Street between Townsend and Bryant Streets during the 3:00 to 7:00 p.m. peak period.</p>	
Impact TR-4: Development under the Plan, including the proposed open space improvements and street network changes, would not result in pedestrian safety hazards nor result in a substantial overcrowding on sidewalks or at corner locations, but would result in overcrowding at crosswalks.	S	<p>Mitigation Measure M-TR-4: Upgrade Central SoMa Area Crosswalks. Consistent with the proposed provisions of the Plan to establish a minimum width of crosswalks of 15 feet, and up to 40 feet where future pedestrian volumes warrant, as feasible, the SFMTA shall widen and restripe the crosswalks to the continental design, consistent with the <i>Better Streets Plan</i>.²</p> <p>With either the Howard/Folsom One-Way Option or Howard/Folsom Two-Way Option street network changes, the SFMTA shall monitor crosswalk operations for deteriorated conditions (i.e., crosswalk operating conditions of LOS E or LOS F, or observations of substantial crosswalk overcrowding), and, as feasible, widen the following crosswalks:</p> <ul style="list-style-type: none"> • At the intersection of Third/Mission, widen the east and west crosswalks to 20 feet. • At the intersection of Fourth/Mission, widen the east crosswalk to 40 feet, and widen the west crosswalk to 35 feet. • At the intersection of Fourth/Townsend, widen the west crosswalk to 30 feet. 	SUM

² Crosswalks with a continental design have parallel markings that are the most visible to drivers. Use of continental design for crosswalk marking also improves crosswalk detection for people with low vision and cognitive impairments. Available at http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/sidewalk2/sidewalks208.cfm, accessed October 2, 2014.

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Impact TR-5: Development under the Plan, including the proposed open space improvements and street network changes, would not result in potentially hazardous conditions for bicyclists, or otherwise substantially interfere with bicycle accessibility.	LTS	<p>Improvement Measure I-TR-5a: Cycle Track Public Education Campaign. To further reduce potential conflicts between bicyclists and pedestrians, transit and other vehicles, the SFMTA could develop and implement a cycle track public education campaign to develop safety awareness by providing information to the public through outreach channels such as media campaigns, brochures, and websites. This campaign would be in addition to the existing SFMTA bicycle safety outreach, specifically geared to Central SoMa and cycle tracks. Elements of the education campaign could include:</p> <ul style="list-style-type: none"> • Clarifying rules of the road for cycle tracks. • Improving pedestrian awareness about where to wait and how to cross the cycle track (i.e., on the sidewalk or buffer zone, rather than in the cycle track or adjacent to parked vehicles). • Providing bicycle-safety education for neighborhood schools (e.g., the Bessie Carmichael School), and neighborhood groups within Central SoMa. • Ensuring that the San Francisco Police Department officers are initially and repeatedly educated on traffic law as it applies to bicyclists and motorists. • Providing safety compliance education for bicyclists coupled with increased enforcement for violations by bicyclists. <p>The public education campaign could include a website, as well as instruction videos with information for cyclists, motorists, and pedestrians. To the extent possible, the public education campaign could be coordinated with the San Francisco Bicycle Coalition efforts.</p> <p>Improvement Measure I-TR-5b: Cycle Track Post-Implementation Surveys. Following implementation of the cycle tracks on Howard, Folsom, Brannan, Third and Fourth Streets, the SFMTA could conduct motorist, pedestrian, bicycle, and business surveys to understand how the cycle tracks are performing, and to make adjustments to the design and supplemental public education campaign. In addition to the user surveys, the post-implementation assessment could include before/after photos, bicyclist ridership and traffic volume counts, video analysis of behavior of bicyclists, pedestrians, and drivers, assessment of vehicle queuing, and compliance with new signs/signals. The information would be used as input for subsequent design and implementation of cycle tracks on other streets in San Francisco, as well as documenting the effectiveness of the cycle track.</p> <p>Mitigation: None required.</p>	NA

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Impact TR-6: Development under the Plan, including the proposed open space improvements and street network changes, would result in a reduction in on-street commercial loading supply such that the loading demand during the peak hour of loading activities would not be accommodated within on-street loading supply, would impact existing passenger loading/unloading zones, and may create hazardous conditions or significant delay that may affect transit, other vehicles, bicycles, or pedestrians.	S	<p>Mitigation Measure M-TR-6a: Driveway and Loading Operations Plan (DLOP). Sponsors of development projects that provide more than 100,000 square feet of residential or commercial uses shall prepare a DLOP, and submit the plan for review and approval by the Planning Department and the SFMTA in order to reduce potential conflicts between driveway operations, including loading activities, and pedestrians, bicycles and vehicles, and to maximize reliance of on-site loading spaces to accommodate new loading demand.</p> <p>Prior to preparing the DLOP, the project sponsor shall meet with the Planning Department and the SFMTA to review the proposed number, location, and design of the on-site loading spaces, as well as the projected loading demand. In the event that the number of on-site loading spaces does not accommodate the projected loading demand for the proposed development, the project sponsor shall pursue with the SFMTA conversion of nearby on-street parking spaces to commercial loading spaces, if determined feasible by the SFMTA.</p> <p>The DLOP shall be revised to reflect changes in accepted technology or operation protocols, or changes in conditions, as deemed necessary by the Planning Department and the SFMTA. The DLOP shall include the following components, as appropriate to the type of development and adjacent street characteristics:</p> <ul style="list-style-type: none"> • <i>Loading Dock Management.</i> To ensure that off-street loading facilities are efficiently used, and that trucks that are longer than can be safely accommodated are not permitted to use a building's loading dock, the project sponsor of a development project in the Plan Area shall develop a plan for management of the building's loading dock and shall ensure that tenants in the building are informed of limitations and conditions on loading schedules and truck size. The management plan could include strategies such as the use of an attendant to direct and guide trucks, installing a "Full" sign at the garage/loading dock driveway, limiting activity during peak hours, installation of audible and/or visual warning devices, and other features. Additionally, as part of the project application process, the project sponsor shall consult with the SFMTA concerning the design of loading and parking facilities. • <i>Garage/Loading Dock Attendant.</i> If warranted by project-specific conditions, the project sponsor of a development project in the Plan Area shall ensure that building management employs attendant(s) for the project's parking garage and/or loading dock, as applicable. The attendant would be stationed as determined by the project-specific review analysis, typically at the project's driveway to direct vehicles entering and exiting the building and avoid any safety-related conflicts with pedestrians on the sidewalk during the a.m. and p.m. peak periods of traffic, bicycle, and pedestrian activity, with extended hours as dictated by traffic, bicycle and pedestrian conditions and by activity in the project garage and loading dock. Each project shall also install audible and/or visible warning devices, or 	SUM

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		<p>comparably effective warning devices as approved by the Planning Department and/or the SFMTA, to alert pedestrians of the outbound vehicles from the parking garage and/or loading dock, as applicable.</p> <ul style="list-style-type: none"> • <i>Large Truck Access.</i> The loading dock attendant shall dictate the maximum size of truck that can be accommodated at the on-site loading area. In order to accommodate any large trucks (i.e., generally longer than 40 feet) that may require occasional access to the site (e.g., large move-in trucks that need occasional access to both residential and commercial developments), the DLOP shall include procedures as to the location of on-street accommodation, time of day restrictions for accommodating larger vehicles, and procedures to reserve available curbside space on adjacent streets from the SFMTA. • <i>Trash/Recycling/Compost Collection Design and Management.</i> When designs for buildings are being developed, the project sponsor or representative shall meet with the appropriate representative from Recology (or other trash collection firm) to determine the location and type of trash/recycling/compost bins, frequency of collections, and procedures for collection activities, including the location of Recology trucks during collection. The location of the trash/recycling/compost storage room(s) for each building shall be indicated on the building plans prior to submittal of plans to the Building Department. Procedures for collection shall ensure that the collection bins are not placed within any sidewalk, bicycle facility, parking lane or travel lane adjacent to the project site at any time. <p>Mitigation Measure M-TR-6b: Accommodation of On-Street Commercial Loading Spaces and Passenger Loading/Unloading Zones. The SFMTA shall develop detailed plans for each segment of the proposed street network changes that identify existing on-street commercial loading spaces and passenger loading/unloading zones, and then identify how demand within the existing loading facilities could be accommodated with the proposed street network changes. The detailed design shall also consider on-street loading supply needs for new development, as well as driveway access to loading facilities within existing and future buildings along the affected segments. The detailed design for each segment shall be prepared within a reasonable time frame of physical implementation to ensure that future land use conditions are reflected.</p> <p>As part of detailed design for each affected street the SFMTA shall conduct the following:</p> <ol style="list-style-type: none"> 1. Document the existing commercial loading spaces and passenger loading/unloading zones at the time of detailed design. 2. Conduct loading demand surveys/observation at appropriate times of day for each type of loading activity, to determine the actual demand associated with the on-street spaces and the need to replace or augment the on-street commercial loading spaces. 	

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		<p>3. Identify replacement commercial loading spaces and passenger loading/unloading spaces. Commercial loading spaces should be prioritized over parking spaces, and, to the extent feasible, the replacement commercial loading spaces shall be of similar length on the same block and side of the street. Where commercial loading spaces would be permanently removed, install new commercial loading spaces within 250 feet on adjacent side streets if feasible.</p> <p>4. At each location where passenger loading/unloading zones would be eliminated, contact the permit holder to determine adequacy of alternate locations and/or need for the passenger loading/unloading space. In some locations, such as schools and hotels, passenger loading/unloading activities could be accommodated within commercial loading spaces, with time of day restrictions.</p> <p>5. Conduct business surveys and review detailed plans with merchant associations or other local stakeholders to determine need for commercial loading spaces.</p> <p>6. Develop and implement a public education campaign regarding the street network changes, reduction or elimination of on-street parking spaces, location of replacement commercial loading spaces, and any time-of-day restrictions. On streets where on-street parking would be completely eliminated, provide information regarding commercial loading space supply on adjacent streets. In addition, provide information regarding <i>California Vehicle Code</i> §22500 and <i>San Francisco Transportation Code</i> §7.2.70 that loading activities (either truck or passenger loading/unloading) should not occur while stopped in any crosswalk, bicycle lane or travel lane.</p> <p>The SFMTA and the Planning Department shall develop protocols for ongoing assessment of commercial loading needs on the affected streets, and for review of new development projects along the affected street segments to identify needed changes to the street network design (e.g., when a new driveway to a development site is required), or need for additional on-street commercial loading spaces.</p> <p>In addition, the SFMTA shall explore the potential to develop and implement an off-hour delivery program to shift delivery windows for commercial deliveries to times when conflicts are less likely to occur. Such a program could be implemented as a pilot project, similar to the pilot project conducted in New York City in 2009–2010.³ Most commercial loading spaces in Central SoMa are metered, and the off-hour delivery program can include pricing to reduce the amount of time vehicles park, stand or stop at the curb, so that spaces turn over for more users, and double parking is minimized.</p>	

³ New York City Off-Hour Delivery Program. Available at <http://www.nyc.gov/html/dot/html/motorist/offhoursdelivery.shtml>, accessed August 16, 2016.

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Impact TR-7: Development under the Plan, including the proposed open space improvements and the street network changes, would not result in a substantial parking deficit that would create hazardous conditions or significant delays affecting transit, bicycles, or pedestrians, and where particular characteristics of the Plan demonstrably render use of other modes infeasible.	LTS	None required.	NA
Impact TR-8: Development under the Plan, including the proposed open space improvements and street network changes, could result in significant impacts on emergency vehicle access	S	<p>Mitigation Measure M-TR-8: Emergency Vehicle Access Consultation. During the design phase of each street network project, SFMTA shall consult with emergency service providers, including the San Francisco Fire Department and the San Francisco Police Department. Through the consultation process, the street network design shall be modified as needed to maintain emergency vehicle access. SFMTA shall identify design modifications through this process, as needed to meet the following performance criteria:</p> <ul style="list-style-type: none"> • No physical barriers shall be introduced that would preclude emergency vehicle access. <p>Street design modifications should achieve the goals of the project without precluding emergency vehicle access. Design modifications selected by SFMTA, as needed to meet the performance criteria, shall be incorporated into the final design of each street network project and could include, but shall not be limited to: mountable concrete buffers, mountable curbs and corner or sidewalk bulbs, modification of corner or sidewalk bulbs and curb locations to accommodate turning emergency vehicles, and emergency vehicle signal priority. Any subsequent changes to the streetscape designs shall be subject to a similar consultation process.</p>	LTSM

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Impact TR-9: Construction activities associated with development under the Plan, including the proposed open space improvements and street network changes, would result in substantial interference with pedestrian, bicycle, or vehicle circulation and accessibility to adjoining areas, and would result in potentially hazardous conditions.	S	<p>Mitigation Measure M-TR-9: Construction Management Plan and Construction Coordination.</p> <p><i>Construction Management Plan</i>—For projects within the Plan Area, the project sponsor shall develop and, upon review and approval by the SFMTA and Public Works, implement a Construction Management Plan, addressing transportation-related circulation, access, staging and hours of delivery. The Construction Management Plan would disseminate appropriate information to contractors and affected agencies with respect to coordinating construction activities to minimize overall disruption and ensure that overall circulation in the project area is maintained to the extent possible, with particular focus on ensuring transit, pedestrian, and bicycle connectivity. The Construction Management Plan would supplement and expand, rather than modify or supersede, and manual, regulations, or provisions set forth by the SFMTA, Public Works, or other City departments and agencies, and the California Department of Transportation.</p> <p>If construction of the proposed project is determined to overlap with nearby adjacent project(s) as to result in transportation-related impacts, the project sponsor or its contractor(s) shall consult with various City departments such as the SFMTA and Public Works through ISCOTT, and other interdepartmental meetings as deemed necessary by the SFMTA, Public Works, and the Planning Department, to develop a Coordinated Construction Management Plan. The Coordinated Construction Management Plan that shall address construction-related vehicle routing, detours, and maintaining transit, bicycle, vehicle, and pedestrian movements in the vicinity of the construction area for the duration of the construction period overlap. Key coordination meetings shall be held jointly between project sponsors and contractors of other projects for which the City departments determine construction impacts could overlap.</p> <p>The Construction Management Plan and, if required, the Coordinated Construction Management Plan, shall include, but not be limited to, the following:</p> <ul style="list-style-type: none"> • <i>Restricted Construction Truck Access Hours</i>—Limit construction truck movements to the hours between 9:00 a.m. and 4:00 p.m., or other times if approved by the SFMTA, to minimize disruption to vehicular traffic, including transit during the a.m. and p.m. peak periods. • <i>Construction Truck Routing Plans</i>—Identify optimal truck routes between the regional facilities and the project site, taking into consideration truck routes of other development projects and any construction activities affecting the roadway network. • <i>Coordination of Temporary Lane and Sidewalk Closures</i>—The project sponsor shall coordinate travel lane closures with other projects requesting concurrent lane and sidewalk closures through the ISCOTT and interdepartmental meetings process above, to minimize the extent and duration of requested lane and sidewalk closures. Travel lane closures shall be minimized especially along transit and 	SUM

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		<p>bicycle routes, so as to limit the impacts to transit service and bicycle circulation and safety.</p> <ul style="list-style-type: none"> • <i>Maintenance of Transit, Vehicle, Bicycle, and Pedestrian Access</i>—The project sponsor/construction contractor(s) shall meet with Public Works, SFMTA, the Fire Department, Muni Operations and other City agencies to coordinate feasible measures to include in the Coordinated Construction Management Plan to maintain access for transit, vehicles, bicycles and pedestrians. This shall include an assessment of the need for temporary transit stop relocations or other measures to reduce potential traffic, bicycle, and transit disruption and pedestrian circulation effects during construction of the project. • <i>Carpool, Bicycle, Walk and Transit Access for Construction Workers</i>—The construction contractor shall include methods to encourage carpooling, bicycling, walk and transit access to the project site by construction workers (such as providing transit subsidies to construction workers, providing secure bicycle parking spaces, participating in free-to-employee ride matching program from www.511.org, participating in emergency ride home program through the City of San Francisco (www.sferh.org), and providing transit information to construction workers). • <i>Construction Worker Parking Plan</i>—The location of construction worker parking shall be identified as well as the person(s) responsible for monitoring the implementation of the proposed parking plan. The use of on-street parking to accommodate construction worker parking shall be discouraged. All construction bid documents shall include a requirement for the construction contractor to identify the proposed location of construction worker parking. If on-site, the location, number of parking spaces, and area where vehicles would enter and exit the site shall be required. If off-site parking is proposed to accommodate construction workers, the location of the off-site facility, number of parking spaces retained, and description of how workers would travel between off-site facility and project site shall be required. • <i>Project Construction Updates for Adjacent Businesses and Residents</i>—To minimize construction impacts on access for nearby institutions and businesses, the project sponsor shall 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. At regular intervals to be defined in the Construction Management Plan and, if necessary, in the Coordinated Construction Management Plan, a regular email notice shall be distributed by the project sponsor that shall provide current construction information of interest to neighbors, as well as contact information for specific construction inquiries or concerns. 	

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Impact C-TR-1: Development under the Plan, including the proposed open space improvements and the street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in significant impacts related to VMT.	LTS	None required.	NA
Impact C-TR-2: Development under the Plan, including the proposed open space improvements and the street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in significant impacts related to traffic hazards.	LTS	None required.	NA
Impact C-TR-3: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would contribute considerably to significant cumulative transit impacts on local and regional transit providers.	S	Implement Mitigation Measures M-TR-3a, Transit Enhancements; M-TR-3b, Boarding Improvements; M-TR-3c, Signalization and Intersection Restriping at Townsend/Fifth Streets; and M-TR-3d, Implement Tow-away Transit-only Lanes on Fifth Street.	SUM
Impact C-TR-4: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would contribute considerably to significant cumulative pedestrian impacts.	S	Implement Mitigation Measure M-TR-4, Upgrade Central SoMa Crosswalks.	SUM

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Impact C-TR-5: Development under the Plan, including the proposed open space improvements and the street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in cumulative bicycle impacts.	LTS	None required.	NA
Impact C-TR-6: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would contribute considerably to significant cumulative loading impacts.	S	Implement Mitigation Measure M-TR-6a, Driveway and Loading Operations Plan , and Mitigation Measure M-TR-6b, Accommodation of On-Street Commercial Loading Spaces and Passenger Loading/Unloading Zones .	SUM
Impact C-TR-7: Development under the Plan, including the proposed open space improvements and the street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in cumulative parking impacts.	LTS	None required.	NA
Impact C-TR-8: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, could contribute considerably to significant cumulative emergency vehicle access impacts.	S	Implement Mitigation Measure M-TR-8, Emergency Vehicle Access Consultation .	LTSM

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Impact C-TR-9: Development under the Plan, including the proposed open space improvements and the street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in significant cumulative construction-related transportation impacts.	LTS	None required.	NA
E. Noise and Vibration			
Impact NO-1: Development under the Plan, including the proposed street network changes, would generate noise that would result in exposure of persons to noise levels in excess of standards in the <i>San Francisco General Plan</i> or Noise Ordinance (Article 29 of the <i>Police Code</i>), and would result in a substantial permanent increase in ambient noise above existing levels.	S	Mitigation Measure M-NO-1a: Transportation Demand Management for New Development Projects. To reduce vehicle noise from subsequent development projects in the Plan Area, the project sponsor and subsequent property owners shall develop and implement a TDM Plan as part of project approval. The scope and number of TDM measures included in the TDM Plan shall be in accordance with Planning Department's TDM Program Standards for the type of development proposed, and accompanying appendices. ⁴ The TDM Program Standards and accompanying appendices are expected to be refined as planning for the proposed TDM Ordinance continues. Each subsequent development project's TDM Plan shall conform to the most recent version of the TDM Program Standards and accompanying appendices available at the time of the project Approval Action, as defined in Section 31.04(h) of the <i>San Francisco Administrative Code</i> . The Planning Department shall review and approve the TDM Plan, as well as any subsequent revisions to the TDM Plan. The TDM Plan shall target a reduction in the vehicle miles traveled (VMT) rate (i.e., VMT per capita), monitor and evaluate project performance (actual VMT), and adjust TDM measures over time to attempt to meet VMT target reduction. This measure is applicable to all projects within the Plan Area that do not otherwise qualify for an exemption under Article 19 of the CEQA Guidelines. This measure may be superseded if a comparable TDM Ordinance is adopted that applies to projects in the Plan Area. The TDM Plan shall be developed by the project sponsor for each particular development project, and shall aim to achieve the maximum VMT rate reduction feasible. The TDM Plan shall be developed in consultation with the Planning Department and rely generally on implementation of measures listed in <i>Updating Transportation Impacts Analysis in the CEQA Guidelines</i>	SUM

⁴ San Francisco Planning Department, *Draft TDM Program Standards*, July 2016, and accompanying appendices. The most up-to-date *Draft TDM Program Standards* and accompanying appendices are available online at: <http://sf-planning.org/tdm-materials-and-resources>. Accessed on September 19, 2016.

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		<p>document published by California Office of Planning and Research on August 6, 2014, or whatever document supersedes it, and the Planning Department TDM Program Standards and accompanying appendices in effect at the time of the Project Approval Action. The TDM program may include, but is not limited to the types of measures, which are summarized below for explanatory example purposes. Actual development project TDM measures shall be applied from the TDM Program Standards and accompanying appendices, which describe the scope and applicability of candidate measures in detail:</p> <ol style="list-style-type: none"> 1. Active Transportation: Provision of streetscape improvements to encourage walking, secure bicycle parking, shower and locker facilities for cyclists, subsidized bike share memberships for project occupants, bicycle repair and maintenance services, and other bicycle-related services 2. Car-Share: Provision of car-share parking spaces and subsidized memberships for project occupants 3. Delivery: Provision of amenities and services to support delivery of goods to project occupants 4. Family-Oriented Measures: Provision of on-site childcare and other amenities to support the use of sustainable transportation modes by families 5. High-Occupancy Vehicles: Provision of carpooling/vanpooling incentives and shuttle bus service 6. Information: Provision of multimodal wayfinding signage, transportation information displays, and tailored transportation marketing services 7. Land Use: Provision of on-site affordable housing and healthy food retail services in underserved areas 8. Parking: Provision of unbundled parking, short-term daily parking provision, parking cash out offers, and reduced off-street parking supply. <p>Mitigation Measure M-NO-1b: Siting of Noise-Generating Uses. To reduce potential conflicts between existing sensitive receptors and new noise-generating uses, for new development including PDR, Places of Entertainment, or other uses that would potentially generate noise levels substantially in excess of ambient noise (either short-term during the nighttime hours, or as a 24-hour average), the Planning Department shall require the preparation of a noise 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 so as to be able to accurately describe maximum levels reached during nighttime hours), 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 not adversely affect nearby noise-sensitive uses, and that there are no particular circumstances about the proposed</p>	

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		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, and the incorporation of noise reduction measures as recommended by the noise assessment.	
Impact NO-2: Development under the Plan, including the proposed street network changes and open space improvements, would result in construction activities in the Plan Area that could expose persons to substantial temporary or periodic increases in noise levels substantially in excess of ambient levels.	S	<p>Mitigation Measure M-NO-2a: General Construction Noise Control Measures. To ensure that project noise from construction activities is reduced to the maximum extent feasible, the project sponsor of a development project in the Plan Area that is within 100 feet of noise-sensitive receptors shall undertake the following:</p> <ul style="list-style-type: none"> Require the general contractor to ensure that equipment and trucks used for project construction utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds), wherever feasible. Require the general contractor to locate stationary noise sources (such as compressors) as far from adjacent or nearby sensitive receptors as possible, to muffle such noise sources, and to construct barriers around such sources and/or the construction site, which could reduce construction noise by as much as 5 dBA. To further reduce noise, the contractor shall locate stationary equipment in pit areas or excavated areas, if feasible. Require the general contractor to use impact tools (e.g., jack hammers, pavement breakers, and rock drills) that are hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used, along with external noise jackets on the tools, which could reduce noise levels by as much as 10 dBA. Include noise control requirements in specifications provided to construction contractors. Such requirements could include, but are not limited to, performing all work in a manner that minimizes noise to the extent feasible; use of equipment with effective mufflers; undertaking the most noisy activities during times of least disturbance to surrounding residents and occupants, as feasible; and selecting haul routes that avoid residential buildings to the extent that such routes are otherwise feasible. Prior to the issuance of each building permit, along with the submission of construction documents, submit to the Planning Department and Department of Building Inspection (DBI) a list of measures that shall be implemented and that shall respond to and track complaints pertaining to construction 	SUM

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		<p>noise. These measures shall include (1) a procedure and phone numbers for notifying DBI and the Police Department (during regular construction hours and off-hours); (2) a sign posted on-site describing noise complaint procedures and a complaint hotline number that shall be answered at all times during construction; (3) designation of an on-site construction complaint and enforcement manager for the project; and (4) notification of neighboring residents and non-residential building managers within 300 feet of the project construction area at least 30 days in advance of extreme noise generating activities (defined as activities generating anticipated noise levels of 80 dBA or greater without noise controls, which is the standard in the <i>Police Code</i>) about the estimated duration of the activity.</p> <p>Mitigation Measure M-NO-2b: Noise and Vibration Control Measures during Pile Driving. For individual projects that require pile driving, a set of site-specific noise attenuation measures shall be prepared under the supervision of a qualified acoustical consultant. These attenuation measures shall be included in construction of the project and shall include as many of the following control strategies, and any other effective strategies, as feasible:</p> <ul style="list-style-type: none"> • The project sponsor of a development project in the Plan Area shall require the construction contractor to erect temporary plywood or similar solid noise barriers along the boundaries of the project site to shield potential sensitive receptors and reduce noise levels; • The project sponsor of a development project in the Plan Area shall require the construction contractor to implement “quiet” pile-driving technology (such as pre-drilling of piles, sonic pile drivers, and the use of more than one pile driver to shorten the total pile driving duration), where feasible, with consideration of geotechnical and structural requirements and soil conditions (including limiting vibration levels to the FTA’s 0.5 inches per second, PPV to minimize architectural damage to adjacent structures); • The project sponsor of a development project in the Plan Area shall require the construction contractor to monitor the effectiveness of noise attenuation measures by taking noise measurements, at a distance of 100 feet, at least once per day during pile-driving; and • The project sponsor of a development project in the Plan Area shall require that the construction contractor limit pile driving activity to result in the least disturbance to neighboring uses. 	

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Impact NO-3: Development under the Plan, including the proposed street network changes, would result in construction activities that could expose persons to temporary increases in vibration substantially in excess of ambient levels.	S	Implement Mitigation Measures M-NO-2b, Noise and Vibration Control Measures during Pile Driving, M-CP-3a, Protect Historical Resources from Adjacent Construction Activities, and M-CP-3b, Construction Monitoring Program for Historical Resources.	LTSM
Impact C-NO-1: Development under the Plan, including the proposed street network changes and open space improvements, in combination with past, present, and reasonably foreseeable future projects, would result in cumulative noise impacts.	S	Implement Mitigation Measure M-NO-1a, Transportation Demand Management for New Development Projects and Mitigation Measure M-NO-1b, Siting of Noise-Generating Uses.	SUM
F. Air Quality			
Impact AQ-1: Development under the Plan, including the proposed open space improvements and proposed street network changes, would not conflict with or obstruct implementation of the <i>2010 Clean Air Plan</i> .	LTS	None required.	NA
Impact AQ-2: The Plan would not violate an air quality standard or contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard.	LTS	None required.	NA

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Impact AQ-3: Operation of subsequent individual development projects in the Plan Area and street network changes, but not proposed open space improvements, would violate an air quality standard, contribute to an existing or projected air quality violation, and/or result in a cumulatively considerable net increase of criteria pollutants for which the project region is in nonattainment under an applicable federal or State ambient air quality standard.	S	<p>Implement Mitigation Measure M-NO-1a, Transportation Demand Management (TDM) for Development Projects. (see Noise Impact NO-1a in this Summary Table)</p> <p>Mitigation Measure M-AQ-3a: Education for Residential and Commercial Tenants Concerning Low-VOC Consumer Products. Prior to receipt of any building permit and every five years thereafter, the project sponsor shall develop electronic correspondence to be distributed by email or posted on-site annually to tenants of the project that encourages the purchase of consumer products and paints that are better for the environment and generate less VOC emissions. The correspondence shall encourage environmentally preferable purchasing and shall include contact information and links to SF Approved.⁵</p> <p>Mitigation Measure M-AQ-3b: Reduce Operational Emissions. Proposed projects that would exceed the criteria air pollutant thresholds in this EIR shall implement the additional measures, as applicable and feasible, to reduce operational criteria air pollutant emissions. Such measures may include, but are not limited to, the following:</p> <ul style="list-style-type: none"> • For any proposed refrigerated warehouses or large (greater than 20,000 square feet) grocery retailers, provide electrical hook-ups for diesel trucks with Transportation Refrigeration Units at the loading docks. • Use low- and super-compliant VOC architectural coatings in maintaining buildings. “Low-VOC” refers to paints that meet the more stringent regulatory limits in South Coast Air Quality Management District Rule 1113; however, many manufacturers have reformulated to levels well below these limits. These are referred to as “Super-Compliant” architectural coatings. • Implement Mitigation Measure M-AQ-5a, Best Available Control Technology for Diesel Generators and Fire Pumps. • Other measures that are shown to effectively reduce criteria air pollutant emissions onsite or offsite if emissions reductions are realized within the SFBAAB. Measures to reduce emissions onsite are preferable to offsite emissions reductions. 	SUM

⁵ SF Approved (sfapproved.org) is administrated by the San Francisco Department of Environment staff, who identifies products and services that are safer and better for the environment (e.g., those that are listed as “Required” or “Suggested”).

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Impact AQ-4: Development under the Plan, but not the proposed street network changes and open space improvements, would result in construction activities that could violate an air quality standard, contribute to an existing or projected air quality violation, or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard.	S	<p>Mitigation Measure M-AQ-4a: Construction Emissions Analysis. Subsequent development projects that do not meet the applicable screening levels or that the Planning Department otherwise determines could exceed one or more significance thresholds for criteria air pollutants shall undergo an analysis of the project's construction emissions. If no significance thresholds are exceeded, no further mitigation is required. If one or more significance thresholds are exceeded, Mitigation Measure M-AQ-4b would be applicable to the project.</p> <p>Mitigation Measure M-AQ-4b: Construction Emissions Minimization Plan. If required based on the analysis described in Mitigation Measure M-AQ-4a or as required in Impact AQ-6 the project sponsor shall submit a Construction Emissions Minimization Plan (Plan) to the Environmental Review Officer (ERO) for review and approval by an Environmental Planning Air Quality Specialist. The Plan shall be designed to reduce air pollutant emissions to the greatest degree practicable.</p> <p>The Plan shall detail project compliance with the following requirements:</p> <ol style="list-style-type: none"> 1. All off-road equipment greater than 25 horsepower and operating for more than 20 total hours over the entire duration of construction activities shall meet the following requirements: <ol style="list-style-type: none"> a) Where access to alternative sources of power is available, portable diesel engines shall be prohibited; b) All off-road equipment shall have: <ol style="list-style-type: none"> i. Engines that meet or exceed either U.S. Environmental Protection Agency or California Air Resources Board Tier 2 off-road emission standards (or Tier 3 off-road emissions standards if NO_x emissions exceed applicable thresholds), <i>and</i> ii. Engines that are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy (VDECS)⁶, <i>and</i> iii. Engines shall be fueled with renewable diesel (at least 99 percent renewable diesel or R99). c) Exceptions: <ol style="list-style-type: none"> i. Exceptions to 1(a) may be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that an alternative source of power is limited or infeasible at the project site and that the requirements of this exception provision apply. 	LTSM

⁶ Equipment with engines meeting Tier 4 Interim or Tier 4 Final emission standards automatically meet this requirement, therefore VDECS would not be required.

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Impact	Level of Significance Before Mitigation	Mitigation and Improvement Measures	Level of Significance After Mitigation									
		<p>Under this circumstance, the sponsor shall submit documentation of compliance with 1(b) for onsite power generation.</p> <p>ii. Exceptions to 1(b)(ii) may be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that a particular piece of off-road equipment with an ARB Level 3 VDECS (1) is technically not feasible, (2) would not produce desired emissions reductions due to expected operating modes, (3) installing the control device would create a safety hazard or impaired visibility for the operator, or (4) there is a compelling emergency need to use off-road equipment that are not retrofitted with an ARB Level 3 VDECS and the sponsor has submitted documentation to the ERO that the requirements of this exception provision apply. If granted an exception to 1(b)(ii), the project sponsor shall comply with the requirements of 1(c)(iii).</p> <p>iii. If an exception is granted pursuant to 1(c)(ii), the project sponsor shall provide the next-cleanest piece of off-road equipment as provided by the step down schedule in Table M-AQ-4:</p> <p>TABLE M-AQ-4B OFF-ROAD EQUIPMENT COMPLIANCE STEP-DOWN SCHEDULE*</p> <table><tr><th>Compliance Alternative</th><th>Engine Emission Standard</th><th>Emissions Control</th></tr><tr><td>1</td><td>Tier 2**</td><td>ARB Level 2 VDECS</td></tr><tr><td>2</td><td>Tier 2</td><td>ARB Level 1 VDECS</td></tr></table> <p>* How to use the table. If the requirements of 1(b) cannot be met, then the project sponsor would need to meet Compliance Alternative 1. Should the project sponsor not be able to supply off-road equipment meeting Compliance Alternative 1, then Compliance Alternative 2 would need to be met.</p> <p>** Tier 3 off road emissions standards are required if NO_x emissions exceed applicable thresholds.</p> <p>iv. Exceptions to 1(b)(iii) may be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that a renewable diesel is not commercially available in the SFBAAB. If an exception is granted pursuant to this section, the project sponsor shall provide another type of alternative fuel, such as biodiesel (B20 or higher).</p> <p>2. The project sponsor shall require the idling time for off-road and on-road equipment be limited to no more than two minutes, except as provided in exceptions to the applicable State regulations</p>	Compliance Alternative	Engine Emission Standard	Emissions Control	1	Tier 2**	ARB Level 2 VDECS	2	Tier 2	ARB Level 1 VDECS	
Compliance Alternative	Engine Emission Standard	Emissions Control										
1	Tier 2**	ARB Level 2 VDECS										
2	Tier 2	ARB Level 1 VDECS										

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		<p>regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, Chinese) in designated queuing areas and at the construction site to remind operators of the two minute idling limit.</p> <p>3. The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications.</p> <p>4. The Plan shall include estimates of the construction timeline by phase with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information may include, but is not limited to, equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation. For the VDECS installed: technology type, serial number, make, model, manufacturer, ARB verification number level, and installation date and hour meter reading on installation date. For off-road equipment not using renewable diesel, reporting shall indicate the type of alternative fuel being used.</p> <p>5. The Plan shall be kept on-site and available for review by any persons requesting it and a legible sign shall be posted at the perimeter of the construction site indicating to the public the basic requirements of the Plan and a way to request a copy of the Plan. The project sponsor shall provide copies of Plan as requested.</p> <p>6. <i>Reporting.</i> Quarterly reports shall be submitted to the ERO indicating the construction phase and off-road equipment information used during each phase including the information required in Paragraph 4, above. In addition, for off-road equipment not using renewable diesel, reporting shall indicate the type of alternative fuel being used.</p> <p>Within six months of the completion of construction activities, the project sponsor shall submit to the ERO a final report summarizing construction activities. The final report shall indicate the start and end dates and duration of each construction phase. For each phase, the report shall include detailed information required in Paragraph 4. In addition, for off-road equipment not using renewable diesel, reporting shall indicate the type of alternative fuel being used.</p> <p>7. <i>Certification Statement and On-site Requirements.</i> Prior to the commencement of construction activities, the project sponsor shall certify (1) compliance with the Plan, and (2) all applicable requirements of the Plan have been incorporated into contract specifications.</p>	

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Impact	Level of Significance Before Mitigation	Mitigation and Improvement Measures	Level of Significance After Mitigation
Impact AQ-5: Development under the Plan, including proposed street network changes, would result in operational emissions of fine particulate matter (PM _{2.5}) and toxic air contaminants that would result in exposure of sensitive receptors to substantial pollutant concentrations.	S	<p>Implement Mitigation Measure M-NO-1a, Transportation Demand Management (TDM) for Development Projects. (see Noise Impact NO-1a in this Summary Table)</p> <p>Mitigation Measure M-AQ-5a: Best Available Control Technology for Diesel Generators and Fire Pumps. All diesel generators and fire pumps shall have engines that (1) meet Tier 4 Final or Tier 4 Interim emission standards, or (2) meet Tier 2 emission standards and are equipped with a California Air Resources Board Level 3 Verified Diesel Emissions Control Strategy. All diesel generators and fire pumps shall be fueled with renewable diesel, R99, if commercially available. For each new diesel backup generator or fire pump permit submitted for the project, including any associated generator pads, engine and filter specifications shall be submitted to the San Francisco Planning Department for review and approval prior to issuance of a permit for the generator or fire pump from the San Francisco Department of Building Inspection. Once operational, all diesel backup generators and Verified Diesel Emissions Control Strategy shall be maintained in good working order in perpetuity and any future replacement of the diesel backup generators, fire pumps, and Level 3 Verified Diesel Emissions Control Strategy filters shall be required to be consistent with these emissions specifications. The operator of the facility shall maintain records of the testing schedule for each diesel backup generator and fire pump for the life of that diesel backup generator and fire pump and provide this information for review to the Planning Department within three months of requesting such information.</p> <p>Mitigation Measure M-AQ-5b: Siting of Uses that Emit Particulate Matter (PM_{2.5}), Diesel Particulate Matter, or Other Toxic Air Contaminants. To minimize potential exposure of sensitive receptors to diesel particulate matter or substantial levels of toxic air contaminants as part of everyday operations from stationary or area sources (other than the sources listed in M-AQ-5a), the San Francisco Planning Department shall require, during the environmental review process of such projects, but not later than the first project approval action, the preparation of an analysis by a qualified air quality specialist that includes, at a minimum, a site survey to identify residential or other sensitive receptors within 1,000 feet of the project site. For purposes of this measure, sensitive receptors are considered to include housing units; child care centers; schools (high school age and below); and inpatient health care facilities, including nursing or retirement homes and similar establishments. The assessment shall also include an estimate of emissions of toxic air contaminants from the source and shall identify all feasible measures to reduce emissions. These measures shall be incorporated into the project prior to the first approval action.</p> <p>Mitigation Measure M-AQ-5c: Update Air Pollution Exposure Zone for San Francisco Health Code Article 38. The Department of Public Health is required to update the Air Pollution Exposure Zone Map</p>	SUM

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Impact	Level of Significance Before Mitigation	Mitigation and Improvement Measures	Level of Significance After Mitigation
		in <i>San Francisco Health Code</i> Article 38 at least every five years. The Planning Department shall coordinate with the Department of Public Health to update the Air Pollution Exposure Zone taking into account updated health risk methodologies and traffic generated by the Central SoMa Plan. Mitigation Measure M-AQ-5d: Land Use Buffers around Active Loading Docks. Locate sensitive receptors as far away as feasible from truck activity areas including loading docks and delivery areas.	
Impact AQ-6: Development under the Plan, including proposed open space improvements and street network changes, would result in construction activities that could expose sensitive receptors to substantial levels of fine particulate matter (PM _{2.5}) and toxic air contaminants generated by construction equipment.	S	Mitigation Measure M-AQ-6a: Construction Emissions Minimization Plan. All projects within the Air Pollutant Exposure Zone and newly added Air Pollutant Exposure Zone lots identified in Figure IV.F-2 shall comply with M-AQ-4b, Construction Emissions Minimization Plan. Mitigation Measure M-AQ-6b: Implement Clean Construction Requirements. Construction of street network changes and open space improvements adjacent to newly added air pollution exposure zone lots identified in Figure IV.F-2 shall comply with the Clean Construction requirements for projects located within the APEZ.	LTSM
Impact AQ-7: Implementation of the Plan would not expose a substantial number of people to objectionable odors affecting a substantial number of people.	LTS	None required.	NA
Impact C-AQ-1: Development under the Plan, including proposed street network changes, but not open space improvements, in combination with past, present, and reasonably foreseeable future projects in the vicinity, under cumulative 2040 conditions, would contribute considerably to criteria air pollutant impacts.	S	Implement Mitigation Measures M-NO-1a, Transportation Demand Management (TDM) for Development Projects , in Section IV.E, Noise and Vibration, and M-AQ-3a, Education for Residential and Commercial Tenants Concerning Low-VOC Consumer Products , M-AQ-3b, Reduce Operational Emissions , and M-AQ-5a, Best Available Control Technology for Diesel Generators and Fire Pumps ; M-AQ-4a, Construction Emissions Minimization ; and M-AQ-4b, Construction Emissions Reduction Plan .	SUM

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Impact	Level of Significance Before Mitigation	Mitigation and Improvement Measures	Level of Significance After Mitigation
Impact C-AQ-2: Development under the Plan, including the proposed street network changes, but not open space improvements, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would result in exposure of sensitive receptors to substantial levels of fine particulate matter (PM _{2.5}) and toxic air contaminants under 2040 cumulative conditions.	S	<p>Implement Mitigation Measure M-NO-1a, Transportation Demand Management (TDM) for Development Projects. (see Noise Impact NO-1a in this Summary Table)</p> <p>Implement Mitigation Measures M-AQ-4b, Construction Emissions Minimization Plan, M-AQ-5a, Best Available Control Technology for Diesel Generators and Fire Pumps, M-AQ-5b, Siting of Uses that Emit Particulate Matter (PM_{2.5}), Diesel Particulate Matter, or Other Toxic Air Contaminants, M-AQ-5c, Update Air Pollution Exposure Zone for San Francisco Health Code Article 38, and Mitigation Measure M-AQ-6b, Implement Clean Construction Requirements. As discussed above, the Department of Public Health is required to update the Air Pollutant Exposure Zone map at least every five years in accordance with <i>San Francisco Health Code</i> Article 38. The updated mapping would capture parcels that could be added to the APEZ as a result of future traffic. Mitigation Measures M-AQ-4b, M-AQ-5a, and M-AQ-6b would apply to the Air Pollutant Exposure Zone of <i>San Francisco Health Code</i> Article 38 in effect at the time subsequent development projects are proposed.</p>	SUM
G. Wind			
Impact WI-1: Subsequent future development anticipated under the Plan could alter wind in a manner that substantially affects public areas.	S	<p>Mitigation Measure M-WI-1: Wind Hazard Criterion for the Plan Area. In portions of the Central SoMa Plan area outside the C-3 Use Districts, projects proposed at a roof height greater than 85 feet shall be evaluated by a qualified wind expert as to their potential to result in a new wind hazard exceedance or aggravate an existing pedestrian-level wind hazard exceedance (defined as the one-hour wind hazard criterion of 26 miles per hour equivalent wind speed). If the qualified expert determines that wind-tunnel testing is required due to the potential for a new or worsened wind hazard exceedance, the project shall adhere to the following standards for reduction of ground-level wind speeds in areas of substantial pedestrian use:</p> <ul style="list-style-type: none"> • New buildings and additions to existing buildings shall be shaped (e.g., include setbacks, or other building design techniques), or other wind baffling measures shall be implemented, so that the development would result in the following with respect to the one-hour wind hazard criterion of 26 miles per hour equivalent wind speed: <ul style="list-style-type: none"> ◦ No net increase, compared to existing conditions, in the overall number of hours during which the wind hazard criterion is exceeded (the number of exceedance locations may change, allowing for both new exceedances and elimination of existing exceedances, as long as there is no net increase in the number of exceedance locations), based on wind-tunnel testing of a representative number of locations proximate to the project site; OR 	SUM

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Impact	Level of Significance Before Mitigation	Mitigation and Improvement Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> Any increase in the overall number of hours during which the wind hazard criterion is exceeded shall be evaluated in the context of the overall wind effects of anticipated development that is in accordance with the Plan. Such an evaluation shall be undertaken if the project contribution to the wind hazard exceedance at one or more locations relatively distant from the individual project site is minimal and if anticipated future Plan area development would substantively affect the wind conditions at those locations. The project and foreseeable development shall ensure that there is no increase in the overall number of hours during which the wind hazard criterion is exceeded. New buildings and additions to existing buildings that cannot meet the one-hour wind hazard criterion of 26 miles per hour equivalent wind speed performance standard of this measure based on the above analyses, shall minimize to the degree feasible the overall number of hours during which the wind hazard criterion is exceeded. 	
Impact C-WI-1: Development under the Plan, combined with past, present, and reasonably foreseeable future projects, would not result in cumulative significant impacts related to wind.	LTS	None required.	NA
H. Shadow			
Impact SH-1: Development under the Plan would not create new shadow in a manner that substantially affects existing outdoor recreation facilities or other public areas.	LTS	None required.	NA
Impact C-SH-1: Implementation of the Plan, in combination with past, present and reasonably foreseeable future projects in the vicinity, would not contribute considerably to a significant cumulative impact on shadow conditions.	LTS	None required.	NA

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I. Hydrology and Water Quality (Combined Sewer System and Sea Level Rise)			
Impact HY-6: Development under the Plan, including the proposed open space improvements and street network changes, would not exacerbate future flood hazards in a manner that could expose people or structures to a significant risk of loss, injury, or death.	LTS	None required.	NA
Impact C-HY-2: Operation of individual development projects through implementation of the Plan, in combination with past, present, and foreseeable future development in San Francisco, would not exceed the wastewater treatment requirements of the Southeast Treatment Plant (SEP); violate water quality standards or waste discharge requirements; otherwise substantially degrade water quality; or result in an increase in the frequency of combined sewer discharges from the City's combined sewer system.	LTS	None required.	NA
Impact C-HY-3: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable future projects, would not exacerbate future flood hazards that could expose people or structures to a significant risk of loss, injury, or death.	LTS	None required.	NA

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Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Land Use and Land Use Planning			
None.			
Aesthetics			
None.			
Population and Housing			
PH-1: Development under the Plan and proposed street network changes would not induce substantial population growth, either directly or indirectly.	LTS	None required.	NA
PH-2: Development under the Plan and proposed street network changes would not generate housing demand beyond projected housing forecasts.	LTS	None required.	NA
PH-3: Development under the Plan and proposed street network changes would not displace a large number of housing units or people or necessitate the construction of replacement housing outside of the Plan Area.	LTS	None required.	NA
C-PH-1: Development under the Plan and proposed street network changes would not make a considerable contribution to any cumulative impact on population or housing.	LTS	None required.	NA
Cultural Resources			
None.			
Transportation and Circulation			
None.			
Noise			
None.			

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Air Quality			
None.			
Greenhouse Gas Emissions			
C-GG-1: The Plan and development pursuant to the Plan would generate greenhouse gas emissions, but not at levels that would result in a significant impact on the environment or conflict with the City's GHG reduction strategy, <i>Plan Bay Area</i> , or AB 32, and would not result in cumulatively considerable GHG emissions.	LTS	None required.	NA
C-GG-2: The proposed street network changes and open space improvements would generate greenhouse gas emissions during construction, but not at levels that would result in a significant impact on the environment, and the proposed changes would be consistent with the City's GHG Reduction Strategy, <i>Plan Bay Area</i> , and the AB 32 Scoping Plan. The proposed street network changes and open spaces therefore would not result in cumulatively considerable GHG emissions.	LTS	None required.	NA
Wind and Shadow			
None.			

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Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Recreation and Public Space			
RE-1: Development under the Plan, and the proposed street network changes would result in an increase in the use of existing parks and recreational facilities, but would not result in substantial deterioration or physical degradation of such facilities, and would result in the expansion of recreational facilities and enhance existing recreational resources.	LTS	None required.	NA
C-RE-1: Development under the Plan and the proposed street network changes, in combination with other past, present, or reasonably foreseeable projects would not result in a considerable contribution to cumulative impacts on recreational resources.	LTS	None required.	NA
Utilities and Service Systems			
UT-1: Development under the Plan and proposed street network changes would not require or result in the construction of substantial new water treatment facilities and the City would have sufficient water supply available from existing entitlements.	LTS	None required.	NA
UT-2: Development under the Plan could require or result in the expansion or construction of new wastewater treatment or stormwater facilities, exceed capacity of the wastewater treatment provider when combined with other commitments, or exceed the wastewater treatment requirements of the Regional Water Quality Control Board.	LTS for impacts from street network changes and open space improvements. See Table S-1 for impacts from subsequent development projects.	None required for the proposed street network changes or open space improvements. See Table S-1 for impacts from subsequent development projects.	NA for street network changes and open space improvements. See Table S-1 for conclusions regarding impacts from development projects.

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Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
UT-3: Development under the Plan and proposed street network changes would continue to be served by a landfill with sufficient permitted capacity to accommodate solid waste generated by subsequent development in the Plan Area and would comply with federal, state, and local statutes and regulations related to solid waste.	LTS	None required.	NA
C-UT-1: Development under the Plan and proposed street network changes, in combination with past, present, and reasonably foreseeable future projects in the vicinity, could contribute considerably to a significant cumulative impact on wastewater facilities, but would not contribute to cumulative impacts on other utilities and services.	LTS for water supply and landfill capacity. See Table S-1 for impacts to wastewater facilities.	None required for water supply and landfill capacity See Table S-1 for impacts to wastewater facilities.	NA for water supply and landfill capacity. See Table S-1 for impacts to wastewater facilities
Public Services			
PS-1: Development under the Plan and proposed street network changes would not increase the demand for police service or fire protection service such that new or physically altered facilities, the construction of which could cause significant environmental impacts, would be required in order to maintain acceptable levels of service.	LTS	None required.	NA
PS-2: Development under the Plan and proposed street network changes would not directly or indirectly generate school students and increase enrollment in public schools such that new or physically altered facilities would be required.	LTS	None required.	NA

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C-PS-1: Development under the Plan and proposed street network changes, combined with past, present, and reasonably foreseeable future projects in the vicinity, would not result in a considerable contribution to cumulative impacts on police, fire, and school district services such that new or physically altered facilities, the construction of which could cause significant environmental impacts, would be required in order to maintain acceptable levels of service.	LTS	None required.	NA
Biological Resources			
BI-1: Development under to the Plan and the proposed street network changes has the potential to adversely affect special-status species and to interfere with the movement of wildlife species.	S	M-BI-1: Pre-Construction Bat Surveys: Conditions of approval for building permits issued for construction within the Plan Area shall include a requirement for pre-construction special-status bat surveys when large trees are to be removed or underutilized or vacant buildings are to be demolished. If active day or night roosts are found, a qualified biologist (i.e., a biologist holding a CDFW collection permit and a Memorandum of Understanding with the CDFW allowing the biologist to handle and collect bats) shall take actions to make such roosts unsuitable habitat prior to tree removal or building demolition. A no disturbance buffer shall be created around active bat roosts being used for maternity or hibernation purposes at a distance to be determined in consultation with CDFG. Bat roosts initiated during construction are presumed to be unaffected, and no buffer would necessary.	LTSM
BI-2: Development under the Plan and the proposed street network changes could interfere with the movement of migratory or native resident bird species.	LTS	Mitigation: None required. Improvement Measures: I-BI-2: Night Lighting Minimization. In compliance with the voluntary San Francisco Lights Out Program, the Planning Department could encourage buildings developed pursuant to the draft Plan to implement bird-safe building operations to prevent and minimize bird strike impacts, including but not	NA

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Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
		<p>limited to the following measures:</p> <ul style="list-style-type: none"> • Reduce building lighting from exterior sources by: <ul style="list-style-type: none"> ◦ Minimizing the amount and visual impact of perimeter lighting and façade up-lighting and avoid up-lighting of rooftop antennae and other tall equipment, as well as of any decorative features; ◦ Installing motion-sensor lighting; ◦ Utilizing minimum wattage fixtures to achieve required lighting levels. • Reduce building lighting from interior sources by: <ul style="list-style-type: none"> ◦ Dimming lights in lobbies, perimeter circulation areas, and atria; ◦ Turning off all unnecessary lighting by 11:00 p.m. through sunrise, especially during peak migration periods (mid-March to early June and late August through late October); ◦ Utilizing automatic controls (motion sensors, photo-sensors, etc.) to shut off lights in the evening when no one is present; ◦ Encouraging the use of localized task lighting to reduce the need for more extensive overhead lighting; ◦ Scheduling nightly maintenance to conclude by 11:00 p.m.; ◦ Educating building users about the dangers of night lighting to birds. 	
BI-3: Development under to the Plan and the proposed street network changes, would not substantially interfere with the movement of fish or impede the use of native wildlife nursery sites.	LTS	None required.	NA

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BI-4: Development under the Plan and proposed street network changes would not conflict with the City's local tree ordinance.	LTS	None required.	NA
C-BI-1: Development under the Plan and proposed street network changes, in combination with other past, present or reasonably foreseeable projects, would not result in a considerable contribution to cumulative impacts on biological resources.	LTS	None required.	NA
Geology, Soils, and Seismicity			
GE-1: Development under the Plan and the proposed street network changes would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, seismic groundshaking, seismically induced ground failure, or landslides.	LTS	None required.	NA
GE-2: Development under the Plan and the proposed street network changes would not result in substantial erosion or loss of top soil.	LTS	None required.	NA
GE-3: Neither development under the Plan nor the proposed street network changes would be located on a geologic unit or soil that is unstable, or that could become unstable as a result of the project.	LTS	None required.	NA
GE-4: Neither development under the Plan nor the proposed street network changes would create substantial risks to life or property as a result of location on expansive soils.	LTS	None required.	NA

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C-GE-1: Development under the Plan and the proposed street network changes, in combination with other past, present, and reasonably foreseeable future projects, would not result in a considerable contribution to cumulative impacts related to geologic hazards.	LTS	None required.	NA
Hydrology and Water Quality			
HY-1: Development under the Plan and the proposed street network changes could violate water quality standards or otherwise substantially degrade water quality.	LTS with respect to construction-related stormwater discharges, construction dewatering, and long-term dewatering. See Table S-1 for impacts to the combined sewer system.	None required with respect to construction-related stormwater discharges, construction dewatering, and long-term dewatering. See Table S-1 for impacts to the combined sewer system.	NA for construction-related stormwater discharges, construction dewatering, and long-term dewatering. See Table S-1 for impacts to the combined sewer system.
HY-2: Development under the Plan and the proposed street network changes would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.	LTS	None required.	NA
HY-3: Development under the Plan and the proposed street network changes would not alter the existing drainage pattern of the area in a manner that would result in substantial erosion, siltation, or flooding on- or off-site.	LTS	None required.	NA
HY-4: Development under the Plan and the proposed street network changes would not contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	LTS	None required.	NA

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TABLE S-2 SUMMARY OF IMPACTS OF THE PLAN — IDENTIFIED IN THE INITIAL STUDY

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
HY-5: Development under the Plan and the proposed street network changes would not expose people, housing, or structures, to substantial risk of loss due to existing flooding risks and would not redirect or impede flood flows.	LTS	None required.	NA
HY-6: Development under the Plan and the proposed street network changes could expose people, housing, or structures, to substantial risk of loss due to future flooding from sea level rise and would not redirect or impede flood flows.	See Table S-1	See Table S-1	See Table S-1
HY-7: Development under the Plan and the proposed street network changes would not expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow.	NI	None required.	NA
C-HY-1: Development under the Plan and the proposed street network changes, in combination with past, present, and reasonably foreseeable future projects in the site vicinity, could result in a considerable contribution to cumulative impacts on hydrology and water quality.	LTS with respect to erosion, stormwater discharges to the combined sewer system, alteration of drainage patterns, storm sewer system capacity; NI with respect to tsunami or seiche risk. See Table S-1 for impacts regarding wastewater treatment requirements, water quality standards, waste discharge requirements; water quality, and combined sewer discharges.	LTS with respect to erosion, stormwater discharges to the combined sewer system, alteration of drainage patterns, storm sewer system capacity; NI with respect to tsunami or seiche risk. See Table S-1 for impacts regarding wastewater treatment requirements, water quality standards, waste discharge requirements; water quality, and combined sewer discharges.	NA with respect to erosion, stormwater discharges to the combined sewer system, alteration of drainage patterns, storm sewer system capacity; NA with respect to tsunami or seiche risk. See Table S-1 for impacts regarding wastewater treatment requirements, water quality standards, waste discharge requirements; water quality, and combined sewer discharges.

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Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Hazards and Hazardous Materials			
HZ-1: Development under the Plan and the proposed street network changes would not create a significant hazard through routine transport, use, or disposal of hazardous materials.	LTS	None required.	NA
HZ-2: Development under the Plan and construction of the proposed street network changes could occur on site(s) identified on a list of hazardous materials sites compiled pursuant to <i>Government Code</i> Section 65962.5. Excavation could also require the handling of potentially contaminated soil and groundwater, potentially exposing workers and the public to hazardous materials, or resulting in a release into the environment during construction.	LTS	None required.	NA
HZ-3: Demolition and renovation of buildings as part of individual development projects implemented pursuant to the Plan could potentially expose workers and the public to hazardous building materials including asbestos-containing materials, lead-based paint, polychlorinated biphenyls (PCBs), bis (2-ethylhexyl) phthalate (DEHP), and mercury, or result in a release of these materials into the environment during construction.	S	M-HZ-3: Hazardous Building Materials Abatement. The project sponsor of any development project in the Plan Area shall ensure that any building planned for demolition or renovation is surveyed for hazardous building materials including, electrical equipment containing polychlorinated biphenyl (PCBs), fluorescent light ballasts containing PCBs or bis(2-ethylhexyl) phthalate (DEHP), and fluorescent light tubes containing mercury vapors. These materials shall be removed and properly disposed of prior to the start of demolition or renovation. Light ballasts that are proposed to be removed during renovation shall be evaluated for the presence of PCBs and in the case where the presence of PCBs in the light ballast cannot be verified, they shall be assumed to contain PCBs, and handled and disposed of as such, according to applicable laws and regulations. Any other hazardous building materials identified either before or during demolition or renovation shall be abated according to federal, State, and local laws and regulations.	LTSM

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Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
HZ-4: Development under the Plan and the proposed street network changes would not result in adverse effects related to hazardous emissions or handling of acutely hazardous materials within one-quarter mile of an existing school.	LTS	None required.	NA
HZ-5: Development under the Plan and the proposed street network changes would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LTS	None required.	NA
HZ-6: Development under the Plan and the proposed street network changes would not expose people or structures to a significant risk of loss, injury or death involving fires.	LTS	None required.	NA
C-HZ-1: Development under the Plan and the proposed street network changes, in combination with past, present, and reasonably foreseeable future projects in the site vicinity, would not result in a considerable contribution to cumulative impacts related to hazardous materials.	LTS	None required.	NA
Mineral and Energy Resources			
ME-1: Development under the Plan and the proposed street network changes would not result in the loss of availability of a known mineral resource or locally-important mineral resource recovery.	NI	None required.	NA
ME-2: Development under the Plan and the proposed street network changes would not result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner.	LTS	None required.	NA

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Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
C-ME-1: Development under the Plan and the proposed street network changes, in combination with other past, present or reasonably foreseeable projects would result in less-than significant impacts to mineral and energy resources.	LTS	None required.	NA
Agriculture Resources			
AF-1: Development under the Plan and the proposed street network changes would not (a) convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance; (b) conflict with existing zoning for agricultural use, or a Williamson Act contract; (c) conflict with existing zoning for or cause rezoning of forest land or timberland; (d) result in the loss of forest land or conversion of forest land to non-forest use; or (e) involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use or forest land to non-forest use.	NI	None required.	NA
C-AF-1: Development under the Plan and the proposed street network changes, in combination with other past, present or reasonably foreseeable projects would not result in impacts to agricultural and forest resources.	NI	None required.	NA

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Summary of Project Alternatives

This EIR provides five project alternatives to the Plan, as further described in Chapter VI, Alternatives:

- No Project Alternative;
- Reduced Heights Alternative;
- Modified TODCO Plan;
- Land Use Variant; and
- Land Use Plan Only Alternative.

No Project Alternative

This alternative assumes that development within the Plan Area would proceed consistent with existing land use controls, including the Western SoMa and East SoMa Area Plans and existing use and height and bulk districts. The No Project Alternative would not include implementation of the Plan's proposed street network changes, nor would the open spaces or open space improvements set forth in the Plan be expected to be implemented. Although both the East SoMa Plan and the Western SoMa Plan call for increasing the amount of open space in their respective plan areas, neither adopted area plan identifies specific park sites or open space improvements to facilitate these plans' respective policy objectives. Therefore, no specific open space or street network improvements are assumed under the No Project Alternative other than efforts currently under way or recently completed. Individual development projects under the No Project Alternative are assumed to meet Better Streets Plan requirements.

The growth projections for the No Project Alternative include the addition by 2040 in the Plan Area of approximately 9,200 households and 16,300 residents (about 36 percent less than the 25,500 households anticipated with implementation of the Plan) and approximately 27,200 jobs (57 percent less than the 63,600 jobs anticipated with the Plan). These assumptions reflect allowable development under existing zoning, allocated with respect to use according to historical development patterns in and around the Plan Area. Total floor area developed for the No Project Alternative (17.7 million square feet) would be about 44 percent less than with implementation of the Plan (31.7 million square feet).

The No Project Alternative assumes that growth in the Plan Area and the city would occur with or without implementation of the Plan, but that, absent implementation of the Plan, a smaller percentage of citywide growth would occur within the Plan Area.

Reduced Heights Alternative

The Reduced Heights Alternative would result in implementation of the same land use districts and General Plan amendments as under the Plan, but this alternative would permit lower heights in some areas, compared to the Plan. The Reduced Heights Alternative would permit fewer tall buildings south of the elevated Interstate 80 freeway than would be allowable under the Plan. Both the Reduced Heights Alternative and the Plan would increase height limits along much of Fourth, Harrison, and Bryant Streets from 65 feet to 85 feet.

However, the Reduced Heights Alternative would allow for four towers of 160 feet or more in height south of the freeway, whereas the Plan would allow up to 10 such towers in this area. Also, on the south side of Harrison Street between Second and Fourth Streets, the Reduced Heights Alternative would allow future buildings at heights no greater than 130 feet, whereas the Plan would allow for four towers 160 feet tall and greater. The maximum height allowed under this alternative would be 320 feet (at the corner of Fourth and Townsend Streets). The Reduced Heights Alternative would include the same street network changes and open spaces improvements that are proposed under the Plan.

This alternative assumes the same sites would be developed as under the Plan, although at a lower intensity, resulting in marginally less development than that assumed under the Plan. Growth projections for the Reduced Heights Alternative estimate an increase of 12,400 households and approximately 55,800 jobs, reflecting 14 percent fewer households and 12 percent fewer jobs than the Plan. Total floor area developed under the Reduced Heights Alternative would be about 13 percent less than with implementation of Plan.

Modified TODCO Plan

The TODCO Group, a South of Market affordable housing and community development non-profit organization, released its “Central SOMA Community Plan” (TODCO Plan) in May 2013. TODCO revised its plan in October 2016. For purposes of this EIR, a modification to the TODCO Plan’s proposed height limits in major development sites was made, and so this alternative is referred to as the Modified TODCO Plan.

The Modified TODCO Plan is based on an assumption that office development in San Francisco would proceed over the next 20 years at an average rate of about 750,000 square feet per year, or a total of 15 million square feet. Of the total of 15 million square feet, the Modified TODCO Plan proposes that up to about five million square feet be accommodated in the southern portion of the Plan Area (from the north side of Harrison Street south), with the remainder foreseen to be developed in the Financial District, including the Transit Center District east of the Plan Area and the existing C-3 use districts northeast of the Plan Area; Mission Bay and the Central Waterfront, including Pier 70 and the Seawall Lot 337/Pier 48 site where large mixed-use developments are proposed; and, to a lesser extent, in the Civic Center/Mid-Market area. Thus, assuming these other neighborhoods could accommodate this level of growth, the Modified TODCO Plan envisions that the Plan Area would accommodate less growth in office employment, but citywide office job growth would likely be comparable to city and regional forecasts.

The Modified TODCO Plan proposes this division of office space as a means of taking advantage of the under-construction Central Subway. The Modified TODCO Plan also seeks to avoid concentrating as much office development in the Plan Area as is proposed under the Plan, and rather, spreading out the total future office development over the next 20 years along the Central Subway corridor, resulting in approximately two-thirds (i.e., 10 million square feet) of total future office development occurring outside the Plan Area. This is intended as a means of minimizing the loss of older, relatively smaller commercial buildings that provide relatively more affordable office-type space for new small businesses, including technology startups, which cannot afford newer space that provides more amenities. Such buildings, according to the Modified TODCO Plan, “are vital to SOMA’s character and the city’s economy.”⁷ To preserve such older, mid-size buildings, the

⁷ TODCO Plan, p. 35.

Modified TODCO Plan proposes a prohibition on lot mergers of parcels smaller than 0.5 acre, unless no existing building with a floor area ratio greater than 1.5 would be demolished. Growth projections for the Modified TODCO Alternative estimate an increase of 12,700 households and approximately 56,700 jobs, reflecting 12 percent fewer households and 11 percent fewer jobs than the Plan.

It is assumed the Modified TODCO Plan would include the same street network changes that are proposed under the Plan.

Land Use Variant

The Land Use Variant is a variant of the Plan that would not permit residential uses in the WS-SALI and WS-MUO use districts in the area roughly bounded by Bryant, Townsend, Fourth and Sixth Streets. Although this area would be zoned MUO as proposed under the Plan, the prohibition on new housing adopted as part of the Western SoMa Plan would remain in effect. The intention of the Land Use Variant is to minimize potential land use conflicts in this approximately four-block area between new housing and existing and future commercial and entertainment uses. The Land Use Variant would be overlaid upon the Plan, and this alternative would allow for development at the same heights and same locations as under the Plan; only the above-described land use changes would be different within the approximately four-block area covered by the Land Use Variant. All other aspects of the Land Use Variant would be the same as under the Plan, including the street network changes proposed under the Plan.

This alternative would allow 1.8 million square feet less residential development, and 0.59 million square feet more commercial development than the Plan, for a net decrease of 1.2 million square feet development compared to the Plan. Growth projections for the Land Use Variant estimate an increase of 12,900 households and approximately 66,200 jobs, reflecting 10 percent fewer households and four percent more jobs than the Plan.

Land Use Plan Only Alternative

The Land Use Plan Only Alternative assumes the same policies and *Planning Code* and *General Plan* amendments would be implemented as with the Plan, except that this alternative would exclude implementation of the Plan's proposed street network changes. As such, development assumptions for this alternative would be the same as those for the Plan, including the addition, by 2040 in the Plan Area, of approximately 14,400 households, 25,500 residents and approximately 63,600 jobs. Total floor area developed by 2040 in the Plan Area under this alternative would also be the same as the Plan, at 31.7 million square feet.

Comparison of Impacts of Alternatives

Table S-3, Comparison of the Environmental Impacts of the Plan to the Impacts of Alternatives, presents the impacts of the Plan and summarizes the environmental impacts of the alternatives compared to those of the Plan. Generally speaking, the differences between the alternatives and the Plan are because the alternatives would result in less total development potential than under the Plan (as is the case for Alternatives 1 to 4) or because the alternatives do not include the proposed street network changes (as is the case for Alternatives 1 and 5).

TABLE S-3 COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE PLAN TO THE IMPACTS OF ALTERNATIVES

Impacts	Central SoMa Plan	Alternative 1: No Project Alternative	Alternative 2: Reduced Heights Alternative	Alternative 3: Modified TODCO Plan	Alternative 4: Land Use Variant	Alternative 5: Land Use Plan Only Alternative
Description	The Central SoMa Plan is a comprehensive plan for a 230-acre, 17-city-block area in SoMa. The Plan seeks to encourage and accommodate housing and employment growth within the Plan Area by (1) removing land use restrictions to support a greater mix of uses while also emphasizing office uses in portions of the Plan Area; (2) amending existing height and bulk districts; (3) modifying the system of streets and circulation within and adjacent to the Plan Area to meet the needs and goals of a dense, transit-oriented, mixed-use district; and (4) creating new, and improving existing, open spaces. This Plan would result in an increase of 14,400 households, 63,600 jobs, and 31.7 million total floor area in the Plan Area.	The No Project Alternative is the maintenance of the existing zoning and height and bulk controls in the Plan Area, and no adoption of the Plan. The No Project Alternative would also not include the street network changes or open space improvements proposed under the Plan. This alternative would have approximately 36 percent fewer households, and 57 percent fewer jobs, and 44 percent less total floor area than the Plan.	The Reduced Heights Alternative would have the same land use districts as the Plan, but would permit fewer tall buildings than would be allowable under the Plan. This alternative would include the same street network changes and open spaces improvements that are proposed under the Plan. This alternative would have approximately 14 percent fewer households, 12 percent fewer jobs, and 13 percent less total floor area than the Plan.	As compared to the Plan, the Modified TODCO Plan would have the following differences in use districts within the Plan Area: less new MUO, retain more existing WS-MUO and SALI, and retain all of the existing RED. The Modified TODCO Plan also proposes certain additional PDR/Arts protections compared to the Plan. The Modified TODCO Plan proposes no height limit increases above the existing height limits, except for certain major development sites. This alternative would include the same street network changes proposed under the Plan. This alternative would have approximately 12 percent fewer households, 11 percent fewer jobs, and 11 percent less total floor area than the Plan.	The Land Use Variant would be the same as the Plan, except that it would not permit residential uses in the WS-SALI and WS-MUO use districts in the area roughly bounded by Bryant, Townsend, Fourth, and Sixth Streets. This alternative would include the same street network changes and open spaces improvements that are proposed under the Plan. This alternative would have approximately 10 percent fewer households, 4 percent more jobs, and 3 percent less total floor area than the Plan.	The Land Use Plan Only Alternative would be the same as the Plan, except that it would not include the Plan's proposed street network changes. Otherwise, the land use development assumptions, including for households, jobs, and total floor area, would be the same as the Plan.
Ability to Meet Project Sponsor's Objectives	All	Some	Most	Most	Most	Most

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Impacts	Central SoMa Plan	Alternative 1: No Project Alternative	Alternative 2: Reduced Heights Alternative	Alternative 3: Modified TODCO Plan	Alternative 4: Land Use Variant	Alternative 5: Land Use Plan Only Alternative
A. Land Use						
Physical Division of Community	Impact LU-1: Development under the Plan, and proposed open space improvements and the proposed street network changes would not physically divide an established community. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)
Conflict with Land Use Plans	Impact LU-2: Development under the Plan, including proposed open space improvements and the proposed street network changes, would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. (SUM) Specifically, the Plan could result in traffic noise along Howard Street (under the two-way option for Howard and Folsom Streets) that exceeds the noise standards in the <i>General Plan's</i> Environmental Protection Element.	Less than proposed Plan. (LTS)	Similar to the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)	Less than proposed Plan. (LTS)

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Cumulative Land Use	Impact C-LU-1: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would contribute considerably to a significant cumulative land use impact. (SUM) Specifically, the Plan, under both the one-way and two-way options for Folsom and Howard Streets, could make a considerable contribution to cumulative traffic noise levels which would exceed the noise standards in the <i>General Plan's</i> Environmental Protection Element.	Less than the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)	Less than the proposed Plan. (LTS)
B. Aesthetics						
Visual Character	Impact AE-1: Development under the Plan, including the proposed open space improvements and street network changes, would not substantially degrade the visual character or quality of the Plan Area or substantially damage scenic resources. (LTS)	Less than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)

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Views/Scenic Vista	Impact AE-2: Development under the Plan, including the proposed open space improvements and street network changes, would alter the public views of the Plan Area from short-, mid-, and long-range vantage points and alter views into the surrounding neighborhoods from within the Plan Area, but would not adversely affect public views or have a substantial adverse effect on scenic vistas. (LTS)	Less than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)
Light and Glare	Impact AE-3: Development under the plan, including the proposed open space improvements and street network changes, would not create a new source of substantial light or glare in the Plan Area that would adversely affect day or nighttime views or substantially impact other people or properties. (LTS)	Less than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)
Cumulative Aesthetics	Impact C-AE-1: Development under the Plan, including the proposed street network changes and open space improvements, in combination with past, present and reasonably foreseeable future projects, would alter the visual character and public views of and through SoMa, but would not adversely affect visual character, scenic vistas, or scenic resources or substantially increase light and glare. (LTS)	Less than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)

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Impacts	Central SoMa Plan	Alternative 1: No Project Alternative	Alternative 2: Reduced Heights Alternative	Alternative 3: Modified TODCO Plan	Alternative 4: Land Use Variant	Alternative 5: Land Use Plan Only Alternative
C. Cultural Resources						
Historical Resources	Impact CP-1: Development under the Plan, would result in the demolition or substantial alteration of individually identified historic architectural resources and/or contributors to historic district or conservation district located in the Plan Area, including as-yet unidentified resources, a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5. (SUM)	Less than the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)
Historical Resources	Impact CP-2: Neither the proposed open space improvements nor street network changes would adversely affect historic architectural resources in a way that would result in a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5. (LTS)	No impact. (NI)	Similar to the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Similar the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)
Historical Resources	Impact CP-3: Construction activities in the Plan Area would result in a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5 through indirect construction damage to historic architectural resources. (LTSM)	Less than the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)

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Archeological Resources	Impact CP-4: Development under the Plan, including the proposed open space improvements and street network changes, would cause a substantial adverse change in the significance of an archeological resource pursuant to CEQA Guidelines Section 15064.5. (LTSM)	Less than the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)
Tribal Cultural Resources	Impact CP-5: Development under the Plan, including the proposed open space improvements and street network changes, could cause a substantial adverse change in the significance of a tribal cultural resource pursuant to CEQA Guidelines Section 21084.3. (LTSM)	Less than the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)
Paleontological Resources	Impact CP-6: Development under the Plan, including the proposed open space improvements and street network changes, would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature. (LTS)	Less than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)
Human Remains	Impact CP-7: Development under the Plan, including the proposed open space improvements and street network changes, would not disturb human remains, including those interred outside of formal cemeteries. (LTS)	Less than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)

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Impacts	Central SoMa Plan	Alternative 1: No Project Alternative	Alternative 2: Reduced Heights Alternative	Alternative 3: Modified TODCO Plan	Alternative 4: Land Use Variant	Alternative 5: Land Use Plan Only Alternative
Cumulative Historical Resources	Impact C-CP-1: Development under the Plan, in combination with past, present, and reasonably foreseeable future projects in the vicinity, could result in demolition and/or alteration of historical resources, thereby contributing considerably to significant cumulative historical resources impacts. (SUM)	Less than the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)
Cumulative Historical Resources	Impact C-CP-2: The proposed open space improvements and the proposed street network changes within the Plan Area, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute considerably to significant cumulative historical resources impacts. (LTS)	No impact. (NI)	Similar to the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Similar the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)
Cumulative Archeological Resources	Impact C-CP-3: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable future projects in the vicinity, could cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5 or a tribal cultural resource pursuant to CEQA Guidelines Section 21084.3. (LTSM)	Less than the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)

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TABLE S-3 COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE PLAN TO THE IMPACTS OF ALTERNATIVES

Impacts	Central SoMa Plan	Alternative 1: No Project Alternative	Alternative 2: Reduced Heights Alternative	Alternative 3: Modified TODCO Plan	Alternative 4: Land Use Variant	Alternative 5: Land Use Plan Only Alternative
Cumulative Paleontological Resources and Human Remains	Impact C-CP-4: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature, and would not disturb human remains, including those interred outside of formal cemeteries. (LTS)	Less than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)
D. Transportation and Circulation						
VMT	Impact TR-1: Development under the Plan, including the proposed open space improvements and street network changes, would not cause substantial additional VMT or substantially increase automobile travel. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Greater than the proposed Plan. (LTS)
Traffic Hazards	Impact TR-2: Development under the Plan, including the proposed open space improvements and street network changes, would not result in traffic hazards. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Greater than the proposed Plan. (LTS)

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Transit	Impact TR-3: Development under the Plan, including the proposed open space improvements and street network changes, would result in a substantial increase in transit demand that would not be accommodated by local transit capacity, and would cause a substantial increase in delays resulting in adverse impacts on local and regional transit routes. (SUM)	Less than the proposed Plan, but no mechanism for mitigation. (SU)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)	Similar to the proposed Plan; significant delay would occur in both the AM and PM peaks instead of only PM, fewer lines significantly impacted. (SUM)
Pedestrians	Impact TR-4: Development under the Plan, including the proposed open space improvements and street network changes, would not result in pedestrian safety hazards nor result in a substantial overcrowding on sidewalks or at corner locations, but would result in overcrowding at crosswalks. (SUM)	Less than the proposed Plan for pedestrian crowding; greater than the proposed Plan for pedestrian capacity impacts. (SU)	Less than the proposed Plan. (SUM)	Less than the proposed Plan for pedestrian crowding. (SUM)	Similar to the proposed Plan. (SUM)	Similar to the proposed Plan for pedestrian volumes; greater than the proposed Plan for pedestrian capacity impacts. (SUM)
Bicyclists	Impact TR-5: Development under the Plan, including the proposed open space improvements and street network changes, would not result in potentially hazardous conditions for bicyclists, or otherwise substantially interfere with bicycle accessibility. (LTS)	Greater than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Greater than the proposed Plan. (LTS)

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Loading	Impact TR-6: Development under the Plan, including the proposed open space improvements and street network changes, would result in a reduction in on-street commercial loading supply such that the loading demand during the peak hour of loading activities would not be accommodated within on-street loading supply, would impact existing passenger loading/unloading zones, and may create hazardous conditions or significant delay that may affect transit, other vehicles, bicycles, or pedestrians. (SUM)	Less loading demand than the proposed Plan; no reduction in on-street parking. (LTS)	Less loading demand than the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)	Loading demand similar to the proposed Plan. (SUM)	Same loading demand as the proposed Plan; no reduction in on-street loading supply. (LTSM)
Parking	Impact TR-7: Development under the Plan, including the proposed open space improvements and street network changes, would not result in a substantial parking deficit that would create hazardous conditions or significant delays affecting transit, bicycles, or pedestrians, and where particular characteristics of the Plan demonstrably render use of other modes infeasible. (LTS)	Less parking demand than the proposed Plan; no reduction in on-street parking supply. (LTS)	Less parking demand than the proposed Plan. (LTS)	Less parking demand than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Same parking demand as the proposed Plan; no reduction in on-street parking supply. (LTS)
Emergency Vehicle Access	Impact TR-8: Development under the Plan, including the proposed open space improvements and street network changes, could result in significant impacts on emergency vehicle access. (LTSM)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTSM)	Less than the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)	Less than the proposed Plan. (LTS)

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Impacts	Central SoMa Plan	Alternative 1: No Project Alternative	Alternative 2: Reduced Heights Alternative	Alternative 3: Modified TODCO Plan	Alternative 4: Land Use Variant	Alternative 5: Land Use Plan Only Alternative
Construction	Impact TR-9: Construction activities associated with development under the Plan, including the proposed open space improvements and street network changes, would result in substantial interference with pedestrian, bicycle, or vehicle circulation and accessibility to adjoining areas, and would not result in potentially hazardous conditions. (SUM)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)
Cumulative VMT	Impact C-TR-1: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in significant impacts related to VMT. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Greater than the proposed Plan. (LTS)
Cumulative Traffic Hazards	Impact C-TR-2: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in significant impacts related to traffic hazards. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Greater than the proposed Plan. (LTS)

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Cumulative Transit	Impact C-TR-3: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would contribute considerably to significant cumulative transit impacts on local and regional transit providers. (SUM)	Less than the proposed Plan, but no mechanism for mitigation. (SU)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)
Cumulative Pedestrians	Impact C-TR-4: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would contribute considerably to significant cumulative pedestrian impacts. (SUM)	Less than the proposed Plan for pedestrian crowding; greater than the proposed Plan for pedestrian capacity impacts. (SU)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)	Similar to the proposed Plan for pedestrian volumes; greater than proposed Plan for pedestrian capacity impacts. (SUM)
Cumulative Bicyclists	Impact C-TR-5: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in cumulative bicycle impacts. (LTS)	Greater than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Greater than the proposed Plan. (LTS)

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Cumulative Loading	Impact C-TR-6: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would contribute considerably to significant cumulative loading impacts. (SUM)	Less loading demand than the proposed Plan; no reduction in on-street loading supply. (LTS)	Less loading demand than the proposed Plan. (SUM)	Less loading demand than the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)	Same loading demand as the proposed Plan; no reduction in on-street loading supply. (LTS)
Cumulative Parking	Impact C-TR-7: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in cumulative parking impacts. (LTS)	Less parking demand than the proposed Plan, no reduction in on-street parking supply. (LTS)	Less parking demand than the proposed Plan. (LTS)	Less parking demand than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Same parking demand as the proposed Plan, no reduction in on-street parking supply. (LTS)
Cumulative Emergency Vehicle Access	Impact C-TR-8: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, could contribute considerably to significant cumulative emergency vehicle access impacts. (LTSM)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTSM)	Less than the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)	Less than the proposed Plan. (LTS)

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Cumulative Construction	Impact C-TR-9: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in significant cumulative construction-related transportation impacts. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)
E. Noise and Vibration						
Traffic Noise	Impact NO-1: Development under the Plan, including the proposed street network changes, would generate noise that would result in exposure of persons to noise in excess of standards in the <i>San Francisco General Plan</i> or Noise Ordinance (Article 29 of the <i>Police Code</i>), and would result in a substantial permanent increase in ambient noise above existing levels. (SUM)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)	Less than the proposed Plan. (LTS)
Construction Noise	Impact NO-2: Development under the Plan, including the proposed street network changes, would result in construction activities in the Plan Area that could expose persons to substantial temporary or periodic increases in noise levels substantially in excess of ambient levels. (SUM)	Less than the proposed Plan. (LTSM)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)

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Construction Vibration	Impact NO-3: Development under the Plan, including the proposed street network changes, would result in construction activities that could expose persons to temporary increases in vibration substantially in excess of ambient levels. (LTSM)	Less than the proposed Plan. (LTSM)	Less than the proposed Plan. (LTSM)	Less than the proposed Plan. (LTSM)	Less than the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)
Cumulative Traffic Noise	Impact C-NO-1: Development under the Plan, including the proposed street network changes and open space improvements, in combination with past, present, and reasonably foreseeable future projects, would result in cumulative noise impacts. (SUM)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Less the proposed Plan. (LTS)
F. Air Quality						
Conflict with Clean Air Plan	Impact AQ-1: Development under the Plan, including the proposed open space improvements and proposed street network changes, would not conflict with or obstruct implementation of the <i>2010 Clean Air Plan</i> . (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)
Criteria Air Pollutants (from Plan)	Impact AQ-2: The Plan would not violate an air quality standard or contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)

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Criteria Air Pollutants (Operational from Subsequent Development Projects)	Impact AQ-3: Operation of subsequent individual development projects in the Plan Area and street network changes could violate an air quality standard, contribute to an existing or projected air quality violation, and/or result in a cumulatively considerable net increase of criteria pollutants for which the project region is in nonattainment under an applicable federal or State ambient air quality standard. (SUM)	Less than the proposed Plan.(SUM)	Less than the proposed Plan.(SUM)	Less than the proposed Plan.(SUM)	Less than the proposed Plan.(SUM)	Similar to the proposed Plan.(SUM)
Criteria Air Pollutants (Construction)	Impact AQ-4: Development under the Plan, but not the proposed street network changes and open space improvements, would result in construction activities that could violate an air quality standard, contribute to an existing or projected air quality violation, or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard. (LTSM)	Less than the proposed Plan. (LTSM)	Less than the proposed Plan. (LTSM)	Less than the proposed Plan. (LTSM)	Less than the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)
PM_{2.5} and TACs (Operational)	Impact AQ-5: Development under the Plan, including proposed street network changes, would result in operational emissions of fine particulate matter (PM _{2.5}) and toxic air contaminants that would result in exposure of sensitive receptors to substantial pollutant concentrations. (SUM)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)

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PM_{2.5} and TACs (Construction)	Impact AQ-6: Development under the Plan, including proposed open space improvements and street network changes, would result in construction activities that would expose sensitive receptors to substantial levels of fine particulate matter (PM _{2.5}) and toxic air contaminants generated by construction equipment. (LTSM)	Less than the proposed Plan. (LTSM)	Less than the proposed Plan. (LTSM)	Less than the proposed Plan. (LTSM)	Less than the proposed Plan. (LTSM)	Similar to the proposed Plan. (LTSM)
Odors	Impact AQ-7: Implementation of the Plan would not expose a substantial number of people to objectionable odors affecting a substantial number of people. (LTS)	Less than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)
Cumulative Criteria Air Pollutants	Impact C-AQ-1: Development under the Plan, including proposed street network changes, but not open space improvements, in combination with past, present, and reasonably foreseeable future projects in the vicinity, under cumulative 2040 conditions, would contribute considerably to criteria air pollutant impacts. (SUM)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Similar to the proposed Plan.(SUM)

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Cumulative PM_{2.5} and TACs	Impact C-AQ-2: Development under the Plan, including the proposed street network changes, but not open space improvements, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would result in exposure of sensitive receptors to substantial levels of fine particulate matter (PM _{2.5}) and toxic air contaminants under 2040 cumulative conditions. (SUM)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Similar to the proposed Plan.(SUM)
G. Wind						
Wind	Impact WI-1: Subsequent future development anticipated under the Plan could alter wind in a manner that substantially affects public areas. (SUM)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (SUM)	Less than the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)	Similar to the proposed Plan. (SUM)
Cumulative Wind	Impact C-WI-1: Development under the Plan, combined with past, present, and reasonably foreseeable future projects, could result in cumulative significant impacts related to wind. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)
H. Shadow						
Shadow	Impact SH-1: Development under the Plan would not create new shadow in a manner that substantially affects existing outdoor recreation facilities or other public areas. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Similar to or less than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)

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Cumulative Shadow	Impact C-SH-1: Implementation of the Plan, in combination with past, present and reasonably foreseeable future projects in the vicinity, would not contribute considerably to a significant cumulative impact on shadow conditions. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Less than the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)	Similar to the proposed Plan. (LTS)
I. Hydrology and Water Quality						
Flooding	Impact HY-6: Development under the Plan, including the proposed open space improvements and street network changes, would not exacerbate future flood hazards in a manner that could expose people or structures to a significant risk of loss, injury, or death. (LTS)	Similar the proposed Plan. (LTS)	Similar the proposed Plan. (LTS)	Similar the proposed Plan. (LTS)	Similar the proposed Plan. (LTS)	Similar the proposed Plan. (LTS)
Cumulative Wastewater	Impact C-HY-2: Operation of individual development projects through implementation of the Plan, in combination with past, present, and foreseeable future development in San Francisco, would not exceed the wastewater treatment requirements of the SEP; violate water quality standards or waste discharge requirements; otherwise substantially degrade water quality; or result in an increase in the frequency of combined sewer discharges from the City's combined sewer system. (LTS)	Similar the proposed Plan. (LTS)	Similar the proposed Plan. (LTS)	Similar the proposed Plan. (LTS)	Similar the proposed Plan. (LTS)	Similar the proposed Plan. (LTS)

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Cumulative Flooding	Impact C-HY-3: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable future projects, would not exacerbate future flood hazards that could expose people or structures to a significant risk of loss, injury, or death. (LTS)	Similar the proposed Plan. (LTS)	Similar the proposed Plan. (LTS)	Similar the proposed Plan. (LTS)	Similar the proposed Plan. (LTS)	Similar the proposed Plan. (LTS)

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Environmentally Superior Alternative

The No Project Alternative would result in less new construction and new development than the Plan or the other alternatives. Consequently, the No Project Alternative's impacts related to construction and operation of new developments would also be less than the Plan or the other alternatives. As indicated in Table S-3, the No Project Alternative would avoid eight of the significant and unavoidable impacts associated with the Plan. This alternative would, however, introduce a new significant and unavoidable impact to pedestrian capacity that would not occur under the Plan, and the No Project Alternative would not meet most of the basic project objectives. Furthermore, per CEQA Guidelines Section 15126.6(e)(2), if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

Of the remaining four alternatives (Reduced Heights Alternative, Modified TODCO Plan, Land Use Variant, and Land Use Plan Only Alternative), the Land Use Plan Only Alternative is considered the environmentally superior alternative. The Land Use Plan Only Alternative would result in a similar amount of new construction and new development compared to the Plan. By not implementing the street network improvements proposed by the Plan, however, this alternative would avoid eight associated significant secondary effects related to traffic noise, on-street loading, and emergency vehicle access. The absence of the Plan's street network improvements under this alternative would result in incrementally higher VMT than the Plan, and incrementally greater potential for traffic/bicycle/pedestrian conflicts compared to the Plan. Such effects would, however, be less than significant, as under the Plan. The Land Use Plan Only Alternative would result in other significant effects related to transit and pedestrians. These significant effects would require implementation of mitigation measures M-ALT-TR-1, Upgrade Transit-Only Lanes on Third Street, and M-ALT-TR-2, Upgrade Additional Central SoMa Area Crosswalks.

As with the No Project Alternative, the Reduced Heights Alternative, the Modified TODCO Plan, and the Land Use Variant all would, in varying degrees, result in lower development intensity than the Plan. As such, many of the construction and operational effects of these alternatives would be less than the Plan. However, the Reduced Heights Alternative, the Modified TODCO Plan, and the Land Use Variant would not avoid any of the significant and unavoidable environmental effects associated with the Plan. With all of these lower development intensity alternatives, to the extent that the demand for additional developed space would be met elsewhere in the Bay Area, employees in and residents of such development could potentially generate substantially greater impacts on transportation systems (including vehicle miles traveled), air quality, and greenhouse gases than would be the case for development in the more compact and better-served-by-transit Plan Area. This would be particularly likely for development in more outlying parts of the region where fewer services and less transit access is provided. Therefore, while it would be speculative to attempt to quantify or specify the location where such development would occur and the subsequent impacts thereof, it is acknowledged that these lower intensity alternatives would incrementally reduce local impacts in the Plan Area and in San Francisco, while potentially increasing regional emissions of criteria air pollutants and greenhouse gases, as well as regional traffic congestion. They could also incrementally increase impacts related to "greenfield" development on previously undeveloped locations in the Bay Area and, possibly, beyond.

Areas of Controversy and Issues to Be Resolved

The Planning Department prepared and distributed a notice announcing the availability of a Notice of Preparation (NOP) of an EIR and Notice of Public Scoping Meeting for the Plan on April 24, 2013.⁸ The notices were mailed to adjacent cities and counties, other public agencies and interested parties. A public scoping meeting was held at the Mendelsohn House, 737 Folsom Street (within the Plan Area) on May 15, 2013, at which oral comments from the public addressing the scope of the environmental analysis were received and transcribed. At the public meeting, four people commented. Written comments regarding the scope of the EIR were accepted for a standard 30-day period from April 24, 2013, until May 24, 2013. Seventeen total comment letters were received, of which two arrived after the close of the comment period.

Additionally, the Planning Department received comments on the Initial Study, published February 12, 2014.

The following is a summary of the issues raised by the public and governmental agencies in response to the NOP and Initial Study prepared for the Plan in 2014. The general topic categories of the comments are shown in **bolded text** and are followed by clarifying remarks or general statements in parenthesis, as well as a reference to where the comment is addressed in this EIR:

- **Environmental Review Process** (how will subsequent development projects in the Plan Area undergo CEQA review?) (refer to Chapter I, Introduction, Subsequent Development Projects);
- **Project Objectives/Goals** (specific details should be provided and/or certain revisions to Plan objectives are recommended; one commenter suggests that the Plan accommodate more residential growth, rather than office development in Plan zoning options) (refer to Chapter II, Project Description);
- **Project Description** (specific street improvements including sidewalk widening, additional signals and signage are suggested; the Plan should include policies for local hiring and training goals; the Planning Department should consider an expansion of the Youth and Family Zone Special Use District; additional comments requested increasing height or floor plate limits at specific properties) (refer to Chapter II, Project Description);
- **Land Use and Planning** (concern that the Plan could in some way isolate the neighborhoods to the south) (refer to Section IV.A, Land Use and Land Use Planning);
- **Aesthetics** (concerns associated with the Plan's potential to impact neighborhood character and to result in visually unappealing elements; the EIR should analyze the Plan's potential to have an adverse effect on existing views) (refer to Section IV.B, Aesthetics);
- **Population and Housing** (potential displacement impacts to residences and businesses, impacts on affordable housing needs and obligations, and impacts on local employment opportunities; the EIR should evaluate whether the Plan could result in loss of land and jobs from rezoning areas that currently allow light industrial and manufacturing land uses) (refer to Appendix B, Initial Study, Population and Housing; Chapter II, Project Description; and Section IV.A, Land Use and Land Use Planning);

⁸ The Plan was known as the Central Corridor Plan at the time of the scoping meeting.

- **Cultural Resources** (concerns related to the Plan's proposed mid-block pedestrian connections and whether constructing these could damage or demolish historical resources) (refer to Section IV.C, Cultural and Paleontological Resources);
- **Transportation and Traffic** (large Moscone Center events should be included in the analysis; impacts to cyclists and pedestrians should be evaluated, specifically impacts to the Yerba Buena Neighborhood and pedestrians with limited mobility; the EIR should evaluate impacts to local and State transportation facilities, public transit facilities, and reasonably foreseeable projects including those of Caltrain and Golden Gate Transit, including proposed bus route changes) (refer to Section IV.D, Transportation and Circulation);
- **Greenhouse Gases** (concerns about potential for the Plan to increase the City's carbon footprint) (this issue was addressed in the Initial Study discussion of Greenhouse Gas Emissions, which concluded that the Plan would not have a significant effect of this kind; see Appendix B);
- **Wind and Shadow** (the potential for the Plan to result in increased shadow and wind impacts; Plan-induced development could add shadow to parks under the jurisdiction of the San Francisco Recreation and Park Department) (refer to Section IV.G, Wind, and Section IV.H, Shadow);
- **Recreation** (concern regarding direct and indirect impacts to parks and recreation facilities within and near the Plan Area, such as South Park, Yerba Buena Gardens, Gene Friend Recreation Center and Victoria Manalo Draves Park; additional demand will be placed on recreational facilities due to population growth) (This issue was considered in the Initial Study discussion of Recreation and Public Space, which concluded that the Plan would not have a significant effect of this kind; see Appendix B);
- **Public Services** (concern regarding the potential for additional demands on public services due to population growth resulting from the Plan; cumulative impacts to public facilities and conveniences, such as restrooms) (This issue was considered in the Initial Study discussion of, Public Services, which concluded that the Plan would not have a significant effect of this kind; see Appendix B);
- **Geology and Soils** (the Plan should acknowledge the area's soils which are largely fill and subject to seismic risk in conjunction with its proposed land uses and changes to the area's urban form) (this issue was considered in the Initial Study discussion of Geology, Soils, and Seismicity, which concluded that the Plan would not have a significant effect of this kind; see Appendix B);
- **Hydrology** (concern that the Plan Area would be subject to sea level rise) (refer to Section IV.I, Hydrology and Water Quality);
- **Cumulative Impacts** (the EIR analysis should include construction and operations timelines for major projects including the Central Subway) (refer to the cumulative analyses provided in Appendix B, Initial Study, and Sections IV.A through IV.I of the EIR); and
- **Alternatives** ("mid-range" build-out zoning alternatives are suggested) (refer to Chapter VI, Alternatives).

CHAPTER I

Introduction

This environmental impact report (EIR) analyzes potential environmental effects associated with the implementation of the Central SoMa Plan (referred to as the “the Plan”), which was drafted by the San Francisco Planning Department and published in April 2013. Since 2013, the Planning Department has held a number of meetings with community groups in order to get stakeholder input on the Plan. The result is the latest draft Central SoMa Plan for adoption, published August 2016, which is the subject of this EIR.

As its name implies, the Plan Area is located within the City’s South of Market (SoMa) area. The 230-acre Plan Area encompasses 17 full and partial city blocks and area streets that in some cases extend beyond Plan borders, as illustrated on Figure II-1, Central SoMa Plan Area Boundaries, on page II-8 of Chapter II, Project Description. The Plan Area is bounded by Second Street on the east, Sixth Street on the west, Townsend Street on the south, and by an irregular border that generally jogs along Folsom, Howard and Stevenson Streets to the north.

This EIR analyzes Plan implementation programmatically within the area delineated on Figure II-1. The EIR also includes a project-level analysis of potential environmental effects associated with proposed open space improvements and changes to street network on portions of Howard, Folsom, Harrison, Bryant, Brannan, Third, and Fourth Streets that are included within but also extend beyond Plan Area boundaries.

I.A Environmental Review Process

The Planning Department, serving as lead agency responsible for administering the environmental review on behalf of the City and County of San Francisco (City), determined that preparation of an EIR was needed to evaluate potentially significant effects that could result from implementation of the Plan. The California Environmental Quality Act (CEQA) requires that before a decision can be made to approve a project (or in this case, a plan) that would result in potential adverse physical effects, an EIR must be prepared that fully describes the environmental effects of the project. An EIR is a public information document for use by governmental agencies and the public to identify and evaluate potential environmental impacts of a project, to identify mitigation measures to lessen or eliminate significant adverse impacts, and to examine feasible alternatives to the project. The information contained in this EIR will be reviewed and considered by the decision-makers prior to a decision to approve, disapprove, or modify the Plan.

CEQA requires that the lead agency neither approve nor implement a project unless its significant environmental effects have been reduced to less-than-significant levels, essentially “eliminating, avoiding, or substantially lessening” the expected impact(s), except when certain findings are made. If the lead agency approves a project that would 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. A Statement of Overriding Considerations provides substantial evidence of the balance of the

economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project against its unavoidable environmental risks when determining whether to approve the project.

On April 24, 2013, the Planning Department sent a Notice of Preparation (NOP) to governmental agencies, organizations and persons who may have an interest in the proposed project. The NOP requested that agencies and interested parties comment on environmental issues that should be addressed in the EIR (see Appendix A). A scoping meeting was held on May 15, 2013 to explain the environmental review process for this Plan and to provide opportunity to take public comment and concerns related to the Plan's environmental issues. The Planning Department considered the public comments received at the scoping meeting and prepared an Initial Study in order to focus the scope of the EIR by assessing which of the Plan's environmental topics would not result in significant impacts on the environment. The Planning Department published the Initial Study on February 12, 2014 (see Appendix B). The Initial Study determined that the Plan could not result in significant environmental effects (in some cases, with mitigation identified in the Initial Study) for the following environmental topics:

- **Population and Housing;**
- **Greenhouse Gas Emissions;**
- **Recreation;**
- **Utilities and Service Systems** (except for potential impacts related to the exceedance of wastewater treatment requirements of the Regional Water Quality Control Board, require the construction of new water or wastewater treatment facilities, or require the construction of new storm water drainage facilities, all of which are addressed in this EIR in Section IV.I, Hydrology and Water Quality);
- **Public Services;**
- **Biological Resources** (significant impact identified, but mitigated through measures identified in the Initial Study);
- **Geology and Soils;**
- **Hydrology and Water Quality** (except for potential impacts related to effects of combined sewer system operation on water quality and potential impacts of sea level rise, which are addressed in this EIR in Section IV.I, Hydrology and Water Quality);
- **Hazardous Materials** (significant impact identified, but mitigated through measures identified in the Initial Study);
- **Mineral and Energy Resources;** and
- **Agricultural Resources.**

Because the Initial Study analysis was based on a previous draft of the Plan circulated for review in 2013, the current 2016 draft of the Plan has been reviewed to ensure the Initial Study's conclusions reached on the 2013 draft remain valid. No new information related to the draft 2016 Plan has come to light that would necessitate changing any of the Initial Study's significance conclusions reached for the 11 topics that would be less than significant or less than significant with mitigation measures, which are included in the topical sections of Chapter IV, Environmental Setting, Impacts, and Mitigation Measures, of this EIR. As such, no further environmental analysis of these Initial Study topics is required in this EIR.

The following is a summary of the issues raised by the public and governmental agencies in response to the NOP and Initial Study prepared for the Plan in 2014. The general topic categories of the comments are shown in **bolded text** and are followed by clarifying remarks or general statements in parenthesis, as well as a reference to where the comment is addressed in this EIR:

- **Environmental Review Process** (how will subsequent development projects in the Plan Area undergo CEQA review?) (refer to Chapter I, Introduction, Subsequent Development Projects);
- **Project Objectives/Goals** (specific details should be provided and/or certain revisions to Plan objectives are recommended; one commenter suggests that the Plan accommodate more residential growth, rather than office development in Plan zoning options) (refer to Chapter II, Project Description);
- **Project Description** (specific street improvements including sidewalk widening, additional signals and signage are suggested; the Plan should include policies for local hiring and training goals; the Planning Department should consider an expansion of the Youth and Family Zone Special Use District; additional comments requested increasing height or floor plate limits at specific properties) (refer to Chapter II, Project Description);
- **Land Use and Land Use Planning** (concern that the Plan could in some way isolate the neighborhoods to the south) (refer to Section IV.A, Land Use and Land Use Planning);
- **Aesthetics** (concerns associated with the Plan's potential to impact neighborhood character and to result in visually unappealing elements; the EIR should analyze the Plan's potential to have an adverse effect on existing views) (refer to Section IV.B, Aesthetics);
- **Population and Housing** (potential displacement impacts to residences and businesses, impacts on affordable housing needs and obligations, and impacts on local employment opportunities; the EIR should evaluate whether the Plan could result in loss of land and jobs from rezoning areas that currently allow light industrial and manufacturing land uses) (refer to Appendix B, Initial Study, Population and Housing; Chapter II, Project Description; and Section IV.A, Land Use and Land Use Planning);
- **Cultural Resources** (concerns related to the Plan's proposed mid-block pedestrian connections and whether constructing these could damage or demolish historical resources) (refer to Section IV.C, Cultural and Paleontological Resources);
- **Transportation and Traffic** (large Moscone Center events should be included in the analysis; impacts to cyclists and pedestrians should be evaluated, specifically impacts to the Yerba Buena Neighborhood and pedestrians with limited mobility; the EIR should evaluate impacts to local and State transportation facilities, public transit facilities, and reasonably foreseeable projects including those of Caltrain and Golden Gate Transit, including proposed bus route changes) (refer to Section IV.D, Transportation and Circulation);
- **Greenhouse Gases** (concerns about potential for the Plan to increase the City's carbon footprint) (this issue was addressed in the Initial Study discussion of Greenhouse Gas Emissions, which concluded that the Plan would not have a significant effect of this kind; see Appendix B);
- **Wind and Shadow** (the potential for the Plan to result in increased shadow and wind impacts; Plan-induced development could add shadow to parks under the jurisdiction of the San Francisco Recreation and Park Department) (refer to Section IV.G, Wind, and Section IV.H, Shadow);

- **Recreation** (concern regarding direct and indirect impacts to parks and recreation facilities within and near the Plan Area, such as South Park, Yerba Buena Gardens, Gene Friend Recreation Center and Victoria Manalo Draves Park; additional demand will be placed on recreational facilities due to population growth) (This issue was considered in the Initial Study discussion of Recreation and Public Space, which concluded that the Plan would not have a significant effect of this kind; see Appendix B);
- **Public Services** (concern regarding the potential for additional demands on public services due to population growth resulting from the Plan; cumulative impacts to public facilities and conveniences, such as restrooms) (This issue was considered in the Initial Study discussion of, Public Services, which concluded that the Plan would not have a significant effect of this kind; see Appendix B);
- **Geology and Soils** (the Plan should acknowledge the area's soils which are largely fill and subject to seismic risk in conjunction with its proposed land uses and changes to the area's urban form) (this issue was considered in the Initial Study discussion of Geology, Soils, and Seismicity, which concluded that the Plan would not have a significant effect of this kind; see Appendix B);
- **Hydrology** (concern that the Plan Area would be subject to sea level rise) (refer to Section IV.I, Hydrology and Water Quality);
- **Cumulative Impacts** (the EIR analysis should include construction and operations timelines for major projects including the Central Subway) (refer to the cumulative analyses provided in Appendix B, Initial Study, and Sections IV.A through IV.I of the EIR); and
- **Alternatives** ("mid-range" build-out zoning alternatives are suggested) (refer to Chapter VI, Alternatives).

During the 60-day period that this Draft EIR is available for public review, written comments on the accuracy and adequacy of the environmental analysis presented herein may be submitted to the Planning Department. Comments may also be given in person during the public hearing on the Draft EIR (the hearing date is on the cover.) Responses to all substantive comments received on the Draft EIR and submitted within the specified review period will be included and responded to in the Response to Comments document. The Response to Comments document will also contain any minor staff-initiated changes to the Draft EIR. The Draft EIR and the Response to Comments constitute the Final EIR. Prior to approval of the proposed project, the Planning Commission must certify the Final EIR as adequate, accurate and complete, adopt environmental findings and a mitigation monitoring and reporting program (MMRP) for mitigation measures identified in this Draft EIR or modified by the Response to Comments document. Following EIR certification, the Draft EIR and the Response to Comments document will be combined and published in an integrated Final EIR document.

I.B Purpose of this EIR

This EIR is intended as an informational document that in and of itself does not determine whether the Plan or any component of it, such as in the case of the Plan's street network changes, will be approved. The EIR aids the planning and decision-making process by disclosing the potential for significant and adverse impacts. In conformance with CEQA, *California Public Resources Code*, Sections 21000 et seq., this EIR provides objective information addressing the environmental consequences of the proposed project and identifies the means of reducing or avoiding its significant impacts where feasible.

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

- **Information Document.** An EIR is an informational document that will inform public agency decision-makers and the public of the significant environmental effect(s) of a project, identify feasible ways to avoid or minimize significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information contained in the administrative record (Section 15121(a)).
- **Degree of Specificity.** An EIR on a construction project necessarily will be more detailed in the specific effects of the project than will 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. An EIR on a project such as the adoption or amendment of a comprehensive zoning ordinance or a local general plan should focus on the secondary effects that can be expected to follow from the adoption or amendment, but the EIR need not be as detailed as an EIR on the specific construction projects that might follow (Section 15146(b)).
- **Standards for Adequacy of an EIR.** An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information that enables them to make a decision that intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the 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 (Section 15151).

The CEQA Guidelines, Section 15382, define 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, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.” Therefore, in identifying the significant impacts of the proposed project, this EIR concentrates on its substantial physical effects and on mitigation measures to avoid or reduce those effects.

I.B.1 Program- and Project-Level Review of Potential Impacts

This EIR contains both analysis at a “program” level pursuant to CEQA Guidelines Section 15168 for adoption and implementation of the Plan and “project”-level environmental review for street network changes and open space improvements. A program EIR is appropriate for a project that will involve a series of actions that are (1) related geographically, (2) logical parts in a chain of contemplated actions, (3) connected as part of a continuing program, and (4) carried out under the same authorizing statute or regulatory authority and have similar environmental impacts that can be mitigated in similar ways (CEQA Guidelines Section 15168).

The EIR’s evaluation of the draft Central SoMa Plan is programmatic. Its assessment of potential environmental impacts is based on the various Plan components that are required for its implementation and would facilitate its goals and objectives. CEQA Guidelines Section 15168 notes that the use of a programmatic EIR “ensures consideration of cumulative impacts that might be slighted in a case-by-case analysis; avoids duplicative reconsideration of basic policy considerations; allows the lead agency to consider broad policy alternatives and program-wide mitigation measures at an early time, when the agency has greater flexibility to deal with basic problems or cumulative impacts; and allows for a reduction in paperwork.

With respect to the proposed open space improvements and street network improvements described in Chapter II, Project Description, these components are, unless otherwise noted, analyzed in this EIR at the project-level due to the sufficiency of detailed information available.

I.B.2 Analysis Assumptions

This EIR presents a set of reasonable assumptions (as described in Chapter II, Project Description, and Chapter IV, Environmental Setting, Impacts, and Mitigation Measures) pertaining to the overall types and levels of activities that the City anticipates under the Central SoMa Plan as the basis for evaluating the Plan's environmental impacts. Within this context, the Plan components such as *General Plan* text and Zoning Map amendments; *Planning Code* amendments; and other related actions are those that may in some way result in indirect physical changes in the environment and are considered in the evaluation of potential Plan impacts. Pertinent goals, objectives, and policies from the Plan are identified in Chapter II, Project Description, and are considered in the impact evaluations as applicable.

This EIR bases the analyses of impacts on reasonably conservative assumptions to avoid understating the Plan's overall environmental effects.

I.B.3 Alternatives to the Plan

Chapter VI, Alternatives, of this EIR considers a reasonable range of alternatives that would reduce, avoid or eliminate potential impacts of the Plan, while still feasibly meeting most of the Plan's objectives. The five alternatives studied in this EIR include: a **No Project Alternative**; a **Reduced Heights Alternative**, which differs from the Plan in that the allowable building heights on several parcels would be lower; the **Modified TODCO Plan**, which is based on planning and policy proposals from members of the Tenants and Owners Development Corporation; the **Land Use Variant**, which differs from the Plan in that a portion of the Plan Area would be zoned to exclude new residential uses; and the **Land Use Plan Only Alternative**, which differs from the Plan in that the proposed street network changes are excluded.

I.B.4 Environmental Review of Subsequent Projects

CEQA Guidelines Section 15168(c) states that subsequent activities in the program must be examined in light of the program EIR to determine whether an additional environmental document must be prepared. Thus, this EIR assumes that subsequent development projects in the Plan Area would be subject to environmental review at such time as those projects are proposed. The analysis of subsequent projects would be based on existing conditions at the site and vicinity, at such time a project is proposed, and would take into account any updated information relevant to the environmental analysis of the subsequent project (e.g., changes to the environmental setting or updated growth forecasts, models, etc.).

Projects Consistent with the Development Density in the Central SoMa Plan

California Public Resources Code Section 21083.3 and CEQA Guidelines Section 15183 mandate that projects that are consistent with the development density established by existing zoning, community plan, or general plan policies for which an EIR was certified shall not require additional environmental review, except as might be

necessary to examine whether there are project-specific effects which are peculiar to the project or its site. This streamlines the review of such projects and reduces the need to prepare repetitive environmental studies. Therefore, subsequent projects in the Plan Area that are determined to be consistent with the development density established in the Central SoMa Plan would be evaluated in accordance with CEQA Guidelines Section 15183.

The Lead Agency, in most cases the San Francisco Planning Department, is required to limit its evaluation of a project in accordance with Section 15183. This evaluation would examine the environmental effects of the project that:

- 1) Are peculiar to the project or parcel on which the project is located;
- 2) Were not analyzed as significant effects in a prior EIR on the zoning action, general plan, or community plan, with which the project is consistent;
- 3) Are potentially significant off-site impacts and cumulative impacts which were not discussed in the prior EIR prepared for the general plan, community plan or zoning action; or
- 4) Are previously identified significant effects which, as a result of substantial new information which was not known at the time the EIR was certified, are determined to be a more severe adverse impact than discussed in the prior EIR.

Each subsequent development project consistent with the development density established in the Central SoMa Plan would be evaluated to determine whether any of the criteria above are met. This evaluation may include site- and project-specific studies (such as wind tunnel testing or shadow studies), which are appropriately analyzed at the time a specific project is proposed, when sufficient detail is available to enable such analysis. Section 15183(c) specifies that if an impact is not peculiar to the parcel or to the proposed project, then an EIR need not be prepared for that project solely on the basis of that impact. In the case that a subsequent development project in the Plan Area may have site-specific impacts not accounted for in this Program EIR, a subsequent analysis in a Mitigated Negative Declaration or focused EIR may be required depending on whether that project would cause potentially significant impacts. If no such impacts are identified, the proposed project and applicable mitigation measures identified in this EIR would be exempt from further environmental review in accordance with *Public Resources Code* Section 21083.3 and CEQA Guidelines Section 15183.

Streamlining for Infill Projects

California Public Resources Code Section 21094.5 and CEQA Guidelines Section 15183.3 provides a streamlined environmental review process for eligible infill projects by limiting the topics subject to review at the project level where the effects of infill development have been previously addressed in a planning-level decision⁹ or by uniformly applicable development policies.¹⁰ CEQA does not apply to the effects of an eligible infill project

⁹ Planning-level decision means the enactment of amendment of a general plan or any general plan element, community plan, specific plan, or zoning code.

¹⁰ Uniformly applicable development policies are policies or standards adopted or enacted by a city or county, or by a lead agency, that reduce one or more adverse environmental effects.

under two circumstances. First, if an effect was addressed as a significant effect in a prior EIR¹¹ for a planning level decision, then that effect need not be analyzed again for an individual infill project even when that effect was not reduced to a less-than-significant level in the prior EIR. Second, an effect need not be analyzed, even if it was not analyzed in a prior EIR or is more significant than previously analyzed, if the lead agency makes a finding that uniformly applicable development policies or standards, adopted by the lead agency or a city or county, apply to the infill project and would substantially mitigate that effect. Depending on the effects addressed in the prior EIR and the availability of uniformly applicable development policies or standards that apply to the eligible infill project, the streamlined environmental review would range from exemption from environmental review to a narrowed, project-specific environmental document.

Pursuant to CEQA Guidelines Section 15183.3, an eligible infill project is examined in light of the prior EIR to determine whether the infill project would cause any effects that require additional review under CEQA. The evaluation of an eligible infill project must demonstrate the following:

- (1) The project satisfies the performance standards of Appendix M of the CEQA Guidelines;
- (2) The degree to which the effects of the infill project were analyzed in the prior EIR;
- (3) An explanation of whether the infill project will cause new specific effects¹² not addressed in the prior EIR;
- (4) An explanation of whether substantial new information shows that the adverse effects of the infill project are substantially more severe than described in the prior EIR; and
- (5) If the infill project would cause new specific effects or more significant effects than disclosed in the prior EIR, the evaluation shall indicate whether uniformly applied development standards substantially mitigate¹³ those effects.¹⁴

No additional environmental review is required if the infill project would not cause any new site-specific or project-specific effects or more significant effects, or if uniformly applied development standards would substantially mitigate such effects.

¹¹ Prior EIR means the environmental impact report certified for a planning level decision, as supplemented by any subsequent or supplemental environmental impact reports, negative declarations, or addenda to those documents.

¹² A new specific effect is an effect that was not addressed in the prior EIR and that is specific to the infill project or the infill project site. A new specific effect may result if, for example, the prior EIR stated that sufficient site-specific information was not available to analyze the significance of that effect. Substantial changes in circumstances following certification of a prior EIR may also result in a new specific effect.

¹³ More significant means an effect will be substantially more severe than described in the prior EIR. More significant effects include those that result from changes in circumstances or changes in the development assumptions underlying the prior EIR's analysis. An effect is also more significant if substantial new information shows that: (1) mitigation measures that were previously rejected as infeasible are in fact feasible, and such measures are not included in the project; (2) feasible mitigation measures considerably different than those previously analyzed could substantially reduce a significant effect described in the prior EIR, but such measures are not included in the project; or (3) an applicable mitigation measure was adopted in connection with a planning level decision, but the lead agency determines that it is not feasible for the infill project to implement that measure.

¹⁴ Substantially mitigate means that the policy or standard will substantially lessen the effect, but not necessarily below the levels of significance.

To be eligible for the streamlining procedures prescribed in Section 15183.3, an infill project must meet all of the following criteria:

- a) The project site must be located in an urban area on a site that either has been previously developed or that adjoins existing qualified urban uses on at least seventy-five percent of the site's perimeter.¹⁵
- b) The proposed project satisfies the performance standards provided in Appendix M of the CEQA Guidelines.
- c) The proposed project is consistent with the general use designation, density, building intensity, and applicable policies specified in the Sustainable Communities Strategy or an alternative planning strategy.¹⁶

To be consistent with *Plan Bay Area*, a proposed project must be located within a Priority Development Area (PDA), or must meet all of the following criteria:¹⁷

- Conform with the jurisdiction's General Plan and Housing Element;
- Be located within 0.5 miles of transit access;
- Be 100% affordable to low- and very-low income households for 55 years; and
- Be located within 0.5 miles of at least six neighborhood amenities.

The Plan Area is located with the Eastern Neighborhoods and Downtown-Van Ness-Geary PDAs specified in *Plan Bay Area*, the applicable Sustainable Communities Strategy.

Any amendments to the Central SoMa Plan would be evaluated consistent with CEQA Guidelines Section 15152, which states that the analysis of subsequent projects could be "tiered" from this program EIR, relying on the program EIR to the extent that it has evaluated the effects, including cumulative effects, that would result from their development.

I.C 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 Plan, including the project description and requisite approvals, the environmental impacts that would result from the proposed project, mitigation measures identified to reduce or avoid these impacts, alternatives to the proposed project, and areas of controversy and issues to be resolved.

¹⁵ For the purpose of this subdivision "adjoin" means the infill project is immediately adjacent to qualified urban uses, or is only separated from such uses by an improved public right-of-way. Qualified urban use means any residential, commercial, public institutional, transit or transportation passenger facility, or retail use, or any combination of those uses.

¹⁶ *Plan Bay Area* is the current Sustainable Communities Strategy and Regional Transportation Plan that was adopted by the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) in July 2013, in compliance with California's governing greenhouse gas reduction legislation, Senate Bill 375. Metropolitan Transportation Commission and Association of Bay Area Governments, *Plan Bay Area*. Available: <http://onebayarea.org/plan-bay-area/final-plan-bay-area.html>. Accessed April 25, 2016

¹⁷ Choin, Miriam, Association of Bay Area Governments (ABAG) Planning & Research Director, letter to Don Lewis, Environmental Planner, San Francisco Planning Department, February 22, 2016. This document is on file and available for review as part of Planning Department Case File No. 2011.1356E.

- **Chapter I, Introduction.** This chapter (above and the contents herein) includes a discussion of the environmental review process, the comments received on the scope of the EIR, the purpose of this EIR, the organization of the EIR, and opportunities for public participation in the environmental review process.
- **Chapter II, Project Description.** This chapter discusses the project location, project objectives, and project components, including the physical characteristics of the Plan such as changes to zoning and heights, and the proposed street network changes and open space improvements.
- **Chapter III, Plans and Policies.** This chapter provides a summary of the plans, policies, and regulations of the City and regional, state, and federal agencies that have policy and regulatory control over the Plan Area.
- **Chapter IV, Environmental Setting, Impacts, and Mitigation Measures.** This chapter describes the existing environmental setting and regulatory framework, as well as the direct, indirect and cumulative impacts of the proposed project. Mitigation measures are identified where feasible to minimize significant environmental effects of the proposed project. Each environmental topic is discussed in a separate section within this chapter.
- **Chapter V, Other CEQA Considerations.** This chapter describes any growth inducement that would result from the proposed project, recapitulates the significant environmental effects that cannot be mitigated to less-than-significant levels, identifies significant irreversible changes that would result if the proposed project is implemented, and presents areas of known controversy and issues left to be resolved.
- **Chapter VI, Alternatives.** This chapter presents alternatives to the proposed project, including the No Project Alternative, Reduced Heights Alternative, Modified TODCO Plan, Land Use Variant, and the Land Use Plan Only Alternative.
- **Chapter VII, Report Preparers.** This chapter presents the persons involved in preparing this EIR.
- **Appendices.** Appendices include Appendix A: the Notice of Preparation; Appendix B: Initial Study; Appendix C: Historic Resources; Appendix D: Noise; Appendix E: Shadow; Appendix F: Proposed Street Network Changes.

I.D Public Participation

CEQA and Chapter 31 of the *San Francisco Administrative Code* encourage public participation in the planning and environmental review processes. The City will provide opportunities for the public to present comments and concerns regarding the CEQA process. The public is invited to provide comments and concerns regarding the accuracy of the Draft EIR and the CEQA process. The comment period and public hearing dates are indicated on the front cover of this EIR. Written comments may be submitted to the Planning Department to the attention of Lisa M. Gibson, Acting Environmental Review Officer, at 1650 Mission Street, Suite 400, San Francisco, CA 94103 or email to lisa.gibson@sfgov.org, during the specified public review and comment period, and written and oral comments may be presented at public hearings concerning the proposed project. Written comments may also be submitted electronically through the Central SoMa Plan's environmental review portal on the internet, accessible at the following address: <http://centralsoma.sfplanning.commentinput.com>. The comment period and public hearing dates are indicated on the cover of this EIR.

Members of the public are not required to provide personal identifying information when they communicate with the Commission or the Department. All written or oral communications, including submitted personal contact information, may be made available to the public for inspection and copying upon request and may appear on the Department's website or in other public documents.

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CHAPTER II

Project Description

II.A Overview

The subject of this EIR is the 2016 draft Central SoMa Plan (“the Plan”), with modifications described in this chapter.¹⁸ The Plan (formerly “Central Corridor Plan”) is a comprehensive plan for the area surrounding much of southern portion of the Central Subway transit line, a 1.7-mile extension of the Third Street light rail line that will link the Caltrain Depot at Fourth and King Streets to Chinatown and provide service within the South of Market (SoMa) area. The area encompassed by the Plan, referred to as the “Plan Area,” includes roughly 230 acres that comprise 17 city blocks as well as the streets and thoroughfares that connect SoMa to its adjacent neighborhoods: Downtown, Mission Bay, Rincon Hill, and the Mission District. The project sponsor for the Central SoMa Plan is the San Francisco Planning Department, referred to as the “Planning Department.”

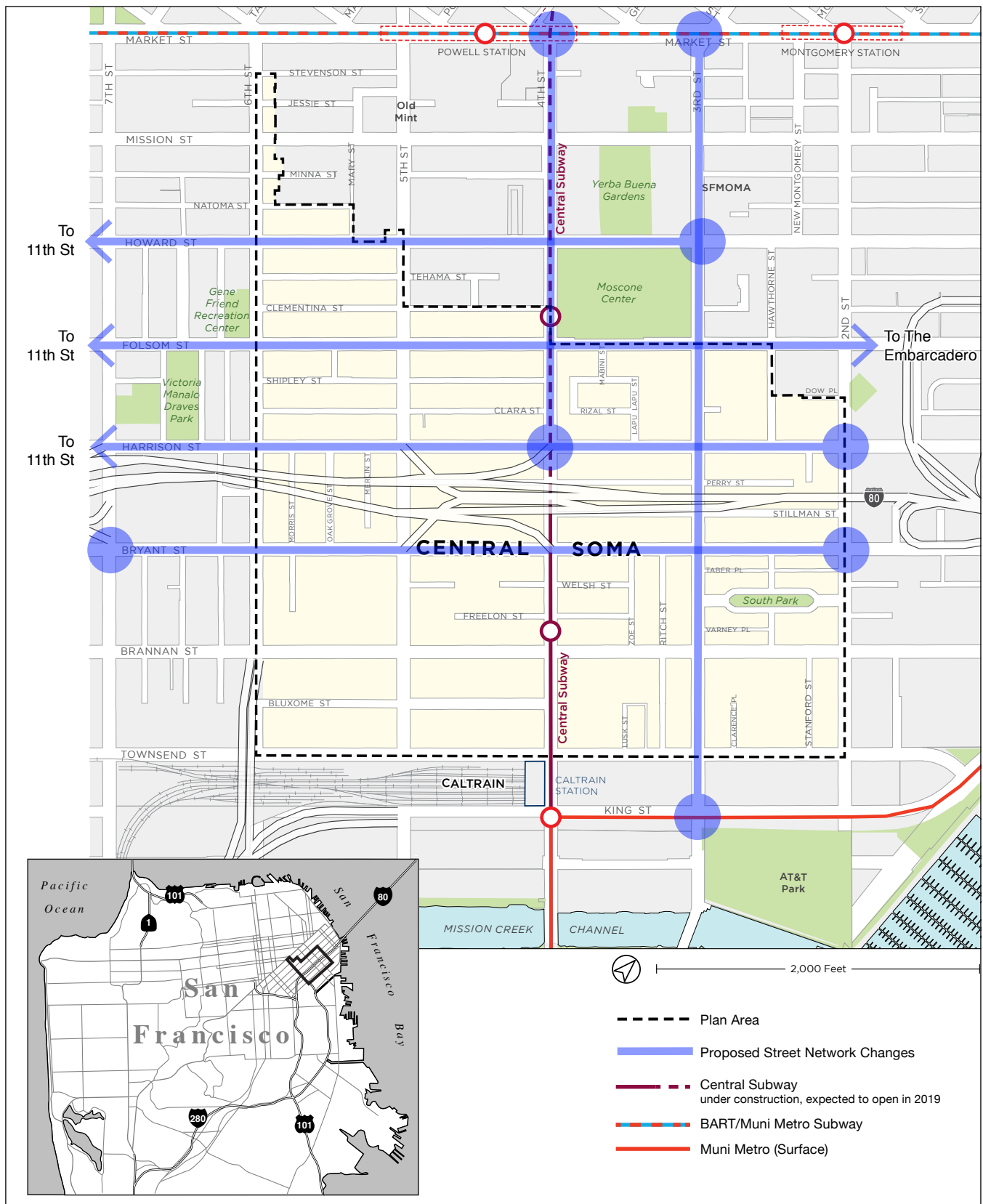
The Plan Area is bounded by Second Street on the east, Sixth Street on the west, Townsend Street on the south, and by an irregular border that generally jogs along Folsom, Howard and Stevenson Streets to the north, as shown in **Figure II-1, Central SoMa Plan Area Boundaries**.

II.A.1 Plan Vision

The Plan seeks to encourage and accommodate housing and employment growth within the Plan Area by: (1) removing land use restrictions to support a greater mix of uses while also emphasizing office uses in portions of the Plan Area; (2) amending existing height and bulk districts; (3) modifying the system of streets and circulation within and adjacent to the Plan Area to meet the needs and goals of a dense, transit-oriented, mixed-use district; and (4) creating new, and improving existing, open spaces.

The Plan envisions Central SoMa becoming a sustainable neighborhood, one in which the needs of the present may be met without compromising the ability of future generations to meet their own needs. The Plan’s sponsor, the San Francisco Planning Department, endeavors to address the social, economic, and environmental aspects of sustainability through a planning strategy that accommodates anticipated population and job growth, provides public benefits, and respects and enhances neighborhood character. That strategy has informed the Central SoMa Plan, which comprehensively addresses a wide range of topics that include land use; transportation infrastructure; parks, open space and recreation facilities; ecological sustainability; historic preservation; urban design and urban form; financial programs and implementation mechanisms to fund public improvements.

¹⁸ The Initial Study evaluated environmental topics based on the 2013 draft Central Corridor Plan. See Chapter IV, Overview, for a discussion of topics covered in the Initial Study.



Plan policies have been drafted in conjunction with the proposed changes to land use and height limits that call for public realm improvements, including planning for new open spaces; changes to the street and circulation system; policies to preserve neighborhood character and historic structures; and strategies that aim to improve public amenities and make the neighborhood more sustainable. The Plan also includes financial programs to support its public improvements through the implementation of one or more new fees, in addition to taxes or assessments that would be applied to subsequent development projects.

II.A.2 Background

The need for the Plan became apparent during the Eastern Neighborhoods planning process, which was initiated in the early 2000s. In 2008, the City and County of San Francisco (the City) approved the Eastern Neighborhoods Rezoning and Area Plans project, which covered 2,300 acres on the city's eastern flank and introduced new land use controls and area plans for the eastern part of SoMa (East SoMa), the Central Waterfront, the Mission, and Showplace Square/Potrero Hill neighborhoods. The Eastern Neighborhoods planning efforts had two primary objectives: to address and attempt to ensure a stable future for PDR ("production, distribution and repair," generally light industrial) businesses in the city, mainly through zoning restrictions; and to plan for a substantial amount of new housing, particularly housing affordable to low-, moderate- and middle-income families and individuals. New housing would be developed in the context of "complete neighborhoods," which would provide sufficient amenities for new residents of these areas.

At that time, the City determined that the pending development of the Central Subway transit project and the development potential of the surrounding area necessitated a separate, focused planning process that took into account the city's growth needs as well as the opportunity to link transportation and land use planning. The Planning Department initiated the Central SoMa Planning Process in earnest in early 2011 with funding from the California Department of Transportation (Caltrans) and the San Francisco Municipal Transportation Agency (SFMTA).

The Planning Department prepared two background documents at the outset that informed the development of the 2013 draft of the Central SoMa Plan: (1) the *Central Corridor Background Report* published in April 2011,¹⁹ and (2) the *Public Realm Existing Conditions Report*, published in October 2011.²⁰ During the initial planning phases, it was determined that the Plan should incorporate areas near the Central Subway alignment that were not included in the Eastern Neighborhoods planning process, which include the Plan Area blocks south of Harrison Street between Fourth and Sixth Streets that were part of the Western SoMa Plan (adopted April 2013).

The Plan's scope and planning policies were shaped both by community outreach efforts and by growth projections. Throughout the initial planning process, the Planning Department met with a range of community stakeholders, and involved City and regional agencies as part of the Plan's Technical Advisory Committee.

¹⁹ San Francisco Planning Department, *Central Corridor Planning Project Background Report*, May 2011. Available at http://www.sf-planning.org/ftp//files/Citywide/Central_Corridor/Central_Corridor_Background_Report.pdf, accessed August 30, 2016.

²⁰ San Francisco Planning Department, *Public Realm Existing Conditions Report*, October 2011. Available at http://www.sf-planning.org/ftp//files/Citywide/Central_Corridor/CC_PublicRealmExistingConditionsReport_Oct2011.pdf, accessed August 30, 2016.

The Planning Department held meetings with over 20 different stakeholder groups, facilitated multiple public meetings and hearings, led two walking tours, conducted a storefront charrette, conducted a print and web-format survey, and provided an interactive informational website.²¹

The city's growth needs were identified through *Plan Bay Area*, the Bay Area's Sustainable Communities Strategy, developed jointly by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC).²² *Plan Bay Area* focuses on ensuring an efficient transportation network, providing more housing choices, and promoting growth in a financially and environmentally responsible way, with the specific goal of reducing greenhouse gas (GHG) emissions. *Plan Bay Area* is a roadmap for meeting 80 percent of the region's future housing needs in areas identified by local governments as Priority Development Areas, or PDAs. *Plan Bay Area* estimates that approximately 92,000 additional housing units and 191,000 additional jobs would be added in San Francisco by 2040, which would equate to roughly 15 percent of the total growth anticipated in the region. The projected housing need represents a 25 percent increase to the city's housing inventory and the projected additional jobs, a 34 percent increase in the city's employment levels over the 2012 baseline year. San Francisco has identified 12 PDAs that are expected to accommodate a substantial portion of this growth. By being transit-rich and walkable, growth in these PDAs are expected to reduce per capita GHG emissions.²³ The Central SoMa Plan Area is comprised of portions of two of San Francisco's designated PDAs: the Downtown-Van Ness-Geary PDA and the Eastern Neighborhoods PDA.

While the City has planned for more than 75,000 new housing units, its efforts have been less focused on the spatial planning needed to accommodate anticipated employment sector growth, especially office growth. Since adoption of the Downtown Plan in 1985, relatively few Downtown building sites remain to support continued job growth into the future. According to *Plan Bay Area* projections, remaining space in Mission Bay and new space added in the Transit Center District would not be sufficient to meet growth needs in the long run. Current low-vacancy rates and high rents in SoMa indicate that this is an area in high demand, and given access to available space, it is anticipated that companies in the information technology and digital media industries would increasingly seek to locate in this area, due to its central location, transit accessibility, urban amenities, and San Francisco's well-educated workforce.

The Planning Department published the Draft Central Corridor Plan in April 2013, then published the current draft Plan in August 2016. In addition to changing the name of the Plan and reorganizing it, the major changes, focusing on those that could result in physical changes to the environment, include the following:

- Changing the boundary of the Plan Area; formerly, the Plan Area extended further north, to the south side of Market Street;
- Eliminating the "mid-rise" height limit option (Option A); this option is considered in this EIR as the Reduced Heights Alternative (see Chapter VI, Alternatives);

²¹ A comprehensive overview of the Plan's public engagement process can be found in the Plan's Appendices, and is summarized online. San Francisco Planning Department, "Public Engagement and Outreach," The Central SoMa Plan website. Available at <http://sf-planning.org/public-outreach-and-engagement>, accessed August 30, 2016.

²² *Plan Bay Area* was necessitated by the adoption of Senate Bill 375, which required regions to prepare a Sustainable Communities Strategy (or Alternative Planning Strategy) to reduce greenhouse gas emissions (GHGs) by linking growth to transit.

²³ San Francisco County Transportation Authority, *Priority Development Areas in San Francisco*, Available at: http://www.sfcta.org/sites/default/files/content/Programming/OBAG/OBAG_SF_PDAs.pdf, accessed August 30, 2016.

- Adding several measures to support retention of PDR space in the Plan Area; and
- Additional objectives, policies, and implementation measures addressing neighborhood sustainability.

II.A.3 Plan Structure

The Plan employs a number of tools common in long-range planning efforts to aid in the achievement of its varied purposes. The Plan defines neighborhood priorities and guides growth and development in the area through the use of goals, objectives, policies, and implementation measures. These tools function together in a hierarchical relationship: goals are the broadest, most important aspirations and reflect the Plan's highest priorities. Objectives are actionable and are directed at accomplishing the Plan goals. Plan policies, which are statements of intent implemented as procedures or protocols to guide land use decisions and to achieve the Plan's desired outcomes, are intended to facilitate its topical objectives. At the most granular end of the spectrum are the Plan's various implementation measures.

The relationship between these planning tools is illustrated by way of a detailed example in **Table II-1, Hierarchy of Planning Tools Used in the Plan**. The Plan includes eight goals. Each goal has several objectives; each objective has one or more policies, and each policy includes one or more implementation measures, all of which are included in the Implementation Strategy table in Part II of the Plan. In addition, Part II of the Plan includes a Public Benefits Package, Requirements for New Development, a Guide to Urban Design, and draft Key Development Sites Guidelines. These add detail to many of the Plan's policies and implementation measures.

TABLE II-1	HIERARCHY OF PLANNING TOOLS USED IN THE PLAN
Planning Tool	Example
GOAL	INCREASE THE CAPACITY FOR JOBS AND HOUSING
Objective	Increase the area where space for jobs and housing can be built.
Policy	Replace existing zoning that restricts capacity for development with zoning that supports capacity for new jobs and housing.
Implementation Measure	Change SLI (Service/Light Industrial), WS-SALI (West SoMa Service, Arts, Light Industrial), WS-MUO (West SoMa Mixed Use Office), and RED (Residential Enclave District) zoning to MUO zoning.

II.B Project Objectives

In accordance with CEQA Guidelines Section 15124, an EIR must present a statement of objectives sought by the proposed project. Objectives define the project's intent, explain the project's underlying purpose, and facilitate the formation of project alternatives. In this EIR, the Plan's eight goals are used as the project objectives. The eight goals are:

1. Increase the capacity for jobs and housing;
2. Maintain the diversity of residents;
3. Facilitate an economically diversified and lively jobs center;
4. Provide safe and convenient transportation that prioritizes walking, bicycling, and transit;

5. Offer an abundance of parks and recreational opportunities;
6. Create an environmentally sustainable and resilient neighborhood;
7. Preserve and celebrate the neighborhood's cultural heritage; and
8. Ensure that new buildings enhance the character of the neighborhood and the City.

II.C Project Location

As shown in Figure II-1, Central SoMa Plan Area Boundaries, the Plan Area is located along the southern portion of the Central Subway transit line, and is bounded by Second Street on the east, Sixth Street on the west, Townsend Street on the south and by an irregular northern border that jogs west north-westward from its eastern-most point at Dow Place and Second Street, across Hawthorne Street to Folsom Street just west of Fourth Street, then northward bisecting two blocks where it reaches its northern-most extent at Stevenson and Sixth Streets.²⁴ Altogether, the Plan Area comprises approximately 230 acres²⁵ and is bordered by the Transbay, Rincon Hill, Mission Bay, and Downtown neighborhoods. It includes portions of the East and Western SoMa Plan Areas.

The EIR studies proposed streetscape changes that could meet the policy objectives of Goal 4, Provide Safe and Convenient Transportation that Prioritizes Walking, Bicycling, and Transit within and extending outside of the Plan Area boundaries. Proposed streetscape changes extend from The Embarcadero to 11th Street along Folsom Street; Third to 11th Streets along Howard Street; Second to 10th Streets along Harrison Street; Second to Seventh Streets along Bryant Street; Market Street to Harrison Street along Fourth Street; and Market Street to King Street along Third Street (Figure II-1). Because the proposed street network changes extend outside of the Plan Area, this EIR analyzes transportation and related issues (including traffic-related noise) in a broader "transportation study area." This area spans from Market Street in the north to Townsend Street in the south, and 11th Street on the west to The Embarcadero on the east.

As discussed below, the Plan includes improvements to several existing parks, recreation facilities, and open space areas, as well as creation of new parks, recreation facilities, and open spaces within the Plan Area. In addition, and as described below in detail, the Planning Department has proposed several other open space (public realm) improvements close to, but outside of the Plan Area boundary, which are intended to serve the needs of businesses and residents within the Plan Area. This EIR examines impacts associated with the development of these parks, recreation facilities, and open space areas both within and outside of the Plan Area. The EIR also examines potential impacts, such as shadow impacts, of Plan-related development within the Plan Area on parks, recreation facilities, and open space areas both within and outside of the Plan Area. Within each section of Chapter IV, Environmental Setting, Impacts, and Mitigation Measures, in this EIR, the area of potential effect is considered in the environmental analysis, which in some instances (such as

²⁴ Streets in SoMa are generally parallel or perpendicular to Market Street, which is oriented at approximately 44 degrees off true north. However, streets parallel to Market Street are generally described as "east/west" streets, while streets perpendicular to Market Street are generally described as running "north/south."

²⁵ The calculation of the Plan Area's acreage is an estimate of the sum of all parcels and adjacent portions of streets extending to their centerlines. This method differs from that used in the Initial Study.

Transportation, as discussed above) extends beyond the Plan Area boundary and may be referred to as the “study area” for that resource topic.

II.D Plan Components

This section describes the Plan analyzed in this EIR. The Plan consists of the proposed goals, objectives, policies, and implementation measures contained in the August 2016 draft of the Central SoMa Plan, plus the following components that are not specifically part of the draft Plan:

- Height limits for several parcels, as shown in Figure II-7 on p. II-19, are higher than those proposed in the 2016 draft Central SoMa Plan. These include the following locations:
 - Block 3733: the Plan examined in the EIR includes a height limit of 130 feet along Folsom Street, whereas the draft Central SoMa Plan proposes a height limit of 85 feet;
 - Block 3762: the Plan examined in the EIR includes a height limit of 240 feet at the corner of Fourth and Harrison Streets, whereas the draft Central SoMa Plan proposes a height limit of 160 feet;
 - Block 3776: the Plan examined in the EIR includes a height limit of 115 feet on a parcel along Brannan Street, whereas the draft Central SoMa Plan proposes a height limit of 55/85 feet;
 - Block 3777: the Plan examined in the EIR includes a height limit of 130 feet on some parcels along Brannan Street, whereas the draft Central SoMa Plan proposes a height limit of 85 feet;
 - Block 3785: the Plan examined in the EIR includes a height limit of 160 feet along several parcels near Sixth and Townsend Streets, whereas the draft Central SoMa Plan proposes a height limit of 85 feet;
 - Block 3786: the Plan examined in the EIR includes a height limit of 250 feet at the corner of Brannan and Fifth Streets, whereas the draft Central SoMa Plan proposes a height limit of 130 feet; and
 - The Plan examined in the EIR includes a height limit of 300 feet on several parcels between Bluxome and Townsend Streets, whereas the draft Central SoMa Plan proposes a height limit of 130 feet.
- Proposed reduction in height limits for several lots on the Moscone North and South blocks:²⁶
 - The Plan examined in the EIR would reduce allowable heights near Third and Mission Streets on block 3734, lot 091 from 340 feet to 250 feet; and
 - The Plan examined in the EIR would reduce allowable heights near Third and Folsom Streets on block 3723, lots 113 through 117, from 340 to 85 feet.
- Parks, recreation facilities, and open space area improvements (see Figure II-14, Existing and Proposed Parks, Open Space, and Recreational Facilities, including the following:
 - Ambrose Bierce Alley: this small narrow alley, which would be transformed into a shared street/dog run;

²⁶ The following proposed reductions in allowable building height are not included in the Central SoMa Plan, but are related Planning Department proposals that would be included in changes to the Planning Code.

- Jessie East Alley: the short stretch of this alley running north-south along the Westfield San Francisco Centre's Mission Street entry would be converted into a shared street;
 - Shipley Street: from Fourth to Fifth Streets, Shipley Street would become a shared public way with traffic calming, streetscape improvements, and small public spaces; and
 - Annie Street: improvements would include an expanded mini-plaza at the intersection of Annie and Market Streets to Stevenson Street, a new pedestrian plaza closed to vehicular traffic between Mission Street and Ambrose Bierce Alley, and a single-surface shared street along the remainder of Annie Street between the two plazas.
- Street Network Changes which are intended to meet the goals of Project Objective and Plan Goal 4, "Provide Safe and Convenient Transportation that Prioritizes Walking, Bicycling, and Transit." These street network changes, discussed in detail beginning on p. II-34, are not specifically proposed in the 2016 draft Plan.

This EIR analyzes potential physical environmental impacts that may occur if the Project were implemented. For street network improvements, this EIR analyzes two options for changes to Howard and Folsom Streets: a one-way option and a two-way option. Street network improvements are analyzed in sufficient detail to allow for project-level CEQA clearance.

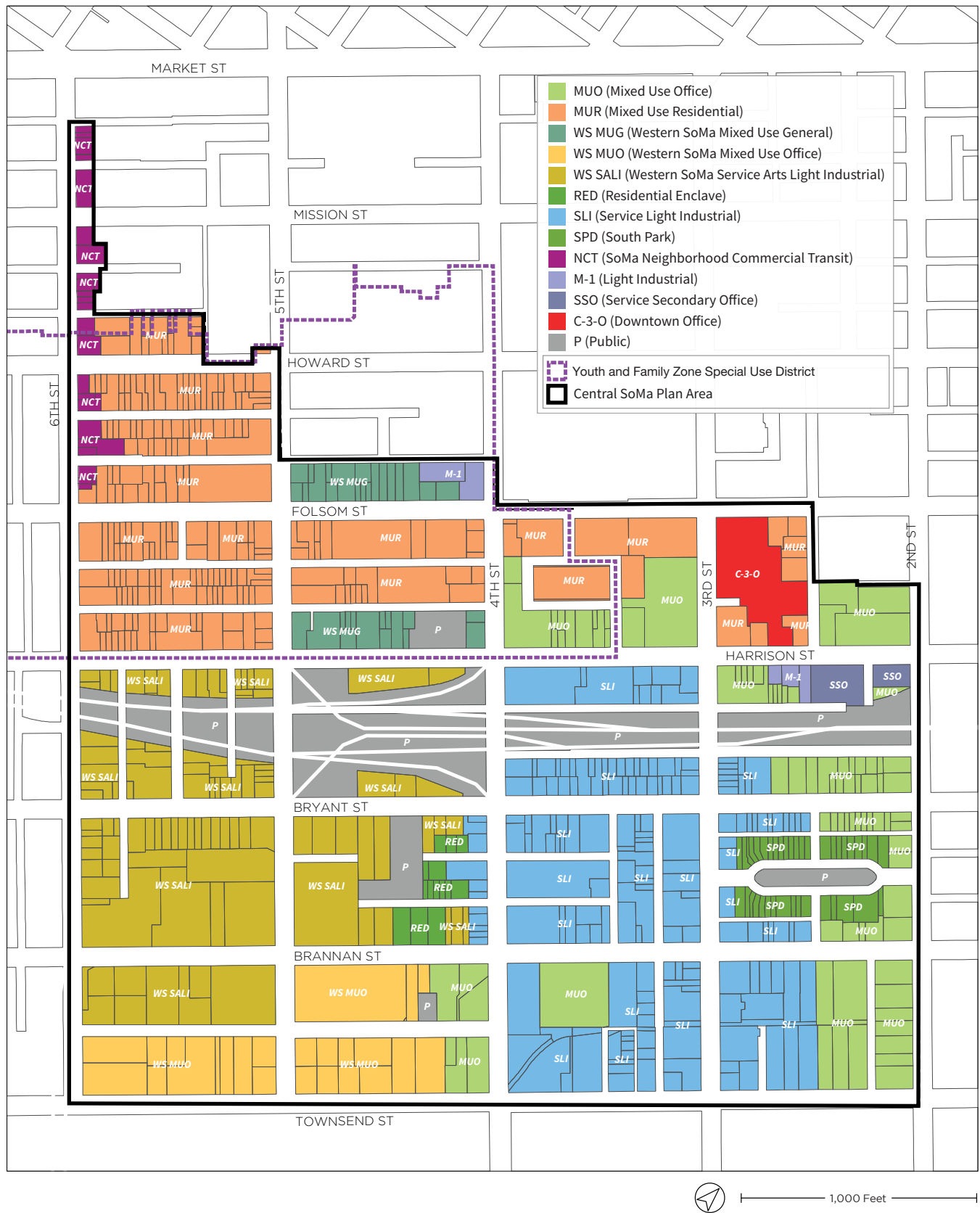
The following description of project components does not include a comprehensive description of the entirety of the Central SoMa Plan and Implementation Strategy. Rather, the description focuses on those policies and implementing mechanisms that have implications for environmental review, because they could result in physical changes to the environment.

II.D.1 Land Use (Zoning) Changes

Consistent with its goal to increase the capacity for jobs and housing (Goal 1), the Plan includes the objective of increasing the area where space for jobs and housing can be built (Objective 1.1). The Plan would accomplish this by retaining existing zoning that supports capacity for new jobs and housing, and replacing existing zoning that restricts capacity for development with zoning that supports capacity for new jobs and housing.

The existing zoning in the Plan Area is shown in **Figure II-2, Existing Plan Area Use Districts. Table II-2, Planning Code Use District Key**, provides a key to the use district designations used in the figure and in the text below. Zoning districts are also referred to as "use districts." Much of the Plan Area north of Harrison Street is currently zoned primarily for housing, designated Mixed Use Residential (MUR), while the Service/Light Industrial District (SLI) and Western SoMa Service, Arts, Light Industrial District (WS-SALI) predominate south of Harrison Street.²⁷ The SLI and WS-SALI use districts do not permit new housing nor office uses, except in historic buildings. These use restrictions have effectively preserved this area with low-scale (one- to two-story), low-density commercial uses.

²⁷ Land within the Plan Area currently zoned WS-SALI was primarily zoned SLI prior to adoption of the Western SoMa Plan in April 2013. These districts are not dissimilar; however, the WS-SALI district permits nighttime entertainment and prohibits all residential and office use (other than in a small Special Use District (SUD) on the south side of Bryant Street, opposite the Hall of Justice), while the SLI district prohibits nighttime entertainment, conditionally permits affordable housing and office use in certain historic buildings and also allows offices for design professionals (and include the same Hall of Justice SUD).



SOURCE: San Francisco Planning Department

Case No. 2011.1356E: Central SoMa Plan
Figure II-2
 Existing Plan Area Use Districts

TABLE II-2 PLANNING CODE USE DISTRICT KEY

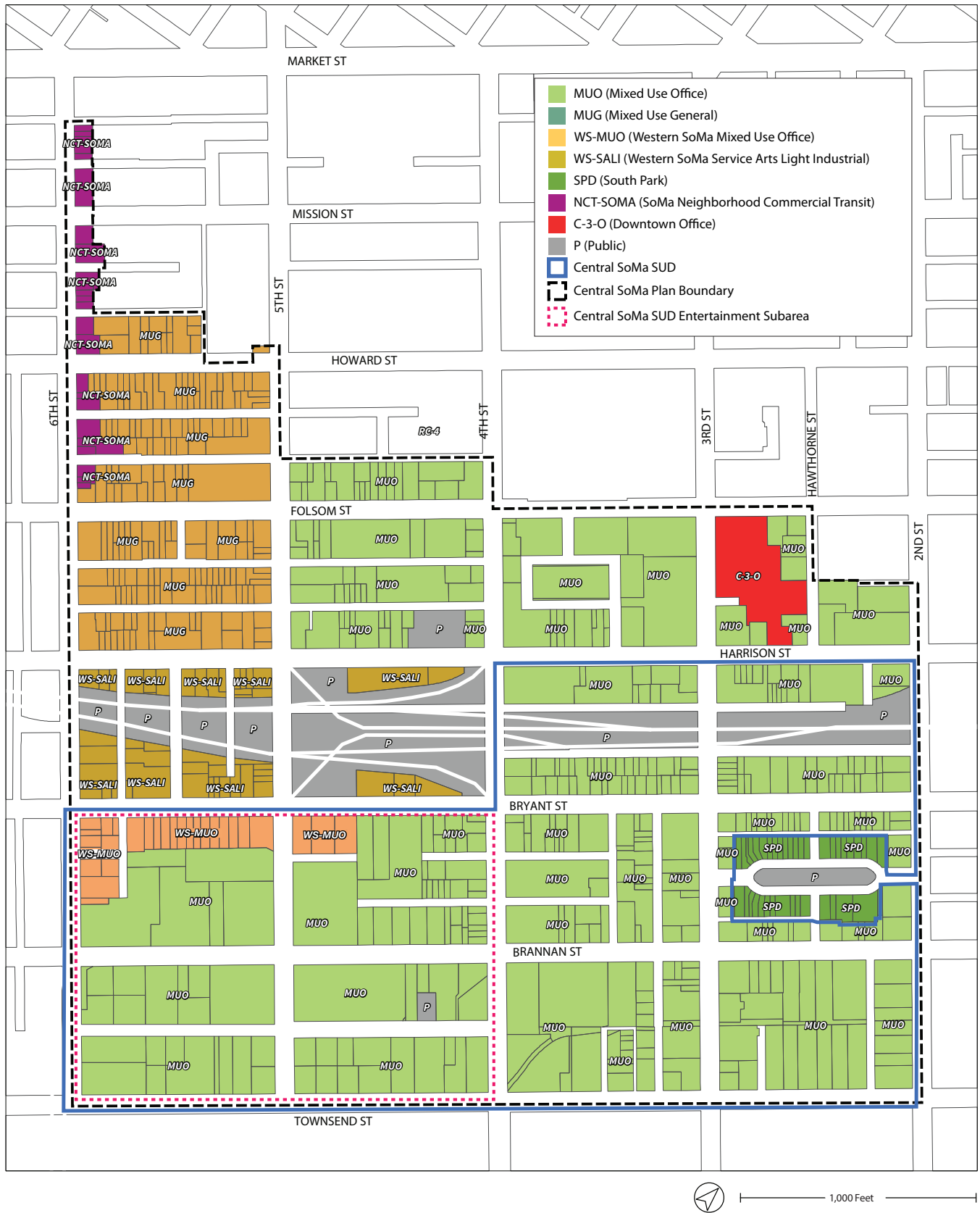
Use District	Use District Category
C-3-O	Downtown Commercial, Office
M-1	Light Industrial
MUG	Mixed Use, General
MUO	Mixed Use, Office
MUR	Mixed Use, Residential
NCT	Neighborhood Commercial Transit
P	Public
RED	Residential Enclave District
SLI	Service/Light Industrial
SPD	South Park District
SSO	Service Secondary Office
WS-MUG	West SoMa Mixed Use General
WS-MUO	West SoMa Mixed Use Office
WS-SALI	West SoMa Service, Arts, Light Industrial

SOURCE: *San Francisco Planning Code.*

The Plan's land use strategy seeks to accommodate transit-oriented growth while preserving and enhancing the Plan Area's mix of uses (office, entertainment, industrial, retail, and residential) and predominantly mid-rise building types. In general, proposed land use changes would remove land use restrictions (such as allowing residential and office uses in areas where these uses are limited or allowed only with certain restrictions) to support a greater mix of uses while also emphasizing office uses in the southern portion of the Plan Area. Proposed zoning for the Plan Area is shown in **Figure II-3, Proposed Plan Area Use Districts**, and an overview of existing and proposed land use districts that highlights the proposed change from industrial protection districts to residential and commercial districts, is shown in **Figure II-4, Generalized Zoning, Existing and Proposed Use Districts**. The Plan would result in the following land use changes:

- North of Harrison Street, the MUR use district west of Fifth Street would be converted to Mixed Use General (MUG). The MUR, Western SoMa-Mixed Use General (WS-MUG), and Light Industrial (M-1) use districts east of Fifth Street would be converted to Mixed Use Office (MUO). The existing zoning districts either limit or do not permit office uses, whereas the MUG and MUO zoning designations would allow for greater flexibility in the mix of land uses, including office development as well as new all-commercial buildings in the MUO use district;²⁸
- The parcels in the block bounded by Third, Folsom, Hawthorne, and Harrison Streets currently designated C-3-O (Downtown Office) would retain this designation; and

²⁸ In MUG use districts, office use is not permitted on the ground floor unless neighborhood-serving. For two- to four-story buildings, office use is permitted only on one floor. For five- to seven-story buildings, office development is permitted on two floors. For buildings eight stories and up, office use is permitted on three floors.

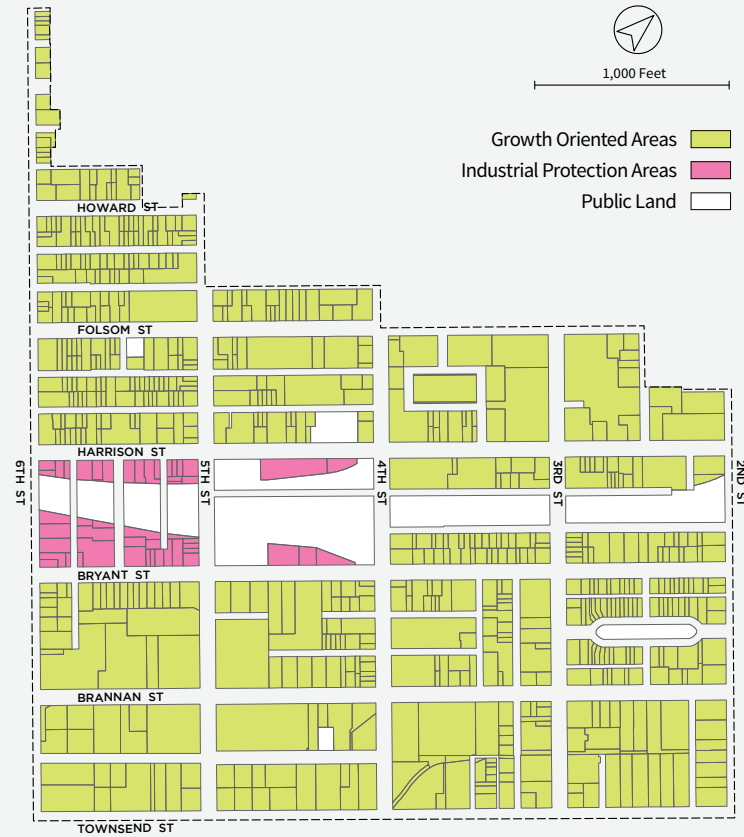


SOURCE: San Francisco Planning Department

Case No. 2011.1356E: Central SoMa Plan
Figure II-3
 Proposed Plan Area Use Districts



Existing



Proposed

- South of Harrison Street, existing use districts would all be converted to MUO or WS-MUO, except for parcels currently designated South Park District (SPD) and the WS-SALI area west of Fourth Street between Harrison and Bryant Streets, which would retain their current zoning designations. Use districts in this area that would be converted to MUO or WS-MUO include Western SoMa-Mixed Use Office (WS-MUO), Residential Enclave (RED), SLI, M-1, and Service Secondary Office (SSO), as well as the area south of Bryant Street currently designated WS-SALI. These existing use districts either limit or restrict office uses or, when office uses are allowed, restrict other uses, such as entertainment or residential uses. For example, the RED use district permits housing as a principal use but requires Conditional Use Authorization for most other uses. Converting these use districts to MUO or WS-MUO would permit a mix of land uses that allow for greater flexibility, as the MUO and WS-MUO districts generally allow office, residential, and most other uses without limitation.

To ensure that the proposed zoning changes foster the development of a neighborhood that is consistent with the Plan's other goals, the Plan contains numerous objectives, policies, and implementation measures that limit and condition development. In particular, these relate to Goal II – Maintain the Diversity of Residents, Goal III – Facilitate an Economically Diversified and Lively Jobs Center, Goal VII – Preserve and Celebrate the Neighborhood's Cultural Heritage, and Goal VIII – Ensure that New Buildings Enhance the Character of the Neighborhood and the City. These are summarized below.

Goal II – Maintain the Diversity of Residents

In addition to maintaining existing *Planning Code*, *Housing Code*, and Mayor's Office of Housing and Community Development requirements for maintaining the existing stock of housing (Objective 2.1), including affordable housing stock (Objective 2.2), the Plan includes policies and implementation measures for meeting its objectives of ensuring that at least 33 percent of new housing is affordable to very low, low, and moderate income households (Objective 2.3); of supporting housing for other households that cannot afford market rate housing (Objective 2.4), of supporting housing for a diversity of household sizes (Objective 2.5), and of supporting the schools, child care, and community services that serve local residents (Objective 2.6).

Goal III – Facilitate an Economically Diversified and Lively Jobs Center

The Plan's objectives of favoring non-residential development over other kinds of growth (Objective 3.1) and supporting the growth of office space (Objective 3.2) would be achieved through the zoning changes already described, by requiring non-residential uses in new development on large parcels, and by reducing current restrictions on non-residential development. In particular, the Plan proposes to establish a Central SoMa Special Use District (SUD), which would include most of the southern part of the Plan Area (Figure II-3). Within the SUD, all projects on sites of 30,000 square feet or more would be required to have two-thirds of all square footage below 160 feet in height be non-residential. Additionally, on the portion west of Fourth Street, entertainment uses would be principally permitted within an Entertainment Subarea of the Central SoMa SUD.

To ensure that removal of protective zoning does not result in a loss of PDR uses in the Plan Area (Objective 3.3), in addition to maintaining a portion of the current SALI use district, as described above and shown in Figure II-3, the Plan contains policies and implementation measures that would limit conversion of PDR space in former industrial districts, require PDR space as part of large commercial developments, and

provide incentives to fund, build, and protect PDR uses. In particular, the Plan includes the following implementation measures to protect PDR uses:

- In buildings on parcels being rezoned from SLI to MUO, require retention of 50% of space permitted as PDR as of January 1, 2016;
- In buildings on parcels being rezoned from SALI to MUO or WSMUO, require 100% retention of space permitted as PDR as of January 1, 2016;
- In new office developments of greater than 50,000 square feet, require new PDR space via one of the following options for preserving existing PDR space or building new PDR space:

On-site:

- On former SALI parcels, require 0.5 FAR or 100% replacement of PDR, whichever is greater;
- On former SLI parcels, require 0.5 FAR or 50% replacement of PDR, whichever is greater;
- Elsewhere, require 0.5 FAR;
- Exempt from land area for purposes of calculating the FAR any land dedicated to affordable housing or publicly-accessible open space fully open to the sky;

Off-site:

- Alternatively, build net new PDR off-site at 1.5 times the on-site requirement. This PDR space could be built anywhere in SoMa;
- Or, preserve existing PDR space at 2.0 times the on-site requirement. This PDR could be preserved anywhere in SoMa not zoned SALI after Plan adoption;
- Explore the potential for developments to meet their PDR requirement through an in-lieu fee to the City to be used for the construction of new PDR and preservation/retention of existing PDR space; and
- Allow buildings to meet their Transferable Development Rights requirements through preservation of existing PDR buildings.

The Plan would seek to facilitate a vibrant retail environment that serves the needs of the community (Objective 3.4). In addition to maintaining the existing *Planning Code* allowance of retail in all zoning districts throughout the Plan Area and its ban on stand-alone big-box retail, the Plan would require ground floor retail along important streets, require formula retail uses to attain a Conditional Use authorization, and require micro retail units²⁹ for developments on lots greater than 20,000 square feet.

The Plan would support development of hotels (Objective 3.5) by permitting hotels in the MUG, MUO, and WS-MUO use districts with Conditional Use authorization. To achieve its objective of recognizing the importance of nightlife uses in creating a complete neighborhood (Objective 3.6), the Plan would allow nightlife where appropriate by continuing to allow restaurants and bars throughout the Plan Area as controlled by district, and by permitting nighttime entertainment uses as-of-right in those areas being converted from SALI to MUO and WS-MUO. As previously noted, within the proposed Central SoMa SUD, in the area west of 4th Street, the Entertainment Subarea would principally permit entertainment uses.

²⁹ A micro retail unit is defined as retail space 1,000 square feet or less.

Goal VII – Preserve and Celebrate the Neighborhood’s Cultural Heritage

In addition to protection of existing PDR uses, which would help ensure that the neighborhood’s tangible and intangible industrial and arts legacy is not lost (Objective 7.3), the Plan includes other objectives, policies, and implementing measures to support the achievement of Goal VII. The Plan would support the preservation, recognition, and well-being of the neighborhood’s cultural heritage resources (Objective 7.2) by facilitating the creation and implementation of a SoMa Pilipinas Cultural Heritage Strategy and by facilitating the creation and implementation of other social or cultural heritage strategies, such as for the Lesbian, Gay, Bisexual, Transgender, Queer (LGBTQ) community.

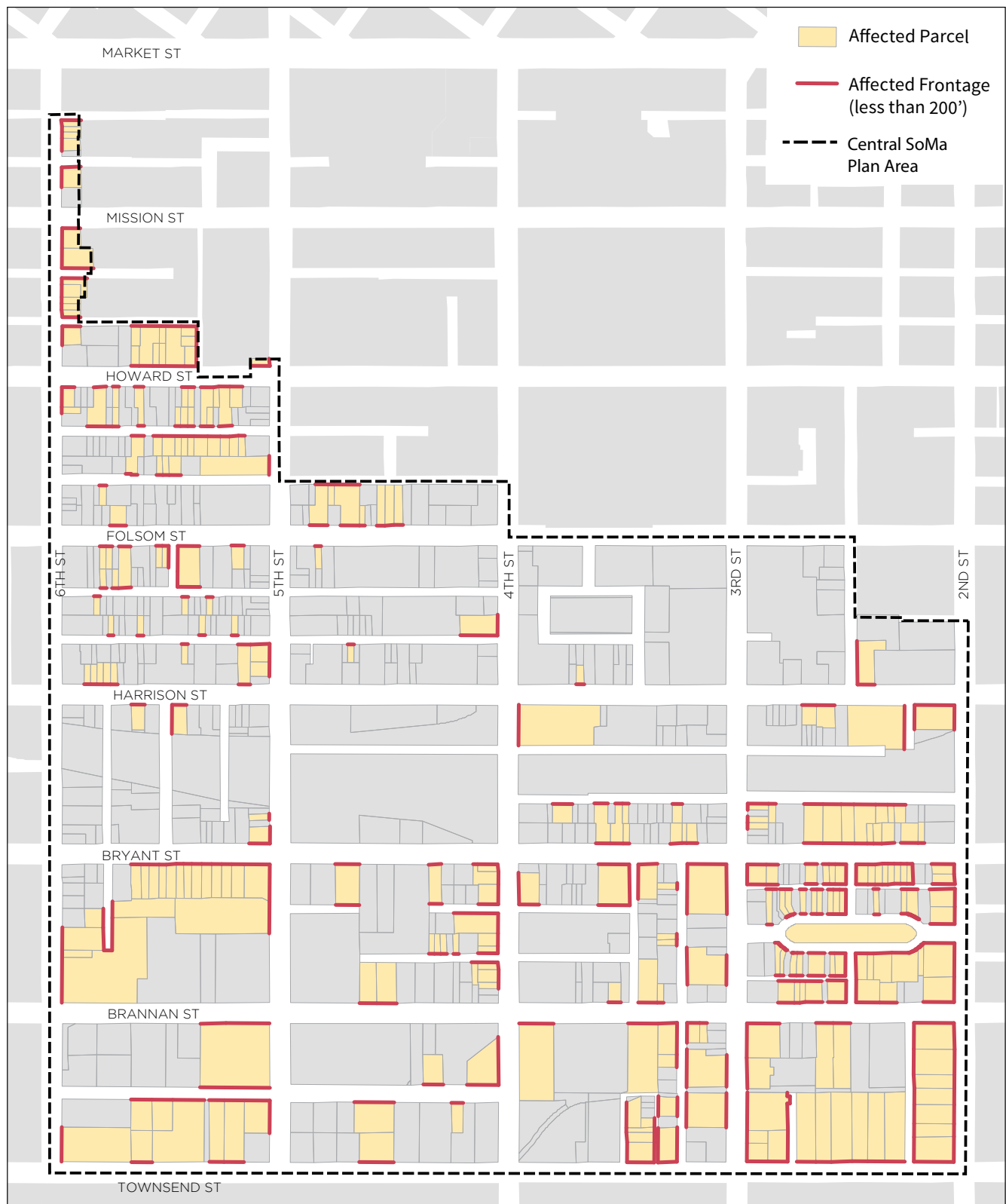
The Plan seeks to preserve historic resources in the built environment (Objective 7.4) by proposing designation of certain properties and districts to Article 10 of the *Planning Code*³⁰ and expanding Article 11 of the *Planning Code*³¹ to include Central SoMa. The Plan would support mechanisms for the rehabilitation and maintenance of cultural heritage properties (Objective 7.5) by extending the Transferable Development Rights (TDR) program³² to Central SoMa and requiring projects to buy TDR from within Central SoMa. In addition, for historic buildings not included in *Planning Code* Article 10 or 11, an amendment to the *Planning Code* would require buildings to explore additions as an alternative to demolition, and would only allow demolition upon demonstrative proof of the infeasibility of additions.

The Plan would support retention of the Plan Area’s existing fine-grained developed pattern and character-enhancing buildings (Objective 7.6) by banning the consolidation of lots containing buildings with historic or neighborhood-character buildings (California Historic Resources Status Codes 1, 2, 3, 4, 5, and 6L) where the frontage that could be merged is under 200 feet in length (excepting the frontage along the north side of Perry Street), and by allowing developments that preserve existing historic and neighborhood character buildings to count the square footage maintained against the development’s TDR requirement—whether as whole buildings or additions. Areas to which the prohibition lot consolidation would apply are shown in **Figure II-5, Prohibition of Lot Mergers**.

³⁰ Article 10 of the *Planning Code* regulates Landmarks and Historic Districts. The City maintains a list of locally designated City Landmarks and Historic Districts, similar to the National Register of Historic Places but at the local level. Landmarks can be buildings, sites, or landscape features. Districts are defined generally as an area of multiple historic resources that are contextually united. The regulations governing Landmarks, as well as the list of individual Landmarks and descriptions of each Historic District, are found in Article 10 of the *Planning Code*.

³¹ Article 11 of the *Planning Code* contains regulations governing properties in designated Conservation Districts. Conservation Districts are located exclusively in the City’s downtown core area. Similar to traditional historic districts, which recognize historic and cultural significance, Conservation Districts seek to designate and protect buildings based on architectural quality and contribution to the character of Downtown. These downtown districts contain concentrations of buildings that together create geographic areas of unique quality and thus facilitate preservation of the quality and character of the area as a whole.

³² San Francisco’s TDR program protects historic buildings by (1) allowing the permanent transfer of the unused permitted floor area from a historic building to other development parcels and (2) using the sale of those transferred rights as a source of funds to rehabilitate the historic structure. TDR allows projects to increase the permitted floor-area ratio on a lot but does not allow projects to exceed height or bulk limits.



SOURCE: San Francisco Planning Department

Case No. 2011.1356E: Central SoMa Plan

Figure II-5
Prohibition of Lot Mergers

Goal VIII – Ensure that New Buildings Enhance the Character of the Neighborhood and the City

Goal VIII includes Objective 8.1, Ensure that the ground floors of buildings contribute to the activation, safety, and dynamism of the neighborhood. This would be accomplished through existing design review requirements and by *Planning Code* amendments that would revise the definition of “active” uses to remove offices and to allow PDR on the ground floor if it meets the transparency and fenestration requirements of non-PDR-uses; by expanding the definition of frontages to include Privately Owned Public Open Spaces (POPOS) and mid-block connections; by ensuring that buildings are built up to the sidewalk edge; and by minimizing parking and loading entrances.

Other objectives, policies and implementation measures proposed by the Plan under Goal VIII would establish regulations that would place additional controls on the Plan’s proposed increase in height and bulk limits, as discussed below.

II.D.2 Changes to Height and Bulk Limits

In addition to the zoning changes described above, the Plan seeks to increase the space available for growth in jobs and housing through changes to the *Planning Code* to allow the development of taller, larger, and an overall diversity of buildings and spatial types within the Plan Area. Existing height and bulk limits, which are contained in the *Planning Code* and Zoning Maps, are shown in **Figure II-6, Existing Plan Area Height and Bulk Districts**, and proposed height and bulk limits are shown in **Figure II-7, Proposed Plan Area Height and Bulk Districts**. **Figure II-8, Generalized Height Limits, Existing and Proposed Height and Bulk Districts**, shows a generalized view of proposed height changes, and **Figure II-9, 3-D Models of Existing and Proposed Potential Building Height and Bulk**, shows a 3-D model of existing and potential development in and around the Plan Area.

Height District Changes

Changes to height limits under the Plan would include the following:

- Within the Plan Area north of Harrison Street, height limits on most parcels would remain between 45 and 85 feet, though there would be several adjustments, both higher and lower, within this range.
- The Plan would substantially increase the height limit for the north side of Harrison Street between Second and Third Streets, from the current range of 85–130 feet to a range of 130–200 feet.
- Other substantial height increases north of Harrison would include the southwest corner of Fourth and Clementina, which would increase from the current range of 55–130 feet to 180 feet; and the southwest corner of Fifth and Howard Streets, which would increase from the current range of 45–85 feet to 180–300 feet.
- South of Harrison Street, proposed amendments are concentrated on the south side of Harrison between Second and Fourth Streets, where current height limits would be increased from 40–85 feet to 130–350 feet.



Numbers indicate height limit in feet - - - Central SoMa Plan Area
 Letters indicate bulk district
 OS - Open Space District



SOURCE: San Francisco Planning Department

Case No. 2011.1356E: Central SoMa Plan

Figure II-6
 Existing Plan Area Height and Bulk Districts



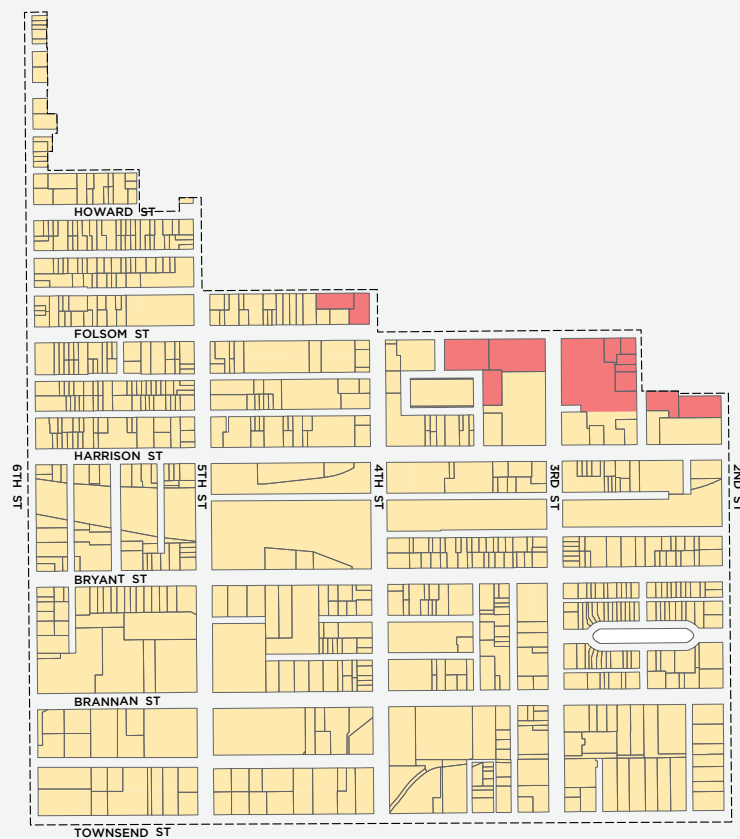
Numbers indicate height limit in feet
 Letters indicate bulk district
 OS - Open Space District

--- Central SoMa Plan Area

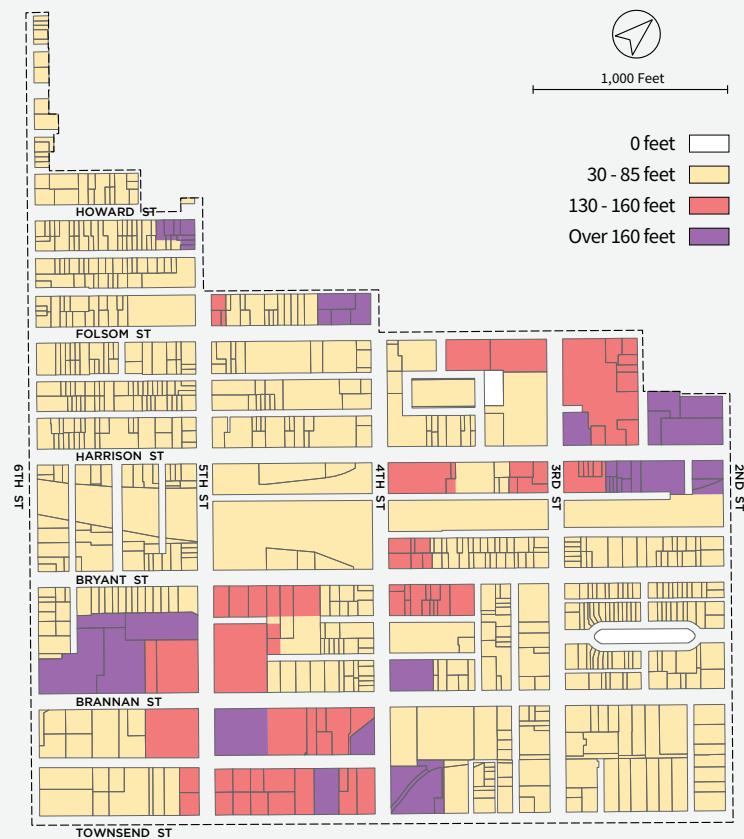


SOURCE: San Francisco Planning Department

Case No. 2011.1356E: Central SoMa Plan
Figure II-7
 Proposed Plan Area Height and Bulk Districts



Existing



Proposed



1,000 Feet

0 feet

30 - 85 feet

130 - 160 feet

Over 160 feet



3-D Model of Existing Buildings – 2016



3-D Model of Potential Development

- Approved Height and Bulk Limits
- Plan Area Proposed Height and Bulk Limits

SOURCE: San Francisco Planning Department

Case No. 2011.1356E: Central SoMa Plan

Figure II-9
3-D Models of Existing and
Proposed Potential Building Height and Bulk

- Substantial height increases would also be concentrated south of Bryant Street, from east of Fourth Street to Sixth Street. Many sites within this area would increase from the current height limit of 30-85 feet to 130–400 feet.
- Lower height limits would be maintained around South Park, along the west side of Fourth Street between Bryant and Brannan Streets, and along the south side of the I-80 freeway between Fourth and Sixth Streets.
- Additional changes to height limits, as described above at the beginning of Section II.D, Project Components.

The Plan Area is currently characterized by mid-rise buildings. While the proposed changes to height and bulk limits seek to maintain this general character, the project would allow for approximately eight towers of between 200 and 400 feet in height on certain sites south of Bryant Street. These include three towers of between about 220 and 270 feet in height on the site of the existing San Francisco Flower Mart. The 400-foot tall tower would be located at Fourth and Townsend, adjacent to the Caltrain station and light rail hub. In addition, the Plan would allow for five 160-foot buildings and about half a dozen buildings of 130 feet in height in the area south of Harrison Street, as well as a 115-foot-tall building on the northwest corner of Brannan and Ritch Streets, between Third and Fourth Streets. The project would also allow for four towers of 200, 240, 350, and 350 feet on the south side of Harrison Street between Second and Fourth streets, and 200 feet on the northeast corner of Third and Harrison Streets, as well as a 300-foot tower on the southwest corner of Fifth and Howard Streets, where the Tenderloin Neighborhood Development Corporation (TNDC) has proposed a residential project. Elsewhere in the Plan Area, most height limits would remain at 85 feet or less; some existing lower height limits would be increased to as much as 85 feet. It is noted that the Plan's proposed height districts take into consideration the State's affordable housing density bonus, as delineated in Assembly Bill 2501 Housing: Density Bonuses, approved by the Governor on September 28, 2016. As such, subsequent residential projects that could be developed under the Plan are not expected to exceed heights proposed by the Plan. The exception may be 100% affordable housing projects, which could utilize the City's affordable housing bonus program in accordance with the provisions, requirements, and limitations of that program.

The Plan contains numerous objectives, policies, and implementation measures to ensure that the proposed amendments to height and bulk districts are consistent with the Plan's Goal VIII – Ensure that New Buildings Enhance the Character of the Neighborhood and the City. These include the following:

Objective 8.2: Ensure that the Overall Development Pattern Is Complementary to the Skyline

The Plan's urban form proposals intend to build on and reinforce existing patterns in SoMa. Height proposals in the Plan are based on a broad three-dimensional consideration of the placement and scale of buildings and potential development sites, taking into account important views and both the natural and the existing built environment. The Plan would utilize design and architecture techniques for Central SoMa's tallest buildings to demarcate the Fourth and Townsend intersection and to distinguish the area on the skyline. These are detailed in the Plan's "Guide to Urban Design" (Part II.D of the Plan).

Objective 8.3: Reinforce the Character of Central SoMa as a Mid-Rise District with Tangible “Urban Rooms”

The Plan would set height limits along the major streets to facilitate podia³³ of 65–85 feet. In addition, the Plan would require that new buildings reinforce the “urban room”³⁴ by requiring that most new buildings be built to the sidewalk edge up to the top of the podium, and by requiring buildings whose height exceeds the width of the major streets to step back at the upper stories. Particular step-back requirements (including “sky plane”³⁵ requirements) would be added to the *Planning Code* for buildings 160 feet in height or less, with additional controls for buildings above 160 feet in height. Bridges between buildings would not be allowed above 130 feet in height.

As noted above, existing height limits would be maintained around South Park and the South End Historic District Extension.³⁶ The proposed height limits are intended to minimize shadow impacts on South Park, Yerba Buena Gardens, and the Bessie Carmichael School schoolyard.

Objective 8.4: Ensure that Narrow Streets and Alleys Maintain Their Intimateness and Sense of Openness to the Sky

The Plan would require new buildings facing alleys and narrow streets to step back at the upper stories.

Objective 8.5: Ensure that Large Development Sites Are Carefully Designed to Maximize Public Benefit

The Plan would provide greater flexibility for large development sites in return for improved design and additional public benefits. The Plan includes a *Planning Code* amendment to establish “Key Site Design and Development Guidelines” that would lay out more detailed design guidance and convey specific exceptions allowed and specific public benefits received in return. For example, an additional 25 feet of height would be allowed on sites where such flexibility in height would facilitate the provision of affordable housing and/or public open space beyond what would otherwise be required by the Plan, as long as that additional height did not increase the overall amount of development otherwise enabled by the Plan or cause new significant impacts related to wind and shadow.

³³ The “base,” the “shaft,” and the “crown” are the elements of a classical skyscraper. When the difference in orientation and width between the shaft and the base make the shaft look like a separate building placed on top of the base instead of one integrated building, the base is called a “podium.” Podia is the plural of podium.

³⁴ A comfortable “urban room” is achieved when the perceived height of a building is approximately equivalent to the width of the street.

³⁵ “Skyplane” is a set of design guidelines intended to limit the “canyon effect” that often results from the presence of tall buildings, by promoting the widening of the sky view from street level.

³⁶ The South End Historic District Extension is roughly bounded by Brannan Street to the north, Third Street to the east, Townsend Street to the south, and Lusk Street to the west. It is situated just north of a large area of contemporary redevelopment between King and Townsend Streets.

Objective 8.6: Promote High Quality Architecture that Enhances the Neighborhood

In addition to existing design review requirements, the Plan would promote high quality architecture that enhances the neighborhood by implementing the sky plane controls referred to above, consistent with maintenance of the urban room concept. Also, to ensure large projects integrate within existing urban fabric and provide a varied character, in addition to existing design review requirements, the Plan would require projects on sites that are larger than two acres to be designed with multiple architects.

Objective 8.7: Establish Clear Rules for Development

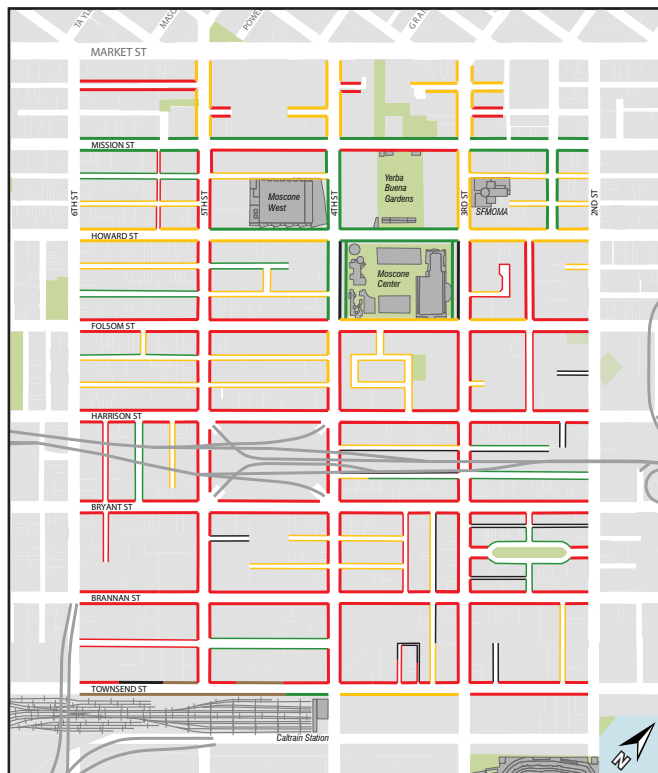
The Plan would require that, wherever possible, the City would delineate via the *Planning Code* what is allowed and not allowed in new development. This would be accomplished through utilization of CEQA's Community Plan Exemption process for streamlining environmental review of complying projects, and by minimizing potential exceptions and exemptions within the *Planning Code*. See Chapter I, Introduction for a description of environmental review procedures for subsequent development projects.

II.D.3 Circulation and Streetscape Improvements

The Plan Area's relatively high density is supportive of walking, although its wide, predominately one-way streets, long blocks, narrow sidewalks, few amenities, and presence of an elevated freeway and associated ramps generally do not contribute to a positive pedestrian experience and present many physical challenges for pedestrian circulation in the area. Existing sidewalk conditions are shown in **Figure II-10, Sidewalk Conditions & Proposed Pedestrian Crosswalks**. Bicycle lanes within the Plan Area exist on Howard, Folsom, and Townsend Streets, and the San Francisco Bicycle Plan designates additional lanes on Second and Fifth Streets.³⁷ Existing bicycle lanes are shown in **Figure II-11, Existing and Proposed Bicycle Lane Network**.

The increases in jobs and housing that would be enabled by the Plan are expected to increase demand for travel in the Plan Area, while safe and convenient pedestrian, transit, and bicycle access to and within the Plan Area is necessary for the success of the envisioned land uses. Part of this demand will be met by the Central Subway, which is expected to be operational by 2019, by other nearby transit facilities, and by other planned transit improvements such as the Municipal Transportation Agency's Muni Forward project. The Plan includes Goal IV – Provide Safe and Convenient Transportation that Prioritizes Walking, Bicycling, and Transit. To reach this goal, the Plan proposes the following objectives and related policies and implementation measures:

³⁷ The San Francisco Bicycle Plan is available for review online: <https://www.sfmta.com/projects-planning/projects/2009-san-francisco-bicycle-plan>. Accessed October 16, 2016.



Existing Plan Area Sidewalk Conditions (Top Figure)

- No sidewalk
- No sidewalk, pedestrian walkway provided (no curb)
- Sidewalk width less than Better Streets Plan (BSP) minimum (BSP standards are 12' for major streets, 9' other)
- Sidewalk width meets BSP minimum but less than recommended (BSP standards are 15' for major streets, 12' other)
- Sidewalk width meets BSP recommended width

1,000 Feet

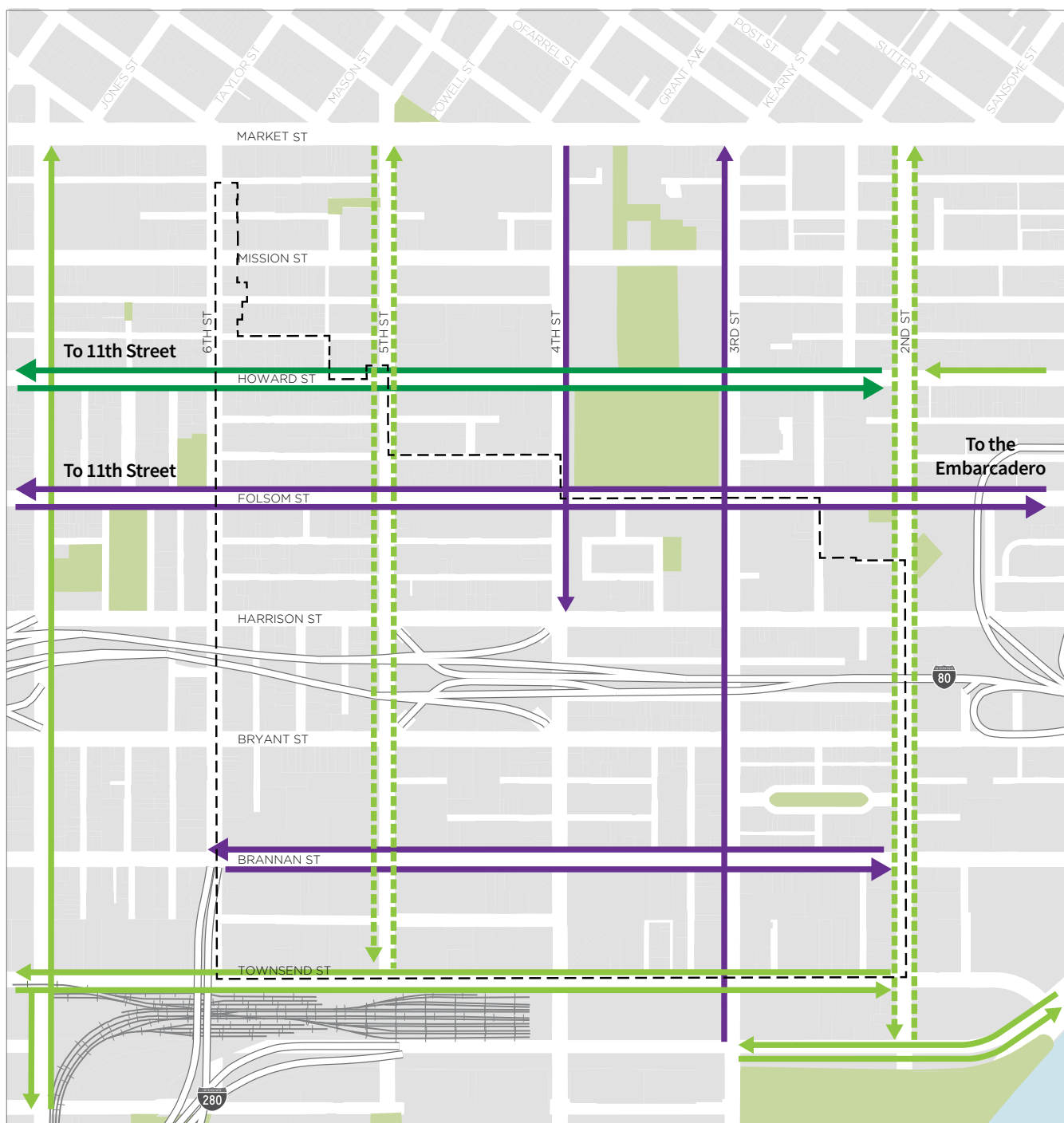
Proposed Pedestrian Crosswalks (Bottom Figure)

- New midblock crosswalk
- >—< New midblock crosswalk proposed in other plans and projects
- Closed crosswalks at existing signalized intersection, to be opened
- Existing crosswalks across major streets at minor streets (existing crosswalks at the intersection of two major streets are not shown)

1,000 Feet



Note: New midblock crosswalks across one-way streets would be signalized, as well as those across two-way Howard Street configuration. New Midblock crosswalks across two-way Folsom Street configuration would be signalized east of Fourth Street and unsignalized west of Fourth Street.



- Central SoMa Plan Boundary
- Proposed one-way cycletracks
- Proposed bicycle lanes
- Existing bicycle lanes
- Bicycle lanes and cycle tracks in other plans and projects



1,000 Feet

Existing and proposed bicycle network (assuming two-way Folsom and Howard streets)

SOURCE: San Francisco Planning Department

Case No. 2011.1356E: Central SoMa Plan
Figure II-11
 Existing and Proposed Bicycle Lane Network

Objective 4.1: Provide a Safe, Convenient, and Attractive Walking Environment on All the Streets in the Plan Area

This objective would be met through the following:

- Adding new crosswalks mid-block on major streets and at intersections of major and minor streets (Figure II-10);
- Widening and improving sidewalks on major streets to meet Better Streets Plan standards;
- Requiring a five-foot setback on all development on Fourth Street south of Bryant Street. This setback would occur at the ground floor, and have a minimum height of 25 feet;
- Prohibiting new curb cuts on key major streets and limiting them elsewhere;
- Opening currently closed crosswalks at signalized intersections, whenever possible (Figure II-10);
- Improving intersections at freeway ramps;
- Providing corner sidewalk extensions to enhance pedestrian safety at crosswalks, in keeping with the Better Streets Plan;
- Improving the conditions on narrow streets and alleys for people walking;
- Adding street trees and street furnishings to sidewalks wherever possible, in keeping with the Better Streets Plan;
- Expanding the pedestrian network wherever possible through creation of new narrow streets, alleys, and mid-block connections; and
- Using public art, lighting, and other amenities to improve the pedestrian experience beneath elevated freeways.

Objective 4.2: Make Cycling a Safe and Convenient Transportation Option throughout the Plan Area for All Ages and Abilities

The Plan seeks to create a comprehensive network of safe and convenient bicycle routes, as well as adding new bicycle infrastructure, such as bicycle parking, to support ridership. The Plan would implement the recommendations of the City's Bicycle Plan to provide new or enhanced bicycle facilities on Howard, Folsom, Third, Fourth, and Brannan Streets. Proposed new bicycle facilities are shown in Figure II-11. More-detailed discussion of proposed new bicycle lanes is included in the discussion of Street Network Changes beginning on p. II-34.

Objective 4.3: Ensure that Transit Serving the Plan Area Is Adequate, Reliable, and Pleasant

The Plan proposes the following to prioritize transit:

- A network of dedicated transit lanes in order to enhance transit travel times and reliability—Existing dedicated transit lanes are shown in **Figure II-12, Existing Dedicated Transit Lanes**, and proposed dedicated transit lanes are shown in **Figure II-13, Proposed Dedicated Transit Lanes**. New dedicated transit lanes, identified by the Muni Forward program, are already proposed on Fourth, Harrison,

Bryant, and Folsom Streets. Detailed plans for dedicated transit lanes are described further under Street Network Changes, beginning on p. II-34; and

- Upgrade existing and planned dedicated transit lanes with self-enforcing mechanisms such as curbs, channelizers, and colored or textured pavements to discourage or prevent use by unauthorized private vehicles.

In addition to the above proposals, the Plan calls for the continued evaluation and funding of the transit network to ensure that it adequately serves evolving needs within the Plan Area, including supporting funding to implement the Muni Forward program.

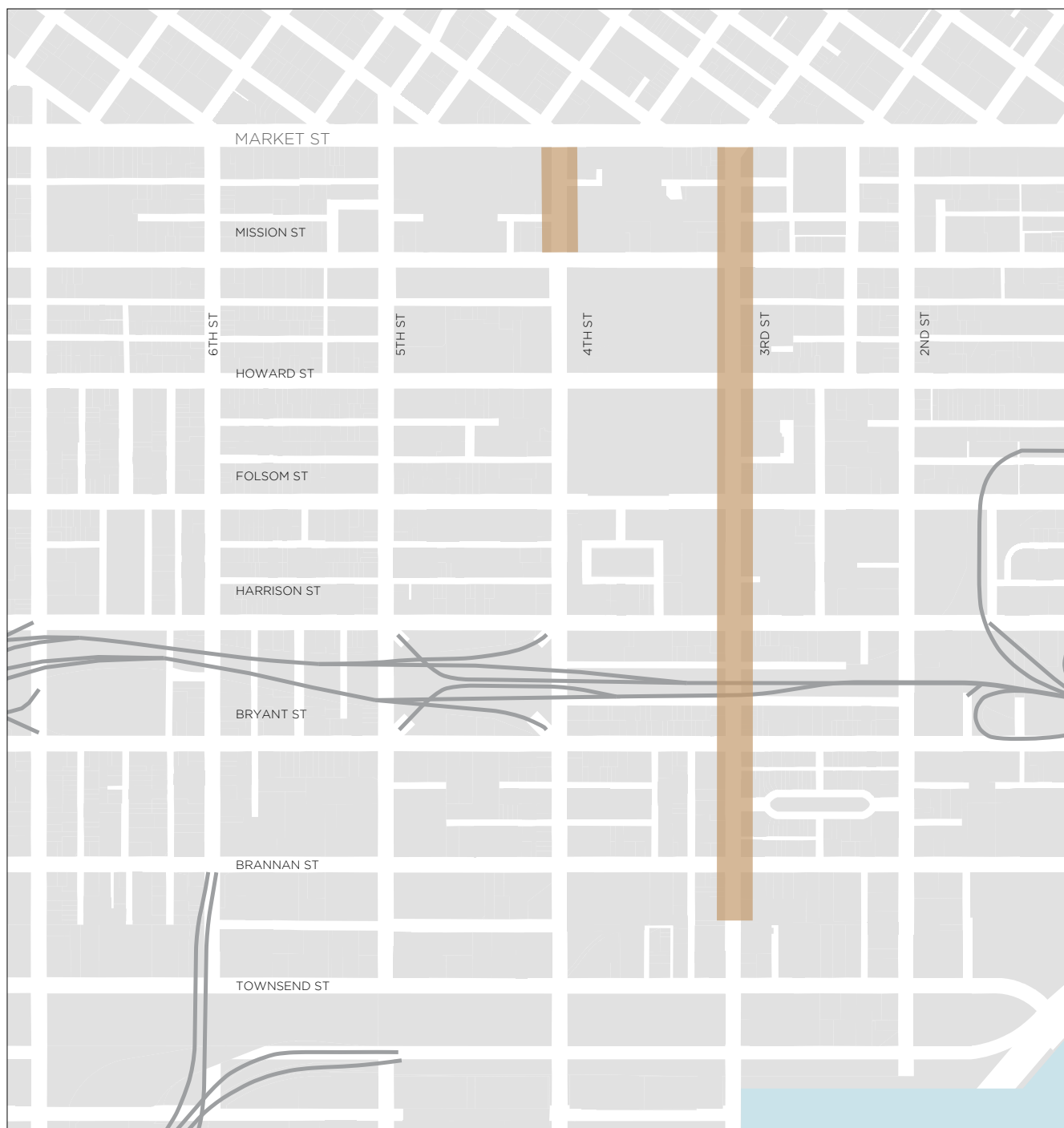
Objective 4.4: Encourage Mode-Shift away from Private Automobile Usage


This objective would be met by continuing implementation of Transportation Demand Management (TDM) strategies to encourage use of alternatives to the private automobile, as already required by the *Planning Code*, and by limiting the amount of parking in new development. Specifically, proposed *Planning Code* amendments would reduce the amount of parking allowed as follows:

- For residential development, set the as-of-right amount at 0.5 spaces per unit, with no potential for more; and
- For all non-residential development, set the maximum amount allowed as follows:
 - Office: one space for every 3,500 square feet;
 - Retail: one space for every 1,500 square feet; and
 - All other uses as currently listed in *Planning Code* Section 151.1.

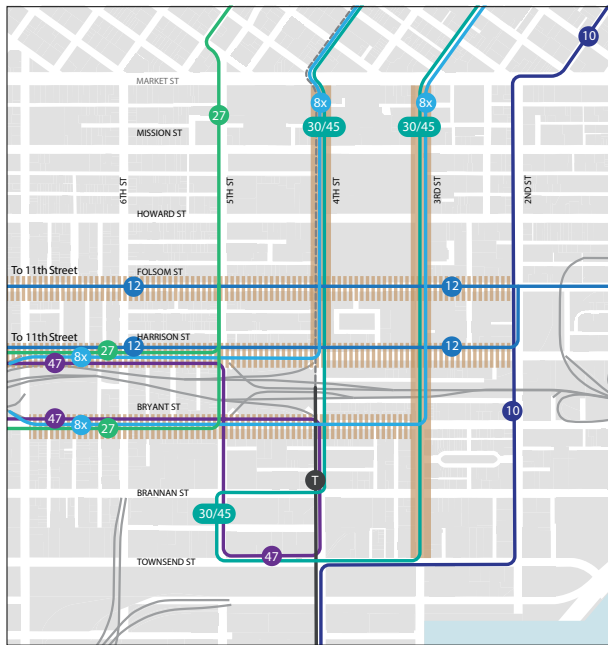
Objective 4.5: Accommodate Regional and Through Traffic Where Necessary, But Mitigate the Impacts of Such Traffic on Local Livability and Circulation

The Plan seeks to maintain the ability of certain streets to accommodate through-traffic while ensuring they meet minimum needs for safety and comfort of all road users, with Bryant and Harrison Streets designed and constructed to accommodate more through traffic than other east-west streets in the Plan Area. Also, through a *Planning Code* amendment, new buildings would be designed to accommodate delivery of people and goods with a minimum of conflict. Specifically, sponsors of development projects that provide more than 100,000 square feet would be required to prepare a Driveway and Loading Operations Plan (DLOP), and submit the plan for review and approval by the Planning Department and the San Francisco Metropolitan Transportation Agency (SFMTA). The DLOP would focus on reducing potential conflicts between driveway operations (including loading activities) and pedestrians, bicycles and vehicles, and maximizing reliance of on-site loading spaces to accommodate new loading demand. The DLOP would consider loading dock management, large truck access, garage/loading dock attendants, and refuse collection. The DLOP would also look at designs to separate loading from sensitive land uses as well as building design strategies to better support off-peak and unattended deliveries.

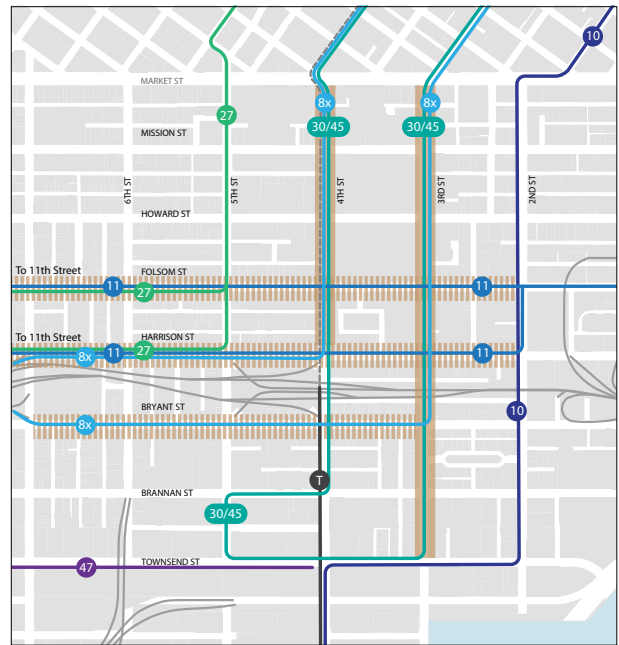


 Existing dedicated transit lanes*

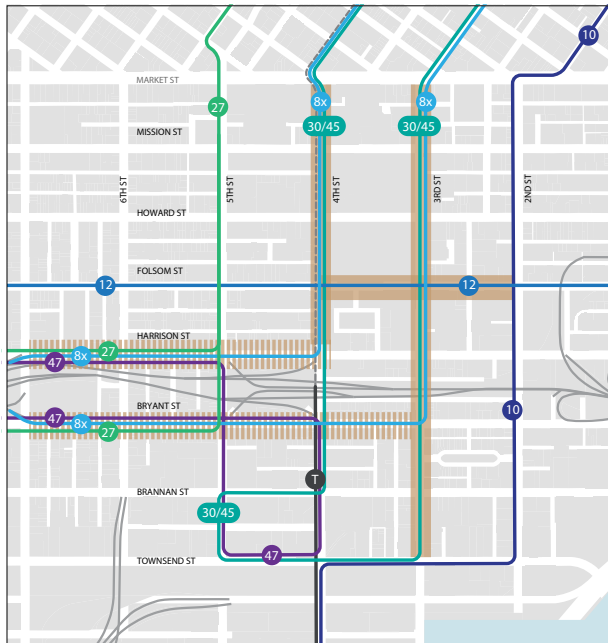
* Note: Existing and planned dedicated transit lanes on Mission and Market Streets and north of Market Street are not shown.



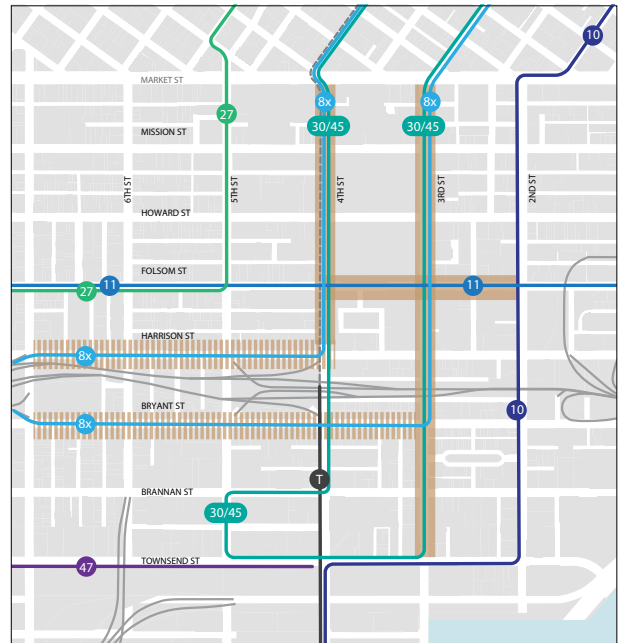
Howard/Folsom One-Way: Proposed Dedicated Transit Lanes



Howard/Folsom One-Way: Proposed Dedicated Transit Lanes with Muni Forward



Howard/Folsom Two-Way: Proposed Dedicated Transit Lanes



Howard/Folsom Two-Way: Proposed Dedicated Transit Lanes with Muni Forward

- Full-time dedicated transit lane
- Peak period dedicated transit lanes

* Market and Mission streets dedicated transit lanes not shown



Not to Scale

II.D.4 Open Space and Public Realm Improvements

Like SoMa generally, the Central SoMa Plan Area has limited public open spaces and facilities. South Park is the only large-scale open space facility in the Plan Area, and the only Recreation and Park Department property. Yerba Buena Gardens, including its children's garden and carousel, is just north of the Plan Area, and Victoria Manalo Draves Park and the South of Market Recreation Center are just beyond the western Plan Area boundary, as shown in **Figure II-14, Existing and Proposed Parks, Open Space, and Recreational Facilities**. The uneven distribution of these community assets leaves portions of the area underserved with open space. The General Plan Recreation and Open Space Element (ROSE), adopted in 2014, identifies portions of the Plan Area as in need of new open space.

The East SoMa Area Plan identifies two areas for open space acquisition within or partially within the Plan Area: Fourth Street between I-80 and Townsend Street; and near the block bounded by Howard, Fourth, Folsom and Fifth Streets. The East SoMa Plan, along with the Western SoMa Community Plan, also identified streets and alleys in the area for improvement as green connections linking neighborhoods to open space. These improvements are consistent with both the ROSE and the San Francisco Better Streets Plan.

The Plan includes Goal 5 – Offer an Abundance of Parks and Recreational Opportunities, which includes numerous objectives, policies, and implementing measures, including the establishment or improvement of several parks, open space areas, and recreational facilities, as shown in Figure II-14. Goal 5 objectives are as follows:

Objective 5.1: Maximize the Benefit Provided by Existing Public Parks and Recreational Facilities

This objective would be met by supporting funding for the rehabilitation of Gene Friend Recreation Center and for improved programming at Victoria Manalo Draves Park.

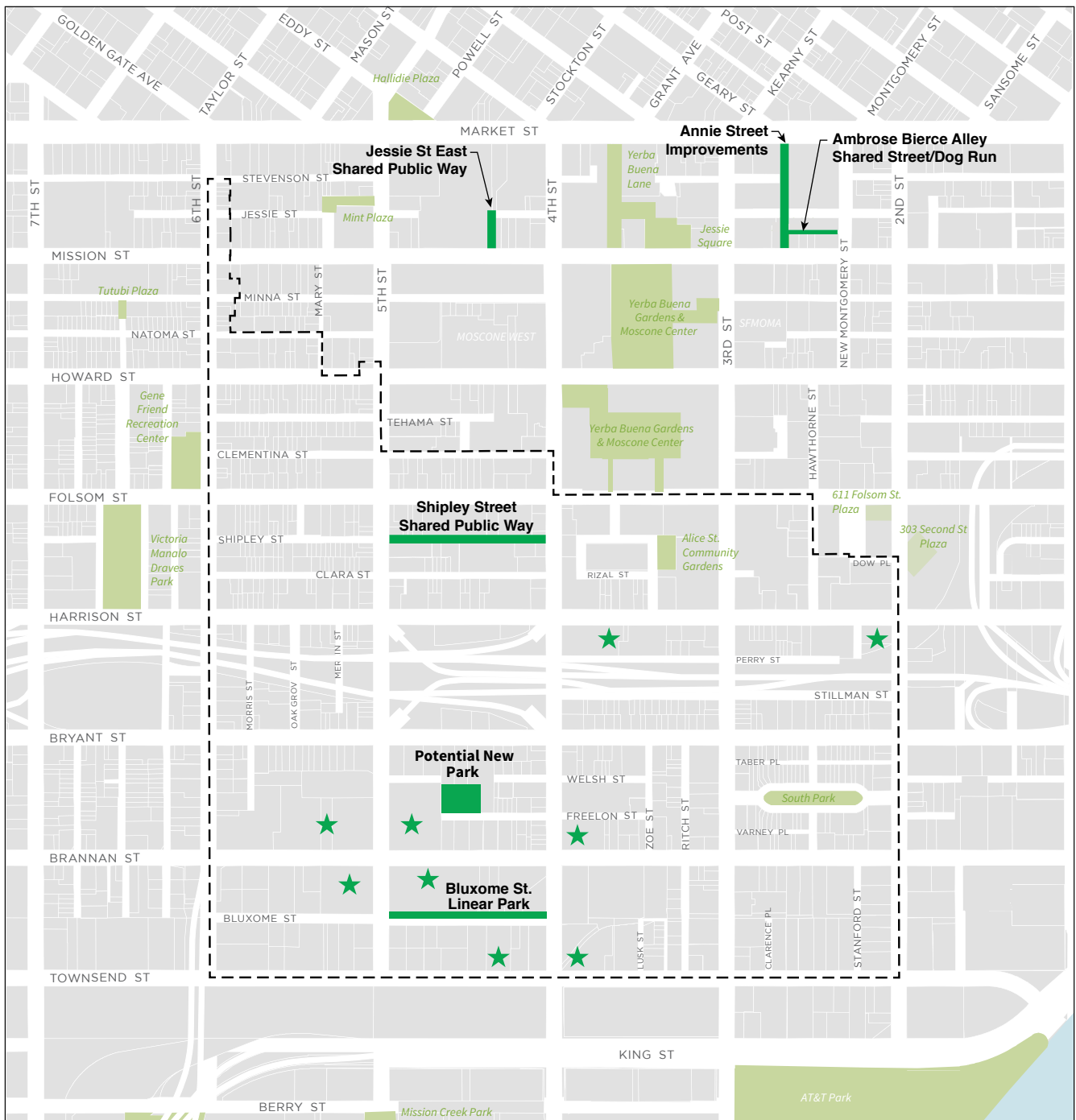
Objective 5.2: Create New Public Parks

The Plan includes several proposals for the creation of new public parks:

- Create a new public park in the southwest part of the Plan Area on the block bounded by Fourth, Fifth, Bryant and Brannan Streets;
- Create a new linear park along Bluxome between Fourth and Fifth Streets; and
- Pursue the creation of a large new park within or near Central SoMa, including site identification and design, and potentially site acquisition and construction pending costs and funding.

Objective 5.3: Create New Public Recreational Opportunities

In addition to the new parks listed above, the Plan calls for the development of new public recreation facilities other than parks, including working with developers of large new projects to locate and create a new public recreation center, and working with Caltrans to develop new public recreational facilities under the I-80 freeway. The Plan would not require displaced private recreational facilities to be rebuilt within the current Western SoMa Special Use District.



SOURCE: San Francisco Planning Department

Case No. 2011.1356E: Central SoMa Plan
Figure II-14
 Existing and Proposed Parks, Open Space,
 and Recreational Facilities

Objective 5.4: Utilize the Street Right-Of-Way for Additional Gathering and Recreational Opportunities

The Plan would promote, where appropriate, pedestrian-only or shared-street design concepts for narrow streets, alleys, and mid-block connections. Specifically, the Plan would support pedestrian-only or shared streets in new developments required to provide mid-block connections.

Objective 5.5: Augment the Public Open Space and Recreation Network with Privately-Owned Public Open Spaces

The Plan would require new non-residential development to provide Privately-Owned Public Open Spaces (POPOS) that address the needs of the community, by requiring new office and hotel development of 25,000 square feet or more to provide POPOS at a rate of one square foot for every 50 square feet of gross floor area. These POPOS would be required to meet certain design standards and incentives for providing community space. POPOS would be required to meet the following requirements:

- To be at grade and open to the sky, unless they provide an enclosed sports facility;
- To be on-site or within 900 feet of the development;
- To be open evening and weekends; and
- To be lined by active uses.

Every square foot of a playground, community garden, sport court, and/or dog run within a POPOS would reduce required open space by 33 percent.

In addition to the Plan measures described above, the Planning Department has proposed additional open space and public realm improvements outside of the Plan Area, which are intended in part to serve Central SoMa residents and businesses. These are shown in Figure II-14 and described at the beginning of Section II.D, Plan Components.

II.D.5 Sustainability

Plan Goal VI is to Create an Environmentally Sustainable and Resilient Neighborhood. To achieve this, the Plan calls for a Central SoMa Eco-District, which aims for neighborhood-level sustainability through district-serving water and energy conservation, the reduction of greenhouse gas (GHG) emissions and generation of renewable energy, waste and wastewater reduction, and increasing resilience to climate change and other potentially catastrophic disturbance.

Many of the Plan's policies and implementation measures for sustainability call for continued or focused implementation of existing codes and programs, including the City and State *Green Building Codes*, as well as the City's *Environment Code*, Floodplain Management Ordinance, Complete Streets Program, and *Health Code*. Other measures to meet the Plan's sustainability objectives of minimizing GHG emissions; minimizing water waste; supporting biodiversity, access to nature, and a healthy ecosystem; improving air quality; maximizing flood and earthquake resilience; and helping achieve zero solid waste would be developed by a Central SoMa Eco-District Team (CSEDТ). The CSEDТ would reside within the Planning Department's Sustainable City

Team, with support from key agencies like the San Francisco Department of the Environment (SFE) and the San Francisco Public Utilities Commission (SFPUC), as well as community engagement from developers of new buildings, owners and managers of existing buildings, residents, businesses, workers, visitors, other City agencies, utilities, potential funders, and other stakeholders. The CSEDТ would be tasked with producing a “Central SoMa Eco-District Guidebook,” containing the vision, goals, policies, and implementation measures for the Eco-District, as well as best-practice examples and technical resources.

The CSEDТ would also participate in the City’s capital planning processes, including the Interagency Plan Implementation Team (IPIC) and the Streets Design Advisory Team (SDAT). In these roles, the CSEDТ would seek efficiencies and crosscutting strategies that could fulfill multiple goals at once. The CSEDТ would participate in the City’s design and development review processes, including the Preliminary Project Assessment (PPA) process and the Urban Design Advisory Team (UDAT). The CSEDТ would offer solutions, help reduce barriers, and foster innovation to enable high-performing development. The CSEDТ would undertake all relevant outreach and engagement to property owners to inform them about opportunities and encourage them to increase the environmental sustainability and resilience of their buildings and their occupants. In addition, the CSEDТ would monitor environmental conditions and trends, and evolving technologies and other strategies to fulfill the vision and goals of the Eco-District.

The Plan’s other specific measures to help achieve the sustainability goal, which are not already required by existing codes and programs, include the following:

- Maximizing onsite renewable energy generation, by amending the City’s *Green Building Code* to expand current solar energy requirements to include all new development up to 160 feet tall, regardless of the number of occupied floors;
- Amend the City’s *Green Building Code* so that, after maximizing efficiency measures and/or on-site renewable energy generation requirements, all remaining electricity demand in new development (and major renovations) would be required to come from 100% greenhouse gas-free electricity sources;
- To support biodiversity, access to nature, and a healthy ecosystem, amend the *Planning Code* to require all POPOS to contain greening on at least 50 percent of each site area, and require new development (sites 5,000 square feet and larger, with building heights 161 feet and less) to construct at least 50 percent of roof area as a living roof, to be designed in a manner that meets applicable non-potable water and stormwater management requirements; and
- To reduce litter in streetscapes and parks, amend the *Planning Code* to require 3-stream solid waste collection systems in POPOS.

II.D.6 Street Network Changes

This section of the Project Description describes proposed street network changes within the Transportation Study Area (Figure II-1). These street network changes are intended to be consistent with Project Objective and Plan Goal 4, “Provide Safe and Convenient Transportation that Prioritizes Walking, Bicycling, and Transit.” The description is at a sufficient level of detail to enable a project-level assessment of the proposed changes in this EIR, per CEQA Guidelines Section 15161. This means that no further environmental review of these changes will be necessary prior to their implementation.

Street Network Changes

The street network changes described below represent major investments that would be implemented gradually over time. Reconfigurations to street operations (such as conversion from one-way to two-way operation, installation of transit and bicycle facilities, and changes in the number of travel lanes) could be initially implemented on a street-by-street or block-by-block basis using roadway striping, traffic signal modifications, corner bulb-outs, and other low-cost tools. However, sidewalk widening (and the removal of some on-street parking in order to widen sidewalks) is a more substantial capital expense, and therefore sidewalk widening is expected to be implemented gradually as funding becomes available over time. In addition, some new developments would be required to widen sidewalks in front of their respective buildings per the City's Better Streets Plan. On blocks without development opportunity sites, sidewalk widening may need to be undertaken by the City, and would have to be prioritized among other transportation funding priorities.

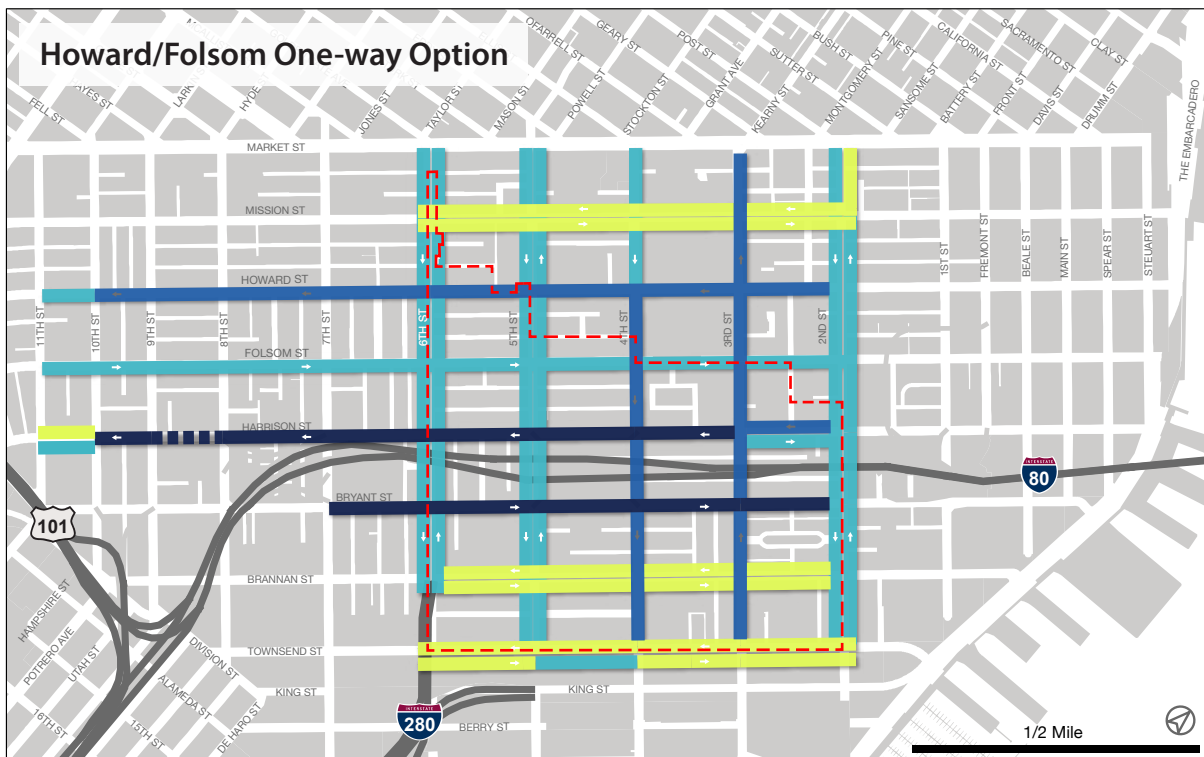
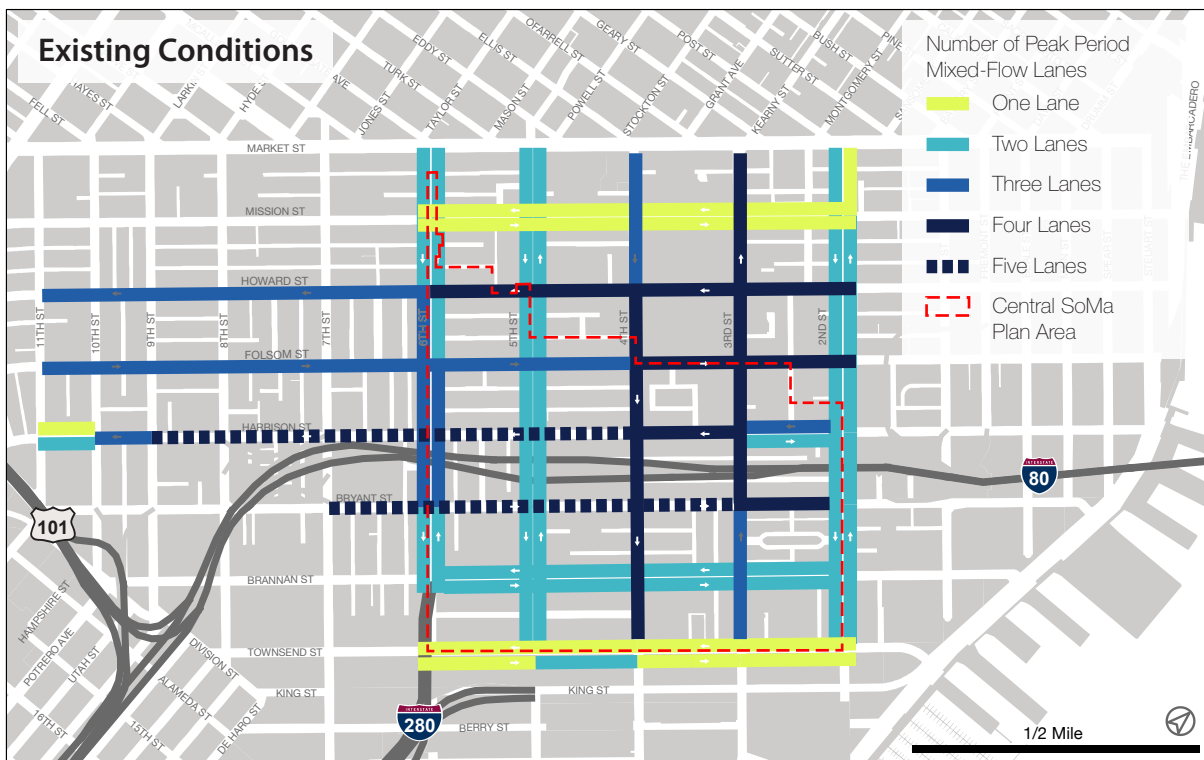
Two optional proposals for street network changes are described below and shown in **Figure II-15, Howard/Folsom One-Way Option: Existing and Proposed Number of Travel Lanes**, and **Figure II-16, Howard/Folsom Two-Way Option: Existing and Proposed Number of Travel Lanes**. In addition, illustrative figures meant to convey components of the proposed streetscape projects at a conceptual level are included in Appendix F. Details including vehicle, transit, and bicycle lane/cycle track and sidewalk widths, location of passenger and commercial loading, driveway curb cuts, on-street parking regulations, and others have yet to be determined by the SFMTA and the Planning Department. Final detailed designs will be prepared once the street network changes move from the conceptual/environmental assessment phase to a detailed design phase. The discussion below describes the proposed project-level changes to the individual streets analyzed in this EIR: Howard, Folsom, Harrison, Bryant, Brannan, Third, and Fourth Streets.

Howard and Folsom Streets

Two different options are being analyzed for the couplet of Howard Street and Folsom Street. Howard Street would be modified between Third and 11th Streets, while Folsom Street would be modified between Essex and 11th Streets. As shown in Figure II-15, under the One-Way Option, both streets would retain a one-way configuration (except Folsom Street east of Second Street, which would retain its existing two-way operation). As shown in Figure II-16, under the Two-Way Option, both streets would be converted into two-way operation, and some modifications to Harrison Street would also occur as described below.

Currently, this section of Howard Street between Third and 11th Streets has four westbound travel lanes (three west of Sixth Street), a westbound bicycle lane, parallel parking along the north and south curbs, and 12-foot sidewalks. West of Second Street, Folsom Street has three eastbound travel lanes, an eastbound bicycle lane, parallel parking along the north and south curbs, and 10-foot sidewalks.³⁸ Folsom Street east of Second Street is currently temporarily configured with a westbound transit-only lane to accommodate regional transit between the Temporary Transbay Terminal and the Bay Bridge.

³⁸ Folsom Street formerly had four westbound mixed-flow travel lanes until November 2013 when, as part of a SFMTA pilot project, one mixed-flow travel lane was removed in order to widen the existing bicycle lane. As this is a pilot project and not necessarily a permanent condition, the traffic analysis in this report assumes that four mixed-flow travel lanes are present under the existing condition.



SOURCE: San Francisco Planning Department

Case No. 2011.1356E: Central SoMa Plan

Figure II-15
Howard/Folsom One-Way Option: Existing
and Proposed Number of Travel Lanes

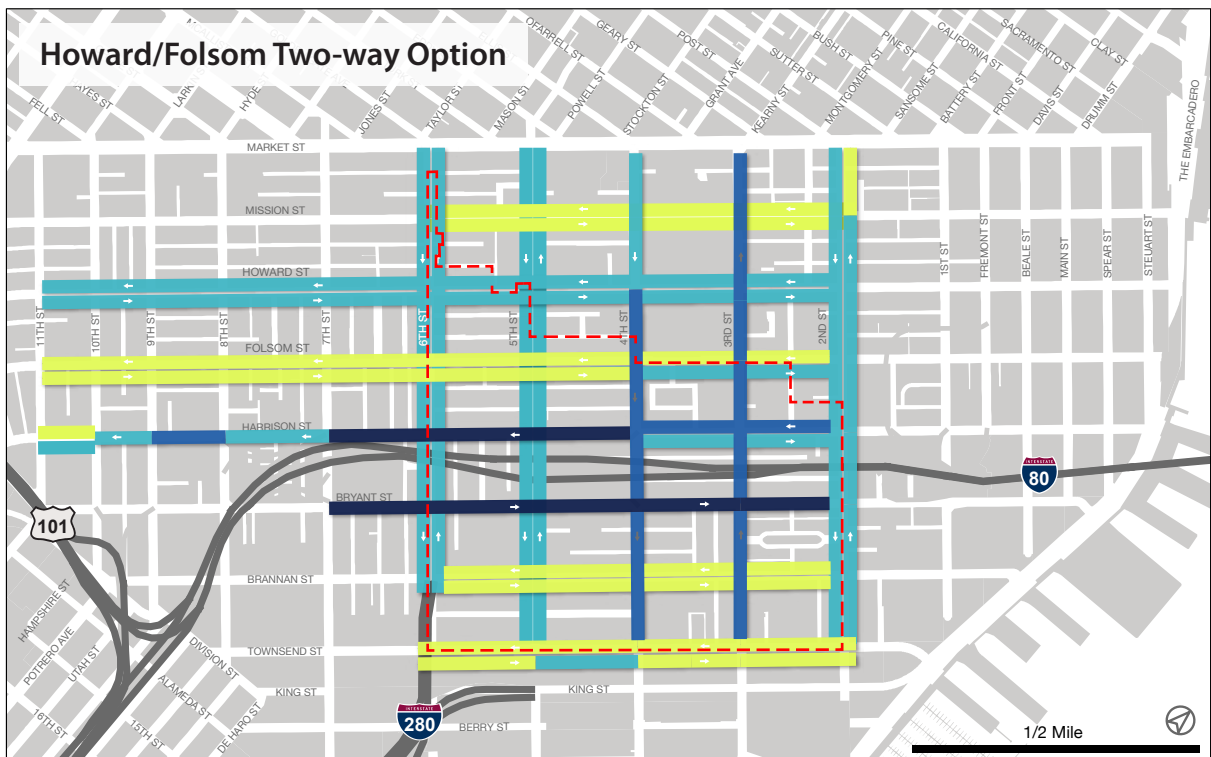
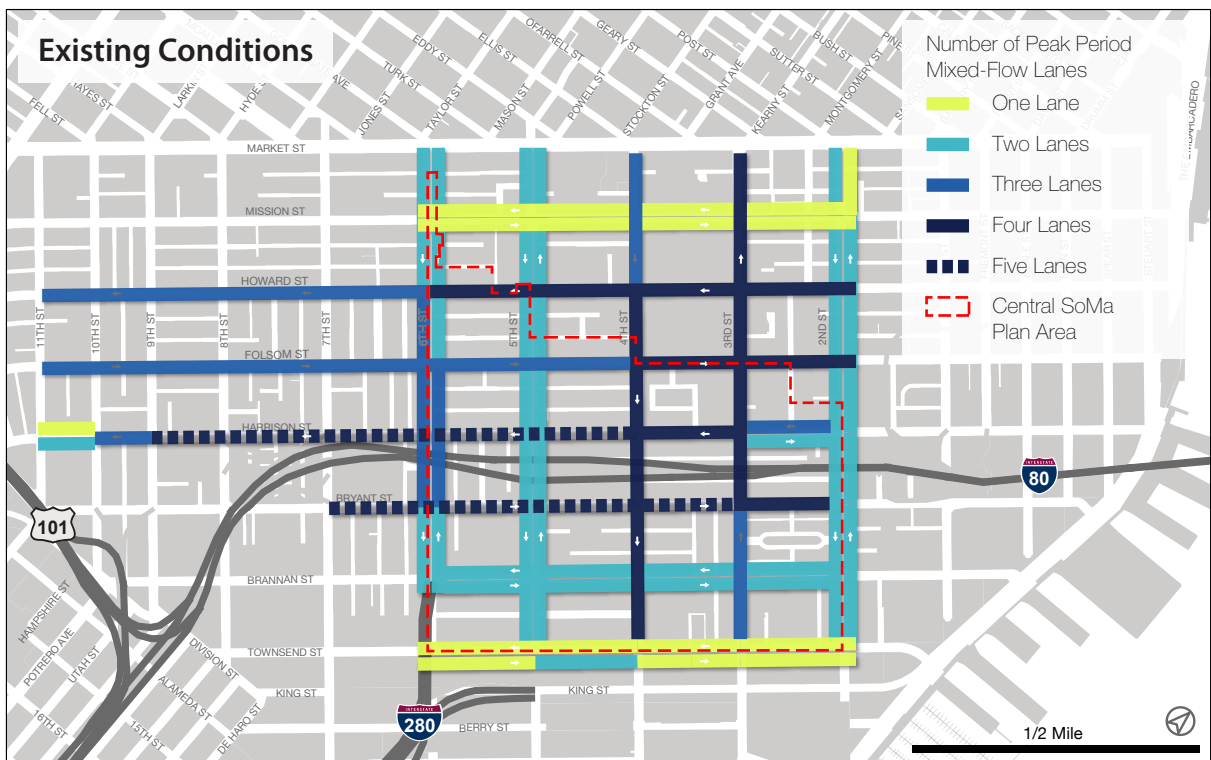


Figure II-15 and Figure II-16 present the number of peak period mixed-flow travel lanes for the existing condition and for the One-Way Option and Two-Way Option, respectively. These figures visually represent the changes in right-of-way allocation and resultant travel lane reductions.³⁹

One-Way Option – Howard Street

Under the One-Way Option, Howard Street between Third and 11th Streets would be modified to have two westbound travel lanes and a two-way cycle track⁴⁰ along the south curb. Parking would be allowed along the north curb during off-peak times, while during peak travel periods, parking would be prohibited to create a third westbound travel lane.

Alongside the cycle track, parking would be allowed at all times; however, at intersection approaches where left-turns are possible, parking would be removed in order to create a left-turn pocket, which (along with a left-turn signal) would be necessary in order to avoid conflicts between bicycles and left-turning vehicles. The north sidewalk would be widened to about 15 feet, while the south sidewalk would remain at 12 feet.

One-Way Option – Folsom Street

Under the One-Way Option, Folsom Street between Second and 11th Streets would be modified to have two eastbound travel lanes and a two-way cycle track along the north curb. The cycle track would extend beyond the eastern Plan Area boundary, to The Embarcadero. On-street parking would be allowed along the south curb during off-peak times, while during peak travel periods, parking would be prohibited to create an eastbound transit-only lane along the south curb. Several sub-options for Folsom Street are being considered by the SFMTA and Planning Department for the section of Folsom Street between Second and Essex Streets, and between Fifth and Second Streets. These sub-options include the following:

- **Original Sub-option:** Between Second and Essex Streets, Folsom Street would have a two-way cycle track along the north curb, a westbound travel lane, and three eastbound travel lanes. At the intersection of Folsom/Essex, the eastbound bicycle lane would shift from the north to the south side of the street;
- **Original plus Essex Sub-option:** Between Second and Essex Streets, Folsom Street would have a two-way cycle track along the north curb, a westbound travel lane, two eastbound travel lanes, and an eastbound transit-only lane along the south curb. At the intersection of Folsom/Essex, the eastbound bicycle lane would shift from the north to the south side of the street; also, this traffic signal would have a separate signal phase to separate the conflict between eastbound-through buses and eastbound-right turning vehicles; and
- **Protected Sub-option:** Between Fifth and Second Streets, the design would be different (from the segment between 11th and Fifth Streets). In this segment, the transit-only lane would transition to the north and operate alongside the two-way cycle track (in order to maneuver around recurring Bay Bridge queues); east of Second Street, eastbound transit would operate in a mixed-flow travel lane. On

³⁹ A mixed-flow travel lane may be used by automobiles, trucks, and buses; bicycles are also allowed. It is distinguished from single-use lanes, such as transit-only lanes and dedicated bicycle lanes.

⁴⁰ A cycle track is a bike lane that is separated from vehicle traffic and parked cars by a buffer zone. Cycle tracks offer safer and calmer cycling conditions for a much wider range of cyclists and cycling purposes, especially on streets with greater traffic volumes traveling at relatively high speeds.

Folsom Street between Fifth and Second Streets, on-street parking and loading would be allowed at all times along the south curb immediately east and west of Mabini Street, immediately east and west of Hawthorne Street, and immediately east of Essex Street. Between Second and Essex Streets, Folsom Street would have a two-way cycle track along the north curb, a westbound travel lane, and three eastbound travel lanes. At the intersection of Folsom/Essex, the eastbound bicycle lane would shift from the north to the south side of the street.

Alongside the cycle track (west of Fifth Street for the Protected Sub-option) parking would be allowed at all times; however, at intersection approaches where left-turns are possible, parking would be removed in order to create a left-turn pocket which (along with a left-turn signal) would be necessary in order to avoid conflicts between bicycles and left-turning vehicles. The south sidewalk would be widened to about 15 feet, while the north sidewalk would remain at 10 feet.

Two-Way Option – Howard Street

Under the Two-Way option, Howard Street between Third and 11th Streets would be modified to have two westbound and two eastbound travel lanes, left-turn pockets at intersections where left turns are allowed, and bike lanes in each direction. Between Fourth and Sixth Streets, two westbound and two eastbound travel lanes and one bike lane in each direction would be provided at all times, in addition to parallel parking along either the north or south curb. Sidewalks between Fourth and Sixth Streets would remain 12 feet wide.

West of the Plan Area a floating bicycle lane would be provided in each direction of Howard Street between Sixth and 11th Streets.⁴¹ During the off-peak hours, the bicycle lane would be located adjacent to the parking lane, while during peak periods, on-street parking would be prohibited, and the lane adjacent to the curb would be used by bicyclists (i.e., similar to the floating bicycle lane on northbound Embarcadero between Harrison and Howard Streets).

Two-Way Option – Folsom Street

Under the Two-Way Option, Folsom Street between Fourth and 11th Streets would be modified to have one eastbound and one westbound travel lane and one-way buffered or raised cycle tracks in both directions. Left turns from Folsom Street onto cross-streets would not be allowed, except by taxis and buses at limited locations. Parallel parking would be provided on one side of the street at all times. On block faces without parallel parking where on-street loading would be required, loading bays approximately seven feet wide would be recessed within the sidewalk, similar to the loading bays cut into the widened sidewalks on Market Street. Right-turn pockets would be provided at intersections (along with a right-turn signal) that would be necessary in order to separate right-turning vehicles from bicycles. Sidewalks would be widened to about 15 feet to 18 feet.

Between Second and Fourth Streets, Folsom Street would be modified to have one eastbound transit-only lane, one eastbound travel lane, one westbound travel lane, and one-way buffered or raised cycle tracks in both directions. Parallel parking would be provided adjacent to the cycle track.

⁴¹ A floating bicycle lane is an on-street bicycle facility that accommodates peak period traffic with an additional travel lane by restricting on-street parking and allowing bicyclists to use the parking lane. Floating bicycle lanes require an additional stripe within the parking lane to delineate the peak period bicycle lane.

Westbound auto traffic on Folsom Street would be required to turn right onto northbound Third Street during peak periods (vehicle access to the north curb of Folsom between Third and Fourth would be accommodated by turning left onto westbound Folsom from northbound Third). Eastbound vehicle traffic on Folsom Street would be required to turn right onto southbound Fourth Street during peak periods (vehicle access to the south curb of Folsom between Fourth and Third would be accommodated by turning left onto eastbound Folsom from southbound Fourth). Eastbound traffic would also be metered to discourage through-traffic along Folsom Street and to confine queuing to locations where queues would not affect other modes. The metering would be effected by provision of a shorter green phase for eastbound vehicles in the mixed-flow travel lanes than would be provided for eastbound transit, bicycles, or pedestrians. This strategy would be employed along Folsom Street at the intersections with Mabini, Third, Hawthorne, and Second Streets.

Under the Two-Way Option, modifications to additional streets would also occur. Essex Street would be closed to vehicle access in order to remove the connection between Folsom Street and the Bay Bridge, but a southbound transit-only lane would be retained, as shown in **Figure II-17, Proposed Essex Street Closure**. Once the new Transbay Terminal is completed and the elevated bus ramp between the Bay Bridge and the new terminal is operational, Essex Street would be closed to all vehicles, including buses, and the right-of-way would be converted into new public open space. To accommodate vehicles destined for the Bay Bridge from southbound Fourth Street, Harrison Street would be converted into two-way operation between Third and Fourth Streets (see description of Harrison Street below).

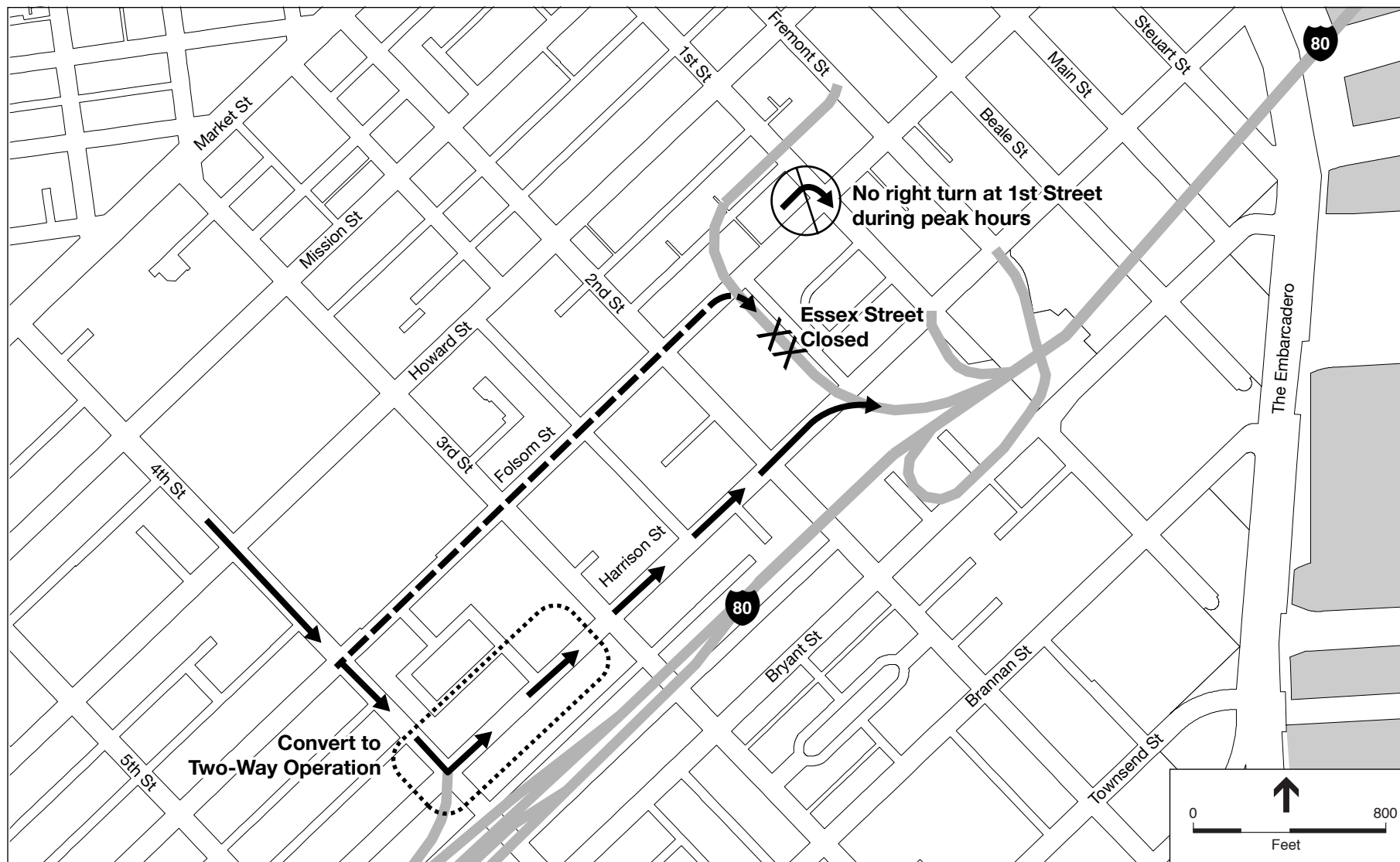
Third Street

Third Street is proposed to be modified between King and Market Streets. Currently this section of Third Street has three northbound travel lanes and one northbound transit-only lane, with parallel parking along the east and west curbs. During peak hours, on-street parking is prohibited along the east curb to reduce parking friction with transit vehicles; on-street parking is also prohibited along the west curb north of Bryant Street during peak hours to create a fourth travel lane.

The Plan would reconfigure Third Street to include three northbound travel lanes, a protected transit-only lane along the east curb, and a one-way northbound cycle track along the west curb at all times. Sidewalks would be widened to about 15 feet, and on-street parking would be removed. At locations where on-street loading would be required, loading bays approximately seven feet wide would be installed within the sidewalk, similar to the loading bays cut into the widened sidewalks on Market Street. At signalized intersections, turning vehicle movements would be separated from bicycle, transit, and pedestrian traffic with separate traffic signal phases.

Fourth Street

Fourth Street would be modified between Market and Harrison Streets. Currently this section of Fourth Street generally has three southbound travel lanes and one southbound transit-only lane, and parallel parking along the east and west curbs.



← Existing Route
→ Proposed Route

Essex Street closure and two-way Harrison Street between 3rd and 4th
(As part of two-way Howard/Folsom)

SOURCE: San Francisco Planning Department

Case No. 2011.1356E: Central SoMa Plan

Figure II-17
Proposed Essex Street Closure

Similar to Folsom Street, two different sub-options for Fourth Street are being considered by the SFMTA and Planning Department for the segment of Fourth Street between Market and Folsom Streets. Under both sub-options, the number of travel lanes on Fourth Street would be reduced to two southbound mixed-flow travel lanes between Market and Howard Streets, and reduced to three southbound mixed-flow travel lanes between Howard and Harrison Streets. Both sub-options also include a protected southbound transit-only lane along the west curb and a bicycle facility along the east curb. Both sub-options include the widening of the east sidewalk to about 15 feet between Market and Mission Streets, and to about 23 feet between Mission and Howard Streets; the west sidewalk between Market and Folsom Streets would remain at the current width of about 16 feet.⁴² All on-street parking would be removed, but there would be opportunities for on-street loading bays where necessary. Between Howard and Folsom Streets, sidewalks would remain as under existing conditions (in lieu of the east sidewalk, there is a separate pedestrian path east of the Moscone Center loading ramp that would remain). As with the blocks to the north, on-street parking would be removed.

The differences between the sub-options are as follows:

- Fourth Street Protected Sub-option: Between Market and Folsom Streets, Fourth Street would have a two-way southbound cycle track on the eastern curb and right-turning vehicles would not be allowed to merge across the physically separated transit-only lane; rather they would have to turn from the outside travel lane at the intersection; and
- Fourth Street Right-turn Pockets Sub-option: Between Market and Folsom Streets, Fourth Street would have a one-way southbound cycle track along the eastern curb and right-turn pockets would be provided at intersections such that vehicles would merge across the transit-only lane prior to turning right at the intersection.

Between Howard and Harrison Streets, Fourth Street would have three southbound travel lanes and a protected transit-only lane, but the bicycle facility would be southbound only. The east and west sidewalks would be widened to about 15 feet. As with the blocks to the north, on-street parking would be removed.

In addition to the foregoing, the Planning Department proposes to add a provision to the *Planning Code* to require that new construction on Fourth Street south of Harrison Street provide for a five-foot setback that would allow for further increases in sidewalk widths adjacent to new construction. These setbacks, which could be developed as arcades, would be more likely to be implemented on the east side of Fourth Street during the analysis horizon of the Plan (i.e., by 2040), given that the east side contains a much larger number of potential development sites.

Harrison Street

Harrison Street would be modified between Second and 11th Streets. Currently this section of Harrison Street is configured with five travel lanes in the westbound direction (however, between Second and Third Streets there are three westbound lanes and two eastbound lanes), parallel parking along both the north and south curbs, and eight-foot sidewalks.

⁴² It should be noted that the existing southbound right turn pocket from Fourth Street onto Mission Street was removed in 2015 by Public Works as part of a separate project to provide for a consistent west sidewalk width of about 16 feet between Market and Folsom Streets.

The Plan would reconfigure Harrison Street to include a transit-only lane for the 8X Bayshore Express, and sidewalks would be widened within the Plan Area between Second and Sixth Streets. The length of the transit-only lane would vary between the One-Way and Two-Way Howard/Folsom Options. Under the Two-Way Howard/Folsom Option, Harrison Street between Seventh and 10th Streets would have angled parking and fewer travel lanes. This is elaborated below.

Harrison Street with the One-Way Howard/Folsom Option

Under the One-Way Option, Harrison Street between Second and Third Streets would have one westbound transit-only lane, two westbound travel lanes, two eastbound travel lanes, and no parallel parking during peak periods. During off-peak periods, parallel parking would be allowed along the north and south curbs, resulting in two westbound travel lanes and one eastbound travel lane; no transit-only lane would be provided during off-peak periods. Sidewalks would be widened to about 15 feet. At locations where on-street loading would be required at all times, loading bays approximately seven feet wide could be installed within the sidewalk, similar to the loading bays cut into the widened sidewalks on Market Street.

Between Third and Sixth Streets, there would be four westbound travel lanes, one westbound transit-only lane, and no parallel parking during peak periods. During off-peak periods, parallel parking would be allowed along the north and south curbs, resulting in three westbound travel lanes; no transit-only lane would be provided during off-peak periods. Sidewalks would be widened to about 15 feet. At locations where on-street loading would be required at all times, loading bays approximately seven feet wide could be installed within the sidewalk, similar to the loading bays cut into the sidewalks on Market Street.

Between Sixth and 10th Streets, there would be four westbound travel lanes, one westbound transit-only lane, and parallel parking along the north and south curbs at all times. Sidewalks would remain eight feet wide. At Seventh Street, there would be a transit-only signal phase that would enable the outbound 8X Bayshore bus to turn left onto the U.S. 101 southbound freeway onramp from the right lane.

Between 10th and 11th Streets, there would be two westbound travel lanes, one westbound transit-only lane, one eastbound travel lane, and parallel parking along both the north and south curbs at all times. Sidewalks would remain eight feet wide.

Harrison Street with the Two-Way Howard/Folsom Option

Under the Two-Way Option, Harrison Street between Second and Fourth Streets would have three westbound travel lanes, two eastbound travel lanes, and no parallel parking during peak periods. Harrison would be converted from one-way to two-way operation between Third and Fourth Streets, in order to enable Bay Bridge-bound traffic to utilize Harrison Street instead of Folsom Street. Right turns from Folsom Street eastbound onto First Street southbound would be prohibited, and Essex Street between Folsom and Harrison Streets would be closed to vehicular traffic. During off-peak periods, parallel parking would be allowed along the north and south curbs, resulting in two westbound travel lanes and one eastbound travel lane. Sidewalks would be widened to about 15 feet. At locations where on-street loading would be required at all times, loading bays approximately seven feet wide could be installed within the sidewalk, similar to the loading bays cut into the sidewalks on Market Street.

Between Fourth and Sixth Streets, Harrison Street would have four westbound travel lanes, one westbound transit-only lane, and no parallel parking during peak periods. During off-peak periods, parallel parking would be allowed along the north and south curbs, resulting in three westbound travel lanes; no transit-only lane would be provided during off-peak periods. Sidewalks would be widened to about 15 feet. At locations where on-street loading would be required at all times, loading bays approximately seven feet wide would be installed within the sidewalk.

Between Sixth and Seventh Streets, there would be four westbound travel lanes, one westbound transit-only lane, and parallel parking along the north and south curbs at all times. Sidewalks would remain eight feet wide. At Seventh Street, there would be a transit-only signal phase that would enable the outbound 8X Bayshore bus to turn left onto the southbound U.S. 101 freeway onramp from the right lane.

Between Seventh and Ninth Streets, there would be three westbound travel lanes, angled parking along the north curb at all times, and parallel parking along the south curb at all times. Sidewalks would remain eight feet wide. Between Ninth and 10th Streets, there would be two westbound travel lanes and angled parking along both the north and south curbs at all times. Sidewalks would remain eight feet wide. Between 10th and 11th Streets, there would be three westbound travel lanes, one eastbound travel lane, and parallel parking along both the north and south curbs at all times. Sidewalks would remain eight feet wide.

Bryant Street

Bryant Street would be modified between Second and Seventh Streets. Currently this section of Bryant Street is configured with five travel lanes in the eastbound direction, parallel parking along both the north and south curbs, and eight-foot sidewalks. The Plan would reconfigure Bryant Street to include a transit-only lane for the 8 Bayshore between Third and Seventh Streets, and would widen sidewalks within the Plan Area.

Between Sixth and Seventh Streets, there would be four eastbound travel lanes, one eastbound peak-hour transit-only lane, and parallel parking along the north and south curbs at all times. Sidewalks would remain eight feet wide.

Between Third and Sixth Streets, there would be four eastbound travel lanes, one eastbound peak-hour transit-only lane, and no parallel parking during peak periods. During off-peak periods, parallel parking would be allowed along the north and south curbs, resulting in three travel lanes; no transit-only lane would be provided during off-peak periods. Sidewalks would be widened to about 15 feet. At locations where on-street loading would be required at all times, loading bays approximately seven feet wide would be installed within the sidewalk. At Third Street, there would be a transit-only signal phase that would enable the inbound 8 Bayshore bus to turn left onto northbound Third Street from the right lane.

Between Second and Third Streets, where transit does not operate, five eastbound travel lanes would be provided during peak periods, with no parallel parking. During off-peak travel periods, parallel parking would be allowed along the north and south curbs, resulting in three travel lanes. Sidewalks would be widened to about 15 feet. At locations where on-street loading would be required at all times, loading bays approximately seven feet wide would be installed within the sidewalk.

Brannan Street

Brannan Street would be modified between Second and Sixth Streets. Currently this section of Brannan Street is configured with two travel lanes in both the eastbound and westbound directions, parallel parking along both the north and south curbs, and 10-foot sidewalks. The project would reconfigure Brannan Street to have one travel lane in both the eastbound and westbound directions. One-way buffered cycle tracks in each direction would be installed along the north and south curbs. Sidewalks would be widened to about 15 feet. At midblock locations, parallel parking would be allowed adjacent to either the north or south cycle track buffer. At intersection approaches, on-street parking would be removed to create a right-turn pocket, which (along with a right-turn signal) would be necessary in order to separate right-turning vehicles from bicycles. The right-turn pockets would be approximately 100 feet in length, and would require the removal of up to four on-street parking spaces.

Traffic Signal and Crosswalk Modifications

Some of the above street network changes would necessitate changes to signal timing at certain intersections to provide priority to transit vehicles, allow buses to make certain turning movements on their own signal cycle, separate bicyclists from vehicles turning across cycle tracks, or protect pedestrians from turning vehicles. In addition, signal cycle lengths at all Central SoMa intersections would increase from 60 to 90 seconds.

II.E Approvals Required

Approval and implementation of the final Central SoMa Plan would require the following actions. (Approving bodies are identified in *italics*.) Specific and detailed actions would be determined as the Plan is developed.

- Amendments to the *General Plan* (various elements and figures) to conform to the concepts of the Central SoMa Plan. *Planning Commission recommendation; Board of Supervisors Approval;*
- Determination of consistency of the proposed *General Plan* amendments and rezoning with the *General Plan* and *Planning Code* Section 101.1 Priority Policies. *Planning Commission;*
- Amendment of the *Planning Code* to conform to the concepts of the Central SoMa Plan. *Planning Commission recommendation; Board of Supervisors Approval;*
- Amendment of the *Planning Code* and Zoning Maps to change mapped use districts and height limits throughout the Plan Area. *Planning Commission recommendation; Board of Supervisors Approval;* and
- Approval of alterations to street rights-of-way, including, for example, the configuration of travel lanes, sidewalk widths, and bicycle lanes, addition of crosswalks, and alley way improvements that are part of the Plan's proposals for the street network and public realm. *San Francisco Transportation Agency; Department of Public Works.*

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CHAPTER III

Plans and Policies

In accordance with CEQA Guidelines Section 15125(d), this chapter describes any inconsistencies between the proposed Central SoMa Plan (the Plan) including proposed open space improvements and street network changes extending beyond the Plan Area boundaries, and applicable plans and policies. This analysis evaluates the objectives and policies of the *San Francisco General Plan*, including its East South of Market (SoMa), and Western SoMa area plans that overlap with portions of the Central SoMa Plan Area, and other applicable local and regional plans to determine if there would be any inconsistencies with implementing the Plan or proposed open space and street network changes.⁴³ This chapter also discusses the Plan's compliance with the *San Francisco Planning Code*, which implements the *General Plan*. Where inconsistencies are identified that could result in physical effects on the environment, the reader is directed to analysis of those effects in Chapter IV, Environmental Setting, Impacts, and Mitigation Measures. In particular, regional plans pertaining to air quality (e.g., *2010 Clean Air Plan*) are discussed in Section IV.G, Air Quality.

The Planning Commission and Board of Supervisors would review the Plan for consistency with the objectives, policies and principles of the *General Plan* and consider possible amendments proposed to achieve Plan conformity with the *General Plan*. The specific policy inconsistencies identified in this EIR would also be referenced in the staff reports prepared in conjunction with the Plan's approval documentation.

III.A San Francisco General Plan

The *General Plan*, adopted by the Planning Commission and the Board of Supervisors, is both a strategic and long-term document, broad in scope and specific in nature. The *General Plan* is the embodiment of the City's collective vision for the future of San Francisco, and comprises a series of elements, each of which deal with a particular topic, that applies citywide. The *General Plan* contains 10 elements (Housing, Commerce and Industry, Recreation and Open Space, Community Facilities, Urban Design, Environmental Protection, Transportation, Air Quality, Community Safety, and Arts)⁴⁴ that provide goals, policies, and objectives for the physical development of the city. In addition, a Land Use Index cross-references the policies related to land use located throughout the *General Plan*. The *General Plan* also includes area plans that outline goals and objectives for specific geographic planning areas.

The Central SoMa Plan Area covers 230 acres of land within the central portion of the City's South of Market district. The Plan Area would be formed primarily from portions of two adopted plan areas: roughly 40 percent of the Plan Area is within the Western SoMa Area Plan (including all or portions of Assessor

⁴³ Portions of the Plan Area are also within the former Yerba Buena Center Redevelopment Plan. The redevelopment plan sunset in 2010 and, while the Office of Community Infrastructure and Investment, as successor to the San Francisco Redevelopment Agency, retains ownership over certain improvements in the Plan Area, the redevelopment plan is no longer in effect.

⁴⁴ The Planning Department is currently preparing a Preservation Element, the adoption of which is anticipated in early 2017.

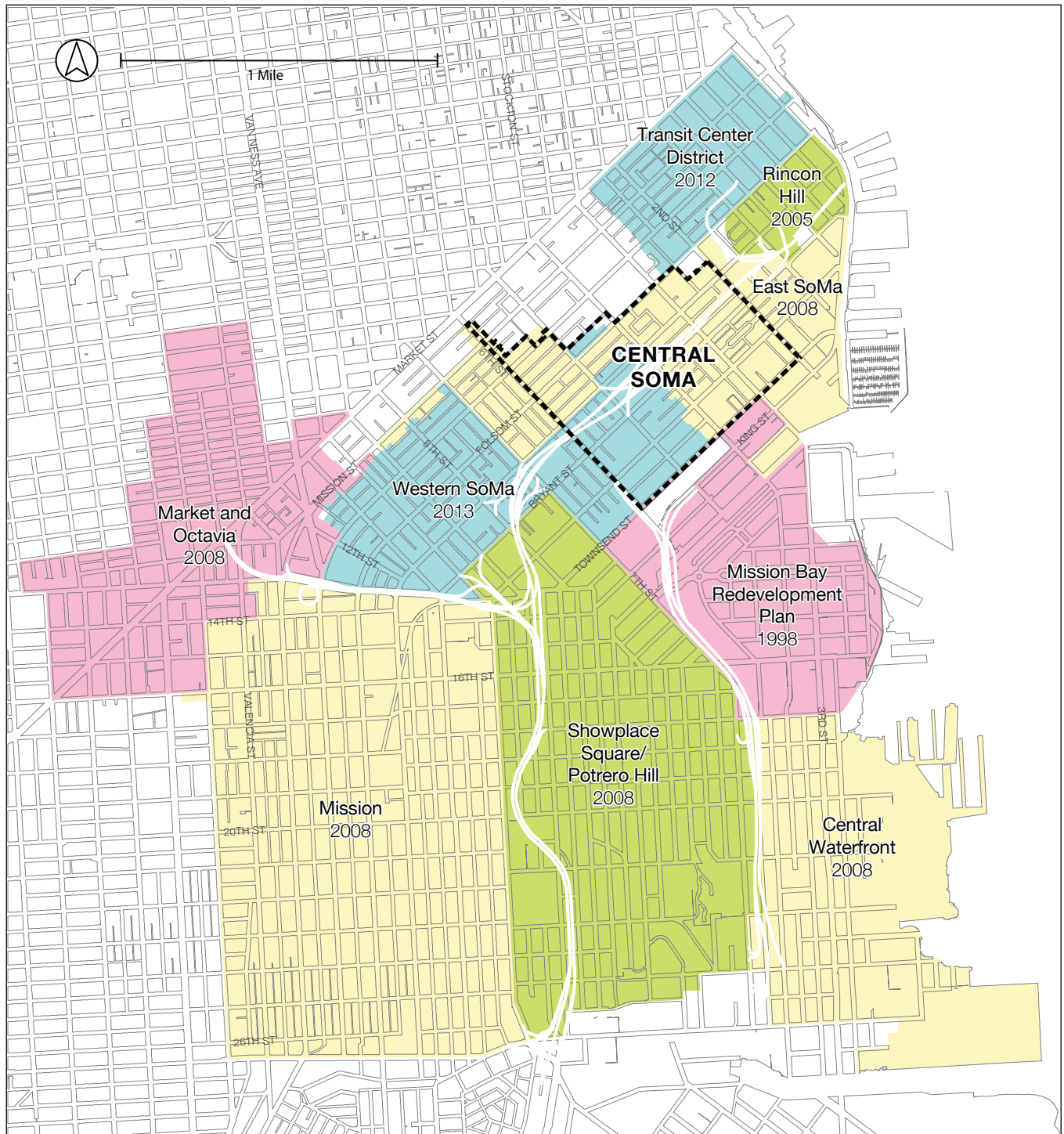
Blocks 3760, 3761, 3778, 3777, 3785, and 3786); about 60 percent of the Plan Area would be derived from land that is currently part of the East SoMa Area Plan (including all or portions of Assessor Blocks 3704, 3725, 3732, 3750, 3751, 3762, 3763, 3775, 3776, 3778, and 3787).

Figure III-1, Area Plans in and near the Central SoMa Plan Area, depicts the areas under the jurisdiction of each of these area plans. In an area plan, “the more general policies in the *General Plan* elements are made more precise as they relate to specific parts of the city.”⁴⁵ The *General Plan*’s area plans contain specific policies and objectives that address land use and planning issues in the local context. In order to establish the Central SoMa Plan Area’s geography as described in Chapter II, Project Description, the Plan would require amending the *General Plan* to create the Central SoMa Plan Area as a distinct area plan, in conjunction with conforming amendments to other area plans or elements of the *General Plan* as necessary to achieve internal consistency. Specifically, the Central SoMa Plan would supersede those portions where the Plan Area overlaps with the Western and East SoMa area plans.

As directed by the state CEQA Guidelines (Sec. 15125(d)), potential conflicts with the East SoMa Plan and Western SoMa Plan policies are discussed below. A conflict between a proposed project and a *General Plan* policy does not, in itself, indicate a significant effect on the environment within the context of CEQA. Any physical environmental impacts that could result from a conflict with *General Plan* policy(ies) are analyzed in this EIR. In general, potential conflicts with the *General Plan* are considered by the decision-makers (in the case of a *General Plan* amendment, the Planning Commission and Board of Supervisors) independently of the environmental review process. Thus, in addition to considering inconsistencies that affect environmental issues, the decision-makers consider other potential inconsistencies with the *General Plan*, independently of the environmental review process, as part of the decision to approve or disapprove a proposed project. Any potential conflict not identified in this environmental document would be considered in that context and would not alter the physical environmental effects of the Plan and proposed street network changes and open space improvements that are analyzed in this EIR.

Additional *General Plan* policies with which the Plan could conflict, beyond those of the area plans noted above, are discussed following the discussion of the area plans. This section is not intended to provide a comprehensive analysis of *General Plan* consistency; in particular, this section is not intended to, and does not, identify policies that the Central SoMa Plan would support. Staff report(s) for Planning Commission and Board of Supervisors action(s) on the Plan will contain a complete analysis of *General Plan* consistency.

⁴⁵ Introduction to the *General Plan*.



----- Central SoMa Area Plan Boundary

SOURCE: San Francisco Planning Department

Case No. 2011.1356E: Central SoMa Plan

Figure III-1
Area Plans In and Near the Central SoMa Plan Area

III.A.1 East SoMa Plan

The East SoMa Plan was adopted in 2008 as part of the Eastern Neighborhoods Area Plans and Rezoning Project, a multi-year effort to address conflicts between residential and office uses and light industrial (PDR) uses in the southeastern portion of the city. In addition to East SoMa, the Eastern Neighborhoods planning process resulted in adoption of area plans for the Central Waterfront, Mission, and Showplace Square/Potrero Hill neighborhoods, with attendant zoning and height map amendments to implement area plan objectives. The East SoMa Area Plan, which overlaps with the southeastern portion and part of the northwestern portion of the Central SoMa Plan Area, calls for a diverse mix of uses and of income levels, including new affordable and market rate housing, offices and retail, more neighborhood-serving businesses, more jobs for local residents, safer streets, more community facilities, more open spaces, and an increased variety of transportation options. A major focus of the Eastern Neighborhoods planning effort was to identify and designate industrial protection districts, within which office and residential uses (that typically command and can afford higher land rent) would not be allowed. Several areas, primarily in the Central Waterfront, Showplace Square, and northeast Mission neighborhoods, were rezoned for this purpose (as were areas within the Bayview District, under a separate planning process) with use districts that limit or prohibit outright residential and office uses. As adopted, the East SoMa Plan did not include the rezoning of the majority of the Service/Light Industrial (SLI) use district, where office and market-rate residential uses are not allowed. The Planning Commission and Board of Supervisors deferred that land use change to a more focused planning process, which has culminated in this Central SoMa planning effort.

Notably, along with the deferral of major zoning changes, the East SoMa Plan was alone among the four Eastern Neighborhoods area plans in not explicitly protecting PDR uses. While each of the other three area plans adopted as part of the Eastern Neighborhoods planning process included an objective to, “Retain the [neighborhood’s] role as an important location for production, distribution, and repair (PDR) activities,” the East SoMa Plan did not: as explained in the text accompanying the East SoMa Plan’s Objective 1.1 (“Encourage production of housing and other mixed-use development in East SoMa while maintaining its existing special mixed-use character):

The intent of this Plan is to keep East SoMa a place of mixed uses, where new affordable and market rate housing, offices and retail can mix with viable production, distribution or repair (PDR) businesses, and small institutions. PDR businesses will not be strongly protected through proposed new zoning in this area, because of its proximity to the city center. Nevertheless, it is expected that a good number of PDR establishments will remain viable into the future, adding to the unique mix in East SoMa.

Therefore, while the East SoMa Plan does not anticipate wholesale displacement of PDR uses, neither does it designate—through zoning—portions of the Plan Area as especially protective of PDR uses as was done in the other Eastern Neighborhoods. In fact, the East SoMa Plan recognizes that certain PDR uses may continue to exist in the Plan Area in part because their operations would change. Plan Policy 1.1.10 states, “While continuing to protect traditional PDR 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.” Moreover, the East SoMa Plan recognized that the Central Subway, now under construction beneath Fourth Street in the Plan Area, would give “new importance to the Fourth Street corridor as a potential location for higher density uses” and development around the new rail stations “should be planned very specifically to integrate with the

stations.”⁴⁶ Accordingly, while implementation of the East SoMa Plan did not rezone the SLI use district that currently governs most of the Central SoMa Plan Area south of Harrison Street between South Park and Fourth Street, the East SoMa Plan anticipated that (what is now) the Central SoMa planning effort would “allow the Planning Department to develop a strategic set of land use controls better suited to Fourth Street’s future role as a major north-south transit corridor.”⁴⁷

The Central SoMa Plan would retain many of the goals of the East SoMa Area Plan, while also proposing changes to land use and development controls to those areas where the Central SoMa Plan overlaps with the East SoMa Area Plan (generally, between Second and Fourth Streets south of Folsom Street, between Natoma and Harrison and Fifth and Sixth Streets, and in a connecting area between Fourth, Fifth, Folsom and Clara Streets). The Central SoMa Plan may conflict with the following objectives in the East SoMa Plan that emphasize housing production, and adoption of the Central SoMa Plan would therefore result in a change, at least to some degree, in the City and County of San Francisco’s planning policy for the East SoMa Plan Area:

Objective 1.1: Encourage production of housing and other mixed-use development in East SoMa while maintaining its existing special mixed-use character; and

Objective 1.2: Maximize housing development potential in keeping with neighborhood character.

The Plan would designate MUO zoning in place of existing SLI and WS-SALI use districts in portions of the Plan Area, where mixed-use office would be allowed on parcels where that use is currently prohibited.⁴⁸ It would also eliminate most of the existing WS-SALI use district within the Western SoMa Plan Area parcels incorporated into the Plan Area where current WS-SALI regulations prohibit all housing.⁴⁹ Although the Plan would ease existing restrictions on housing development through implementation of proposed MUO zoning controls, the MUO zoning designation appears nonetheless to emphasize development of employment-generating uses such as office to a greater degree than that of housing. This preference for employment-generating uses over housing would not substantially conflict with the housing objectives in the East SoMa Plan because the Plan’s MUO zoning use district would permit housing in areas where it is currently limited.

The rezoning of SLI to MUO proposed under the Plan is not necessarily inconsistent with the policies in the East SoMa Plan related to land zoned for PDR uses. Those policies (discussed above) anticipated a degree of adaptability related to the manner in which PDR uses and the types of PDR activities may evolve relative to future spatial demands. Rezoning SLI and WS-SALI to MUO within the Plan Area would not directly eliminate any existing PDR use, nor would it preclude future PDR use in the Plan Area. Instead, PDR use could integrate with other uses that could be located within buildings that may have once solely accommodated PDR activities. Evolving trends in functional research, design, prototyping, product testing and manufacturing suggest those activities and functional spaces would increasingly intermix with traditional offices and administrative uses within a single building. Thus, on balance, the East SoMa Plan appears to have anticipated the planning process and its attendant rezoning proposal resulting in the Central SoMa Plan,

⁴⁶ East SoMa Plan, text accompanying Objective 1.1.

⁴⁷ Ibid.

⁴⁸ The Western SoMa SALI use district is referred to in this EIR as “SALI use district” and “WS-SALI use district” interchangeably.

⁴⁹ As directed by Policy 3.3.1 in the proposed Central SoMa Plan and illustrated on Figures II-3 and II-4 in Chapter II, Project Description, the existing SALI-zoned parcels on the two blocks between Harrison, Bryant, Fourth and Sixth Streets are not proposed to be rezoned to MUO, and would retain WS-SALI zoning designations under the Plan.

which is the subject of this review. The Central SoMa Plan would not be demonstrably inconsistent with the East SoMa Plan. As part of the approval process for the Central SoMa Plan, the applicable parcels in the existing East SoMa Plan area would be incorporated into the Central SoMa Plan.

III.A.2 Western SoMa Plan

Originally part of the Eastern Neighborhoods planning process, Western SoMa was defined as a separate area in 2004, and the Western SoMa Citizens Planning Task Force was established to develop a plan for this area. A Final EIR was certified in December 2012, and the Western SoMa Area Plan was adopted by the Board of Supervisors in March 2013. The Western SoMa Plan overlaps with the southwestern portion of the Central SoMa Plan Area, generally between Fourth, Sixth, Harrison, and Townsend Streets. While the Central SoMa Plan is consistent with certain policies and proposals of the Western SoMa Plan, including prioritizing capital improvements such as a new park, enhancing the pedestrian and bicycle environment, and making transformative streetscape improvements along Folsom Street, the two plans differ fundamentally in their approach to land use controls in the area of overlap. The Central SoMa Plan proposes changes to land use controls to support more employment growth, particularly office-type employment, west of Fourth Street where the two Plan Areas overlap, by zoning this area as Mixed-Use Office (MUO). In contrast, the Western SoMa Plan's policies and zoning in this area emphasize retention of PDR uses and spaces for nighttime entertainment uses.

As proposed, the Central SoMa Plan appears to conflict with the following objectives and policies in the Western SoMa Plan, meaning that adoption of the Central SoMa Plan would result in a change in City planning policy for the overlapping Western SoMa Plan Area:

- Policy 1.2.1:** Re-name, re-district and re-purpose the existing Service Light Industrial (SLI) zoning district as a new Service, Arts and Light Industrial (SALI) zone;
- Policy 1.2.4:** Prohibit housing outside of designated Residential Enclave Districts (RED) south of Harrison Street;
- Policy 2.2.3:** Limit retail uses south of Harrison Street to no more than 25,000 square feet;
- Policy 2.2.15:** Provide relocation opportunities for existing nighttime entertainment uses into areas where the impacts on neighborhood residential areas can be minimized;
- Policy 2.3.1:** Provide business assistance for new and existing light industrial businesses in the Western SoMa SUD;
- Policy 8.1.2:** Create, expand and protect space for the arts;
- Objective 8.3:** Protect and encourage appropriate neighborhood entertainment uses; and
- Policy 8.3.4:** Provide opportunities for relocation of existing entertainment uses from residential areas to non-residential areas of the Western SoMa SUD.

The Central SoMa Plan would rezone portions of the PDR-protective WS-SALI use district (the WS-SALI also encourages arts and entertainment uses), along with the similar SLI district in East SoMa, as discussed above. Therefore, the Plan could be potentially inconsistent with Western SoMa objectives and policies designed to protect PDR uses. However, the Plan would also ensure that the removal of protective zoning would not

result in a net loss of PDR as a result of the Plan, and would provide incentives to fund, build, and/or protect PDR, as outlined in Objective 3.3 and accompanying policies, below.

Objective 3.3: Ensure the removal of protective zoning does not result in a loss of PDR in the Plan Area.

Policies set forth under Objective 3.3 include the following:

Policy 3.3.1: Maintain existing zoning that restricts non-PDR development in certain locations. The Plan would implement this policy by maintaining the existing SALI zoning between Fourth and Sixth Streets and Harrison and Bryant Streets (see Figure II-3, Proposed Zoning, in Chapter II, Project Description);

Policy 3.3.2: Limit conversion of PDR space in formerly industrial districts. The Plan would implement this policy, where parcels are rezoned under the Plan from SLI to MUO, by requiring retention of 50 percent of existing building space permitted as PDR as of January 1, 2016, and, where parcels are rezoned under the Plan from SALI to MUO or WS-MUO, requiring complete retention of existing building space permitted as PDR as of January 1, 2016; and

Policy 3.3.3: Require PDR space as part of large commercial development. The Plan would implement this policy through three developer options for new office projects greater than 50,000 square feet:

- 1) Build PDR on-site, as follows:
 - On former SALI parcels, require 0.5 FAR or 100 percent replacement of PDR, whichever is greater;
 - On former SLI parcels, require 0.5 FAR or 50 percent replacement of PDR, whichever is greater; and
 - Elsewhere, require 0.5 FAR.
 - Exempt from land area, for purposes of calculating the FAR, any land dedicated to affordable housing or publicly accessible open space fully open to the sky;
- 2) Build net new PDR off-site at 1.5 times the on-site requirement. This PDR can be built anywhere in SoMa (bounded by Market Street, The Embarcadero, South Van Ness Avenue, Thirteenth Street, Division Street, and China Basin); or
- 3) Preserve existing PDR space at 2.0 times the on-site requirement. This PDR can be preserved anywhere in SoMa not zoned SALI after Plan adoption (Market, The Embarcadero, South Van Ness, Thirteenth Street, Division Street, China Basin).

The Plan would also implement Policy 3.3.3 by evaluating the potential for development to meet its PDR requirement through payment of an in-lieu fee to the City to be used for the construction of new PDR and preservation/retention of existing PDR space. A project sponsor may choose between any of the PDR protection options in the Plan. Implementation of the above policies would be anticipated to reduce displacement of PDR uses and concomitant PDR employment that could otherwise occur as a result of implementing the Plan.

Additionally, with respect to land use compatibility, the Plan would allow housing in the MUO district south of Harrison Street, which could potentially result in land use conflicts related to noise for residential uses (noise-sensitive receptors) in proximity to nighttime entertainment and PDR uses. While the proposed Central SoMa Special Use District (SUD) Entertainment Subarea would allow nighttime entertainment uses as-of-right

in the four block area between Bryant, Townsend, Fourth and Sixth Streets, the underlying MUO use district would also allow housing. The compatibility of land uses with respect to noise is further discussed in Section IV.E, Noise and Vibration. This section also finds that new uses could be adequately protected from increased traffic noise from Plan-related development, through compliance with the *Building Code*. Existing sensitive land uses, however, would be adversely affected by increased traffic noise levels generated by increased traffic on Howard Street under two-way Howard and Folsom Streets network changes.

Accordingly, with the exception of potential land use incompatibility related to noise issues associated with the location of residential uses in proximity to nighttime entertainment and PDR uses, the Plan would not be demonstrably inconsistent with the Western SoMa Plan.

III.A.3 Other Area Plans

The Plan Area abuts the Downtown Plan boundaries to its north, generally along Folsom Street. The Downtown Plan contains objectives and policies that address the following issues: provision of space for commerce, housing, and open space; preservation of the past; urban form; and movement to, from, and within the downtown area. The aim of the Downtown Plan is to encourage business activity and promote economic growth downtown, as the city's and region's premier city center, while improving the quality of place and providing necessary supporting amenities. The Downtown Plan was intended to maintain a compact downtown core and direct growth to areas with developable space and easy transit accessibility so that downtown would "Encompass a compact mix of activities, historical values, and distinctive architecture and urban forms that engender a special excitement reflective of a world city."⁵⁰ The Downtown Plan also recognizes the "Importance of conserving resources that provide continuity with San Francisco's past"⁵¹, by including an implementing objective to catalogue Landmark and Significant Buildings inventoried in Articles 10 and 11 of the *Planning Code*. The Central SoMa Plan would expand the Transfer of Development rights program that protects historic resources to the Plan Area. No inconsistencies with the Downtown Plan have been identified.

The Plan Area is adjacent to the area covered by the Rincon Hill Plan, adopted in 2005. The Rincon Hill Plan calls for, among other things, envisions Folsom Street as a grand civic boulevard linking the high density neighborhoods to the north with the Rincon Hill Plan Area, through the enhancement of Folsom Street "into a walkable neighborhood center to serve the Rincon Hill and Transbay neighborhoods" (Rincon Hill Plan Objective 1.3), with ground-floor neighborhood-serving retail stores. Although the Plan Area does not overlap with the Rincon Hill Plan Area, the proposed street network changes would extend beyond the Plan Area and into the Rincon Hill Plan Area. The proposed street network changes, that is the expansion to the bicycle lane network, improvements to pedestrian walkability features, and expanded transit lanes, would be in keeping with the goals and policies of the Rincon Hill Plan, and thus, no inconsistencies are identified.

⁵⁰ Introduction to the Downtown Area Plan.

⁵¹ Downtown Plan, Preserving the Past, Objective 12.

III.A.4 Other General Plan Policies

Air Quality Element

The goal of the Air Quality Element is to “Give high priority to air quality improvement in San Francisco to protect its population from adverse health and other impacts of air pollutants.” The Element seeks to achieve this goal through achieving adherence to air quality standards; improvements related to mobile sources; land use planning; public awareness; reduction of dust; and energy conservation. Among the key policies in the Air Quality Element is the following:

Policy 3.5: Continue existing growth management policies in the city and give consideration to the overall air quality impacts of new development including its impact on the local and regional transportation system in the permit review process. Ensure that growth will not outpace improvements to transit or the circulation system.

The Air Quality Element further contains a policy to exercise air quality modeling in building design for sensitive land uses to protect residents; this is implemented in *Health Code* Article 38 and further addressed in Section IV.F, Air Quality (Air Objective 3, Policy 3.7). As described in Section IV.D, Transportation and Circulation, growth pursuant to the Plan would result in Muni ridership that would exceed Muni’s capacity utilization standard on one corridor crossing the southeast screenline, as well as on two corridors crossing Plan-specific cordon lines. As described in Chapter II, Project Description, the Plan would also result in transit delay on a number of Muni lines, due to increased congestion. On the other hand, the Plan would include a number of street network changes, such as dedicated transit lanes and new boarding islands, which would improve transit operations compared to conditions without the Plan. The Plan also would encourage growth along transit lines and would promote other modes of travel. Moreover, it is arguably the case that increased development adjacent and near to a rich variety of transit options and in proximity to other uses, as would occur in the Plan Area with implementation of the Plan, would result in lesser vehicle emissions per job and per housing unit than would be the case for a comparable amount of new development in a part of the Bay Area that is less well-served by transit and has less variety of land uses. This is borne out by the fact that the Plan would result in a decrease in automobile travel, as a percentage of all trips and would also result in a decrease in vehicle miles traveled per resident and per job compared to the regional average vehicle miles traveled. As described in Chapter II, Project Description, the Plan would also improve travel conditions for pedestrians and bicyclists through street network changes that would add mid-block crosswalks at a number of locations, prohibit new curb cuts on many block faces, and create new bicycle lanes.

Compatibility of the Plan with objectives and policies in the Air Quality Element will be considered by decision-makers as part of their decision whether to approve or disapprove the Plan. However, based on the above, the Plan appears to be substantially consistent with the overarching goals and principles of the Air Quality Element, in that it would achieve growth with lesser air quality impacts than a comparable degree of growth in an area less well-served by transit.

Housing Element

The 2014 Housing Element is a component of the *General Plan* and establishes the City’s overall housing policies. California State Housing Element law (*California Government Code* Sections 65580 et seq.) requires local

jurisdictions to adequately plan for and address the housing needs of all segments of its population in order to attain the region's share of projected statewide housing goals. This law requires local governments to plan for their existing and projected housing needs by facilitating the improvement and development of housing and removing constraints on development opportunities. San Francisco's 2014 Housing Element was required to plan for an existing and projected housing need of 28,869 new dwelling units.

The objectives, principles, and implementation strategies of the Plan are founded, in part, upon the policy direction of the Housing Element, particularly with respect to provision of affordable housing, and do not present a potential conflict with those policies. The rezoning of the Plan Area would remove restrictions on residential development in some parts of the Plan Area and allow for increased residential development potential through changes in allowable building heights. Further, where the Plan would remove restrictions to residential development, the Plan also includes policies that propose to increase the percentage of affordable housing requirements imposed on new residential development, thereby expanding the amount of affordable housing in the area, or providing additional fees for affordable housing to the city. Although the Plan's emphasis is on accommodating employment uses, the more flexible zoning proposed throughout the Plan Area would allow residential development in many locations where it is now prohibited, with commensurately higher levels of affordable housing production or funding than is now achievable.

Therefore, no inconsistencies have been identified and Plan implementation would not conflict with the objectives and policies of the Housing Element.

Urban Design Element

The Urban Design Element is concerned with the physical character and environment of the city with respect to development and preservation. The Urban Design Element addresses issues related to City Pattern, Conservation, Major New Development and Neighborhood Environment. Objective 3 of the Urban Design Element, "Moderation of major new development to complement the city pattern, the resources to be conserved, and the neighborhood environment," includes the following policies, among others:

- Policy 3.5:** Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development; and
- Policy 3.6:** Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction.

The Plan proposes to intensify development along and proximate to the new Central Subway line, currently under construction, including substantial increases in building heights at select locations—up to a maximum of 400 feet. In addition, several parcels north of the I-80 freeway and east of Fourth Street would be zoned to a maximum of 300 feet. While development in this area would not necessarily relate to the important attributes of the city pattern, it would function to reduce the visual prominence of the elevated freeway. As described in more detail in Section IV.B, Aesthetics, the Plan would not adversely affect public views. Therefore, no inconsistencies have been identified and the Plan would not conflict with the objectives and policies of the Urban Design Element.

Recreation and Open Space Element

The *General Plan's* Recreation and Open Space Element (ROSE) contains objectives and policies for maintaining, creating, and enhancing recreational and open space resources in the city. Beginning in 2007, the Planning Department, in conjunction with the San Francisco Recreation and Park Department, began updating the ROSE and a final updated element was adopted in April 2014. The primary focus of this update was to encourage high performance in the city's existing open space system; set priorities for areas to be acquired for new park and recreational facilities; improve the connectivity of the open space network, including public streets and right-of-ways; enhance biodiversity; and identify methods to acquire, improve and maintain recreational facilities, such as through the development of impact fees or through public/private partnerships.

The ROSE identifies portions of the Plan Area as in need of new public open space and the Plan recognizes existing recreational and open space deficiencies within the Plan Area. Implementation of the Plan would result in an increase in the numbers of residents in the Plan Area. The Plan calls for creating new open space and recreational facilities, including a network of pedestrian-friendly streets, alleys, and walkways that would serve as flexible public spaces to address the existing deficiencies, address or offset future demands for open space and recreational facilities, and address the lack of street connectors that lead to nearby large open spaces. Further, the plan seeks to ensure that new private development would augment the open space network. The Plan also would not result in overuse of existing recreational facilities to the extent that they would require expansion or replacement (see analysis in the Initial Study, Appendix B, of this EIR).

The Plan would increase building height limits in some portions of the Plan Area and facilitate development of buildings under Plan regulations at heights greater than currently allowable that may increase shadows on parks and open spaces in the Plan Area. Thus, implementing the Plan's height district amendments may conflict with the following policy in the Open Space Element:

Policy 1.9: Preserve sunlight in public open spaces.

As described in Section IV.H, Shadow, development in the Plan Area could result in the addition of small amounts of new shadow at limited times to several parks under the jurisdiction of the Recreation and Park Department (South Park, Victoria Manalo Draves Park, and the Gene Friend Recreation Center), as well as to other public open spaces and to certain publicly-accessible, privately owned open spaces. Section IV.H, Shadow, finds that new shadow from Plan-related development would not substantially adversely affect the public's enjoyment of these open spaces, and that the impact would be less than significant without mitigation. Height limits are also intended to protect sunlight on Yerba Buena Gardens, Alice Street Community Garden, the Bessie Carmichael School Yard, and, insofar as is feasible, a potential park site identified in the Plan on the block bounded by Fourth, Fifth, Bryant, and Brannan Streets (Assessor's Block 3777). Moreover, with respect to City parks, new construction in excess of 40 feet in height would be subject to *Planning Code* Section 295, which protects parks under the jurisdiction of the Recreation and Park Commission from substantial new shadowing.

Compatibility of the Plan with objectives and policies in the ROSE would be considered by decision-makers as part of their decision whether to approve, modify or disapprove the Plan. In light of the above, the Plan would not be substantially inconsistent with the overarching goals and principles of the ROSE.

Environmental Protection Element

The Environmental Protection Element addresses the environmental protection issues related to natural resource conservation and transportation noise and includes a comprehensive energy management plan. The element contains Land Use Compatibility Guidelines for Community Noise that indicate maximum acceptable noise levels for various newly developed land uses. As described in Section IV.E, Noise and Vibration, nearly all major streets in the Plan Area have traffic noise levels above 70 dBA, L_{dn} , meaning that the area is quite noisy by residential standards. The Central SoMa Plan, including the Two-Way Option for Howard and Folsom Streets, would conflict with the following objectives and policies in the Environmental Protection Element:

- Objective 9:** Reduce transportation-related noise;
- Policy 9.6:** Discourage changes in streets which will result in greater traffic noise in noise-sensitive areas;
- Objective 11:** Promote land uses that are compatible with various transportation noise levels; and
- Policy 11.1:** Discourage new uses in areas in which the noise level exceeds the noise compatibility guidelines for that use.

Existing sensitive land uses would be adversely affected by increased traffic noise levels generated by Plan traffic on Howard Street under two-way Howard and Folsom street network changes as further discussed in Section IV.E, Noise and Vibration. As also discussed in that section, new uses could be adequately protected from Plan-generated traffic noise through *Building Code* compliance.

The Plan also proposes to create a new Central SoMa SUD Entertainment Subarea in an area south of Bryant Street between Fourth and Sixth Streets. However, residential uses still would be allowed within this area. As discussed in Section IV.E, Noise and Vibration, there are currently only a small number of Places of Entertainment within the area proposed for the SUD. To the extent that new residential uses and new Places of Entertainment could locate in the proposed SUD, new entertainment venues would have to be soundproofed and new residential development would have to be designed to minimize noise conflicts with new and existing entertainment uses, as required by the City's recently adopted revisions to the *Building Code*, *Administrative Code*, *Planning Code*, and *Police Code*. Additionally, mitigation measures identified in Section IV.E would require that new noise-generating uses, including entertainment uses, be designed to minimize noise impacts on any nearby existing residential uses. Combined implementation of the City code provisions and mitigation measures would reduce the potential for noise conflicts between residential and entertainment uses and ensure consistency with the Environmental Protection Element.

Compatibility of the Plan with objectives and policies in the Environmental Protection Element will be considered by decision-makers as part of their decision whether to approve or disapprove the Plan. However, based on the above, the Plan would not be considered demonstrably inconsistent with the Environmental Protection Element's objectives and policies relating to noise; however, as noted above, the Central SoMa Plan plus the Two-Way Option for Street Network Changes on Howard and Folsom Streets could be inconsistent with the Environmental Protection Element policies related to reducing traffic noise.

III.B Other Plans

Environmental plans and policies are those, like the *Bay Area 2010 Clean Air Plan*, that directly address environmental issues and/or contain targets or standards that must be met in order to preserve or improve characteristics of the City's physical environment. The Plan's proposed street network changes and open space improvements do not appear to substantially conflict with any such adopted environmental plan or policy. (Consistency with clean air plans is discussed further in Section IV.G, Air Quality.)

III.B.1 Plan Bay Area

Plan Bay Area is driven by the need to meet the growth forecasts identified for the region in a Sustainable Communities Strategy, prepared by the Association of Bay Area Governments and Metropolitan Transportation Commission. *Plan Bay Area* estimates that approximately 92,000 additional housing units and 191,000 additional jobs would be added in San Francisco by 2040, which would equate to roughly 15 percent of the total growth anticipated in the region. *Plan Bay Area* sets out a plan to meet most of the region's growth in Priority Development Areas, (or PDAs), as identified by local governments. Much of the eastern third of San Francisco is within various PDAs; the Plan Area is contained within the Eastern Neighborhoods PDA, which also includes Rincon Hill, Western SoMa, the Mission District, Showplace Square and Potrero Hill, and the Central Waterfront.

The amendments to the *Planning Code* proposed by the Plan would "increase the areas where space for jobs and housing can be built" (Plan Objective 1.1), by "retain[ing] existing zoning that supports capacity for new jobs and housing" (Policy 1.1.1) and "replac[ing] existing zoning that restricts capacity for development with zoning that supports capacity for new jobs and housing" (Policy 1.1.2). The amendments would also "increase how much space for jobs and housing can be built" (Objective 1.2), by "increase[ing] height limits on parcels, as appropriate" (Policy 1.2.1) and "allow[ing] physical controls for height, bulk, setbacks, and open space to determine density" (Policy 1.2.2). To meet these objectives and policies, the Plan proposes to maintain existing MUO (Mixed Use, Office), MUG (Mixed Use, General), SOMA NCT (South of Market Neighborhood Commercial-Transit), and South Park use districts and replacing SLI (Service/Light Industrial), WS-SALI (Western SoMa Service, Arts, Light Industrial), and RED (Residential Enclave) use districts with MUO and WS-MUO zoning. The Plan would also increase height limits in certain parts of the Plan Area. Proposed use districts are shown in Chapter II, Project Description, on Figure II-3, while proposed height and bulk districts are shown on Figure II-7.

The proposed changes in allowable building heights, along with the replacement of floor area ratio maximums with density limits based on height, bulk, setback, and open space controls, would increase development capacity on a number of parcels in the Plan Area. *Plan Bay Area* envisions accommodating regional growth near transit. The Central SoMa Plan's objective of concentrating growth near transit would be consistent with the goals of *Plan Bay Area*.

III.B.2 The 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 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 SFPUC, and other appropriate City agencies to complete and coordinate an analysis and planning of a local action plan targeting GHG emission reduction activities. In September 2004, the Department of the Environment and the SFPUC published the Climate Action Plan for San Francisco: Local Actions to Reduce Greenhouse Gas Emissions. 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 from 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 plan. 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 are now in progress.

The Climate Action Plan cites an array of potential environmental impacts to San Francisco from climate change, including rising sea levels that could threaten coastal wetlands, infrastructure, and property; increased storm activity that could increase beach erosion and cliff undercutting; warmer temperatures that could result in more frequent El Niño storms causing more rain than snow in the Sierras, reducing snow pack that is an important source of the region's water supply; decreased summer runoff and warming ocean temperatures that could affect salinity, water circulation, and nutrients in the Bay, potentially altering Bay ecosystems; other possible effects to food supply and the viability of the state's agricultural system; possible public health effects related to degraded air quality and changes in disease vectors; and other social and economic impacts.

According to the Climate Action Plan, achieving these goals will require the cooperation of a number of different City agencies, which is being facilitated through an interdepartmental working group titled Adapt SF.⁵²

In 2013, the Department of the Environment published the Climate Action Strategy Update, which presents updated statistics of potential environmental impacts to San Francisco from climate change and an updated baseline GHG emissions inventory. The Climate Action Strategy Update indicates that moving to renewable electricity is the single biggest step the City can take to reduce GHG emissions and puts forth new climate action strategies to continue to reduce levels and performance indicators to measure progress. The GHG reduction strategies include driving investments toward energy efficiency in buildings, shifting modes of transportation away from the automobile, efforts to achieve zero waste to landfills, protection and expansion of the urban forest, and a focus on GHG emissions reductions in municipal operations—specifically in government buildings and fleet vehicles (including Muni buses).

An analysis of potential Plan effects on global warming and GHGs is presented in the Initial Study (Appendix B, Section E.7, Greenhouse Gas Emissions). The analysis concluded that, given subsequent development projects in the Plan Area would be required to comply with the City's existing regulations to reduce GHG emissions and other ongoing City and State regulations that will continue to reduce projects'

⁵² City of San Francisco Department of the Environment, *San Francisco Climate Action Strategy, 2013 Update*. October 13, 2013. Available at: http://sfenvironment.org/sites/default/files/engagement_files/sfe_cc_ClimateActionStrategyUpdate2013.pdf, accessed October 25, 2016.

contribution to climate change, the Plan would have a less-than-significant impact with respect to GHG emissions.

On September 8, 2016, Governor Jerry Brown signed Senate Bill 32 (SB32), which requires the State to further reduce GHG emissions by 40 percent below 1990 levels by year 2030. However, the City's 2008 GHG Reduction ordinance had already established a citywide reduction goal of 40 percent below 1990 levels by year 2025⁵³. The City's 2013 Update to the Climate Action Strategy⁵⁴ demonstrates that its GHG reduction strategies are predicted to reduce San Francisco's carbon footprint by 44 percent below the 1990 level by 2025, which would exceed the reduction requirements of its ordinance, which has a target date that precedes the new State law by five years. Consequently, even with the adoption of SB32, continued compliance with the City's existing regulations to reduce GHG emissions, other ongoing city, and state regulations that will continue to reduce projects' contribution to climate change and the Plan would have a less-than-significant impact with respect to GHG emissions.

Furthermore, the Plan contains an Environmental Sustainability chapter with objectives to minimize greenhouse gas emissions, minimize water waste, support biodiversity, access to nature, and a healthy ecosystem, improve air quality and help achieve zero solid waste. These policies would further reduce a project's contribution to greenhouse gas emissions.

Further, the Central SoMa Plan is one of the means by which San Francisco and the region as a whole could potentially meet State mandates under SB 375 to reduce per-capita greenhouse gas emissions because the Plan Area is within a designated PDA, a location where substantial growth could occur in such a way as to achieve these goals.⁵⁵

Based on the above, the Plan would not conflict with the Climate Action Plan and the 2013 Climate Action Strategy Update and regional and statewide actions to reduce greenhouse gas emissions.

III.B.3 San Francisco Bicycle Plan

In August 2009, the Board of Supervisors approved the San Francisco Bicycle Plan. The Bicycle Plan includes a citywide bicycle transportation plan (comprised of a "Policy Framework" and a "Network Improvement" document) 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 bike-ability. 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. The Final Environmental Impact Report for the Bicycle Plan assessed a total of 56 short-term and long-term bicycle improvement projects, including bicycle lanes on Fifth Street within the Plan Area. Along the eastern edge of the Central SoMa Plan Area, the Bicycle Plan EIR evaluated a bicycle lane project on Second Street; this project is currently

⁵³ *San Francisco Environment Code*, Chapter 9, Sections 900 through 908, "2008 GHG Reduction Ordinance", Ordinance No. 81-08, Approved April 29, 2008.

⁵⁴ City of San Francisco, *Climate Action Strategy 2013 Update*, October, 2013, p. vii, Available online at http://sfenvironment.org/sites/default/files/engagement_files/sfe_cc_ClimateActionStrategyUpdate2013.pdf, accessed October 27, 2016.

⁵⁵ *Plan Bay Area* was necessitated by the adoption of Senate Bill 375, which required regions to prepare a Sustainable Communities Strategy (or Alternative Planning Strategy) to reduce GHGs by linking growth to transit, resulted in higher jobs and housing growth projections.

undergoing further evaluation. As described in Chapter II, Project Description, the Plan's proposed street network changes would include bicycle improvements, including bike lanes and cycle tracks, both within the Plan Area and on surrounding streets, that would be in addition to the Bicycle Plan and thereby encourage increased bicycle use. Therefore, implementation of the Central SoMa Plan and street network changes would not conflict with the Bicycle Plan.

III.B.4 Better Streets Plan

The Better Streets Plan was adopted in 2010 to support the City's efforts to enhance the streetscape and the pedestrian environment. It classifies the city's public streets and rights-of-way and creates a unified set of standards, guidelines, and implementation strategies that govern how the City designs, builds, and maintains its public streets and rights-of-way. It comprises the Streetscape Master Plan and the Pedestrian Transportation Master Plan. Major project concepts applicable to the Plan include (1) pedestrian safety and accessibility features, such as enhanced pedestrian crossings, corner or midblock curb extensions, pedestrian countdown and priority signals, and other traffic calming features; (2) universal pedestrian-oriented streetscape design with incorporation of street trees, sidewalk plantings, streetscape furnishing, street lighting, efficient utility location for unobstructed sidewalks, shared single surface for small streets/alleys, and sidewalk/median pocket parks; and (3) integrated pedestrian/transit functions using bus bulb-outs and boarding islands (bus stops located in medians within the street). All such streetscape improvements would require coordination with other relevant City departments, such as the San Francisco Public Utilities Commission (SFPUC), Public Works, and the Fire Department, to ensure no disruption of service provision. The street network improvements included in the Plan were specifically developed for consistency with Better Streets Plan requirements, and these improvements and the Plan would not be inconsistent with the Better Streets Plan.

III.B.5 Transit First Policy

The City's Transit First policy, adopted by the Board of Supervisors in 1973, 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 following ten principles constitute the City's Transit First policy:

- To ensure quality of life and economic health in San Francisco, the primary objective of the transportation system must be the safe and efficient movement of people and goods;
- Public transit, including taxis and vanpools, is an economically and environmentally sound alternative to transportation by individual automobiles. Within San Francisco, travel by public transit, by bicycle and on foot must be an attractive alternative to travel by private automobile;

- Decisions regarding the use of limited public street and sidewalk space shall encourage the use of public rights of way by pedestrians, bicyclists, and public transit, and shall strive to reduce traffic and improve public health and safety;
- Transit policy improvements, such as designated transit lanes and streets and improved signalization, shall be made to expedite the movement of public transit vehicles (including taxis and vanpools) and to improve public safety;
- Pedestrian areas shall be enhanced wherever possible to improve the safety and comfort of pedestrians and to encourage travel by foot;
- Bicycling shall be promoted by encouraging safe streets for riding, convenient access to transit, bicycle lanes, and secure bicycle parking;
- Parking policies for areas well served by public transit shall be designed to encourage travel by public transit and alternative transportation;
- New transportation investment should be allocated to meet the demand for public transit generated by new public and private commercial and residential developments;
- The ability of the City and County of San Francisco to reduce traffic congestion depends on the adequacy of regional public transportation. The City and County shall promote the use of regional mass transit and the continued development of an integrated, reliable, regional public transportation system; and
- The City and County shall encourage innovative solutions to meet public transportation needs wherever possible and where the provision of such service will not adversely affect the service provided by the Municipal Railway. (Added November 1999.)

One of the goals of the Plan is to “Support growth with improved streets, additional open space, and other elements of ‘complete communities.’” The Plan would encourage growth in residential and employment uses, particularly office use, in a transit-accessible area, thereby encouraging the use of transit and alternative transportation modes. These factors would be expected to help minimize single-person auto travel in the future, which would be consistent with the intent of the Transit First Policy.

Section IV.D, Transportation and Circulation, analyzes potential transportation impacts of the Plan, including possible impacts on alternative transportation modes. Given that the Plan would: (1) increase sidewalk and crosswalk widths; (2) increase bike facilities; (3) increase dedicated transit lines; and (4) reduce the number of mixed-flow lanes (thereby increasing transit, pedestrian and bike facilities), in connection with the Plan’s emphasis on compact development proximate to a high level of transit service, along with pedestrian and bicycle improvements, would not be inconsistent with the Transit First Policy.

III.B.6 Muni Forward (formerly the Transit Effectiveness Project, or TEP)

The San Francisco Municipal Transportation Agency’s (SFMTA) Muni Forward is a system-wide program of projects to reduce transit travel time and improve transit customer experiences, service reliability, and transit service effectiveness and efficiency. The SFMTA has developed the Service Policy Framework, which sets forth transit service delivery objectives and actions to meet these objectives and supports the SFMTA Strategic Plan goals. Implementation of Muni Forward is guided by the Service Policy Framework and determines how

investments should be made to the transit system. Muni Forward includes the following categories of proposals: Service Improvements, Service-related Capital Improvements, and transit Travel Time Reduction Proposals (TTRPs). The SFMTA Board of Directors approved MUNI Forward in March 2014 (Planning Department Case No. 2011.0558E), including the majority of recommendations that emerged from the planning process and an overall 12 percent increase in Muni service. As of early 2016, Muni Forward has resulted in increased frequency of service on several transit lines serving the Plan Area, including the N and K/T Muni Metro light rail lines on Market Street and bus lines 8, 8AX, 8BX, 10, 14R, 14X, and 38R. As described in Chapter II, Project Description, the Central SoMa Plan proposes a number of street network changes, including dedicated transit lanes on Folsom, Harrison, and Third Streets and on portions of Bryant and Fourth Streets. Given this, and the fact that the Plan's first objective is, "Support transit-oriented growth, particularly workplace growth, in the Central SoMa area," the Plan would not be inconsistent with Muni Forward.

III.C Planning Code (Zoning)

The *Planning Code*, which incorporates by reference the City Zoning Maps, governs land uses, densities and the configuration of buildings within San Francisco. Permits to construct new buildings or to alter or demolish existing ones may not be issued unless a project conforms to the *Planning Code* or an exception is granted pursuant to provisions of the *Planning Code*.

The Plan would make alterations to the *Planning Code*, as described in Chapter II, Project Description. Principally, the Plan would rezone much of the Plan Area south of Folsom Street to the MUO use district (see Figure II-3, Proposed Plan Area Use Districts, in Chapter II, Project Description).⁵⁶ The Plan also proposes to increase allowable height limits on selected parcels (see Figure II-7, Proposed Plan Area Height and Bulk Districts, in Chapter II, Project Description). Physical effects of development that could occur pursuant to these changes are analyzed throughout Chapter IV and in the Initial Study (Appendix B).

III.C.1 Planning Code Section 295

Section 295 of the *Planning Code*, the Sunlight Ordinance, was adopted through voter approval of Proposition K in 1984 with the intent of limiting new shadow on open spaces under the jurisdiction of the Recreation and Park Commission. Section 295 applies to structures greater than 40 feet in height and governs the period from one hour after sunrise to one hour before sunset, year-round. Section 295(b) states that the Planning Commission, following a public hearing, "shall disapprove" any project governed by this section that would have an "adverse effect" due to shading of a park subject to Section 295, "unless it is determined that the impact would be insignificant." The Planning Commission's decision under Section 295 cannot be made "until the general manager of the Recreation and Park Department in consultation with the Recreation and Park Commission has had an opportunity to review and comment to the City Planning Commission upon the proposed project." In practice, Section 295 may further limit heights and/or shapes of certain buildings

⁵⁶ The Plan would modify existing zoning districts by amending their designation, primarily WS-SALI and SLI to MUO. The change in allowable uses is a component of the Plan studied in this EIR.

around protected parks; the Section 295 requirement is in addition to the height limits in the Height and Bulk districts.

Privately-owned open spaces, including any open spaces that are required under the *Planning Code* as part of an individual development proposal, are not subject to Section 295.

Shadow effects that are attributable to the Plan are analyzed qualitatively in Section IV.H, Shadow, of this EIR. This analysis does not present a quantification of anticipated new shadow on parks subject to Section 295. Such quantification is typically required for analysis of individual buildings under Section 295 and/or as part of project-specific review, where a project could potentially shade a Recreation and Park Department facility.

III.C.2 Planning Code Section 321

Section 321 implements the City's annual limit on office construction, which is set at 950,000 square feet per calendar year, with a subset of 75,000 square feet reserved for buildings smaller than 50,000 square feet. The limit applies to all office space citywide, not just downtown. Buildings smaller than 25,000 square feet are exempt; however, redevelopment plan projects are included, as are projects within San Francisco that are under the jurisdiction the State of California and federal agencies, including the Presidio Trust and National Park Service. Square footage not allocated during any given year is added to the overall allocation for succeeding years.

As of July 22, 2016, the Planning Department inventory of office space showed less than half a million (about 444,000) square feet of space available for large projects (those 50,000 square feet and larger), with an additional 1.08 million square feet available for smaller projects (25,000 to 49,999 square feet).⁵⁷ Another 875,000 square feet is added to the large project pool and another 75,000 square feet is added to the small project pool each October (the start of the Section 321 year). The 2012–2013 Section 321 year was the most active in the history of the office allocation program, with 3.6 million square feet of large projects approved (no small projects were approved); the Salesforce (formerly Transbay) Tower at 101 First Street at Mission Street represented 38 percent of this total, at 1.37 million square feet. This building is currently under construction. After a lull in 2013–2014, another 2.2 million square feet of office projects was approved in the 2014–2015 Section 321 year, including “Park Tower” (250 Howard Street) in Zone 1 of the Transbay Redevelopment Area (767,000 square feet; groundbreaking occurred in October 2015) and 633,500 square feet of office space in the 5M Project at Fifth and Mission Streets.

As of July 2016, the Planning Department reported four large projects with applications pending for allocation of office space totaling 1.16 million square feet. One project, the proposed conversion of the San Francisco Design Center building at 2 Henry Adams Street from showrooms to office space (246,000 square feet; Case No. 2013.1593), was effectively denied in July 2014 when the Board of Supervisors Land Use Committee tabled a resolution designating the building a City Landmark, an action that was required to allow the office conversion. This action essentially reduced the 1.16 million square feet of pending space as of November 2015 to 910,000 square feet.

⁵⁷ San Francisco Planning Department, “Office Development Annual Limitation (Annual Limit) Program Update,” July 22, 2016. Allocations in square feet of gross floor area, as defined in *Planning Code* Section 102.9. Available at http://zasfplan.sfplanning.org/ANLM/Office_Allocation_Stats.pdf, accessed October 24, 2016.

Of the other three projects, two are in the Plan Area and are undergoing environmental review: a proposed 700,000 square-foot building in the Central SoMa Plan Area at 598 Brannan Street (Case No. 2012.0640E) and a four-story, 89,800 square-foot addition to an existing seven-story building at 633 Folsom Street (Case No. 2014.1063). The fourth proposal would convert 119,600 square feet of PDR space in the San Francisco Armory at 1800 Mission Street to office use.

The large building inventory reached a maximum of just over 5.1 million square feet available at the start of the 2012–13 allocation period in October 2012. As of July 2016, the Planning Department has environmental or other applications on file for some 6.9 million square feet of office space, considerably more than the 444,000 square feet available. The largest projects on file include redevelopment of the San Francisco Flower Mart site at Sixth and Brannan Streets, within the Plan Area (approximately 2.0 million square feet), redevelopment of the bayside portion of Pier 70 (approximately 1.8 million square feet), a mixed-use project at Seawall Lot 337 (the San Francisco Giants’ “Mission Rock” project on Port of San Francisco Land; approximately 1.3 million square feet), and an approximately 907,000 square-foot office project at 725–735 Harrison and Fourth Street, also within the Plan Area. There are applications on file for 3.8 million square feet of office space in seven separate projects within the Central SoMa Plan Area, including two small (less than 50,000 square-foot) projects.

As noted, an additional 950,000 square feet (875,000 square feet for large projects and 75,000 square feet for small projects) of space is added to the available inventory each October. If during a particular year large office projects come before the Planning Commission for approval of more office space than is available, the Commission must compare the proposed projects and approve those that “promote the public welfare, convenience and necessity,” based on criteria that include:

- Maintaining a balance between economic growth, on the one hand, and housing, transportation and public services, on the other;
- Projects’ contribution to, and effects on, the objectives and policies of the *General Plan*;
- Design quality;
- Suitability of each project for its location and any location-specific effects;
- The anticipated uses of each project, “in light of employment opportunities to be provided, needs of existing businesses, and the available supply of space suitable for such anticipated uses;”
- The extent to which a project “will be owned or occupied by a single entity;” and
- The use, if any, of transferrable development rights to assist in preservation of existing historic structures (*Planning Code* Section 321(b)).

The more than 10 million square feet of office space assumed to be developed in the Plan Area over the next 20 years represents about 11 years of the annual limit’s large building allocation. However, as noted above, there are other very large office projects outside the Plan Area that would be anticipated to draw down the office space allocation.

In contrast to the large office allocation, the inventory available for smaller buildings is nearly 15 times the annual allocation of 75,000 square feet. The small building inventory has increased in all but five years since the annual limit took effect in 1985. Office projects within the Plan Area would be subject to Section 321.

Accountable Planning Initiative

In November 1986, the voters of San Francisco approved Proposition M, the Accountable Planning Initiative, which added Section 101.1 to the *Planning Code* to establish eight Priority Policies. These policies are: (1) preservation and enhancement of neighborhood-serving retail uses; (2) protection of neighborhood character; (3) preservation and enhancement of affordable housing (discussed in Appendix B, Initial Study; Section D.2, Population and Housing, Question 3b, with regard to housing supply and displacement issues); (4) discouragement of commuter automobiles (discussed in Section IV.D, Transportation and Circulation); (5) protection of industrial and service land uses from commercial office development and enhancement of resident employment and business ownership; (6) maximization of earthquake preparedness (discussed in Appendix B, Initial Study; Section E.13, Geology and Soils, Questions 14a through 14d); (7) landmark and historic building preservation (discussed in Section IV.C, Cultural and Paleontological Resources); and (8) protection of open space (discussed in Section IV.H, Shadow; also see Appendix B, Initial Study; Section E.8, Wind and Shadow, Questions 8a and 8b; and Question 9, Recreation, Questions 9a and 9c). The Priority Policies, which provide general policies and objectives to guide certain land use decisions, contain some policies that relate to physical environmental issues. Prior to issuing a permit for any project that requires an Initial Study under CEQA, and prior to issuing a permit for any demolition, conversion, or change of use, and prior to taking any action that requires a finding of consistency with the *General Plan*, the City is required to find that the proposed project or legislation is consistent with the Priority Policies. In evaluating *General Plan* consistency of the Plan, the Planning Commission and/or Planning Department would make the necessary findings of consistency with the Priority Policies.

The staff report for the Planning Commission will analyze the Plan's consistency with *General Plan* policies and zoning, and will discuss in detail any modifications required in connection with Plan adoption.

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CHAPTER IV

Environmental Setting, Impacts, and Mitigation Measures

Overview

This chapter analyzes the physical environmental effects of implementing the Central SoMa Plan (the Plan) described in Chapter II, Project Description, including associated street network changes and open space improvements. This chapter describes the environmental and regulatory settings for topics evaluated under the California Environmental Quality Act (CEQA), assesses impacts, and identifies feasible mitigation measures to avoid or substantially reduce impacts that have been determined to be significant. This EIR evaluates the maximum environmental impact that could result from the implementation of all components of the Plan policies and where applicable, subsequent development projects.

Initial Study

On February 12, 2014, following the release of the 2013 draft Central SoMa Plan for public review, the Planning Department prepared an Initial Study to determine which environmental topics would require further study and analysis in an EIR. The Initial Study (Appendix B) found the topics of: Population and Housing; Greenhouse Gas Emissions; Recreation and Public Space; Public Services; Geology, Soils and Seismicity; Mineral and Energy Resources; and Agriculture Resources to be less than significant, and would require no further study in the EIR. The Initial Study found significant impacts related to Biological Resources and Hazards and Hazardous Materials, and mitigation measures were identified and would reduce those impacts to less than significant. The Initial Study's conclusions are summarized in Table S-2 in the Summary.

Because the draft 2013 Plan has been superseded by the current Plan, published in August 2016, an evaluation has been conducted to ensure that the Initial Study's conclusions, based on the prior draft of the Plan would remain valid for the current 2016 draft Plan for those topics evaluated in the Initial Study. The primary differences between the two plans include: geography (the 2016 draft Plan Area occupies a smaller area fully contained within the larger 2013 draft Plan Area); the 2016 draft Plan includes a single height proposal as opposed to two height options in the 2013 draft Plan; the 2016 draft Plan includes a variety of strategies to promote retention of Production, Distribution and Repair (PDR) uses, whereas the 2013 draft Plan included none. And lastly, while both plans would regulate building envelope, setback, and lot consolidation, they would do so in different ways, with the more detailed controls in the current 2016 draft Plan replacing similar, but less exacting requirements of the 2013 draft Plan. Because the area of effect became more limited, proposed zoning and height options became more focused, proposed regulations more stringent and exacting than the 2013 draft Plan, the differences between the two Plans would not result in new effects or more severe physical environmental impacts than those disclosed in the Initial Study. As such, the findings relating to topics of

population and housing; recreation; utilities and service systems (except for potential impacts related to wastewater, which is addressed in this EIR); public services; geology and soils; hydrology and water quality (except for potential impacts related to effects of combined sewer system operation on water quality and potential impacts of sea level rise, also addressed in this EIR); biological resources; hazardous materials; mineral and energy resources; and agricultural resources would continue to be less than significant or less than significant with mitigation and no further analysis of topics covered in the Initial Study is required.

Scope and Organization of Analysis

This chapter is organized by environmental resource topic, as follows:

Chapter IV Sections	
A. Land Use and Land Use Planning	F. Air Quality
B. Aesthetics	G. Wind
C. Cultural and Paleontological Resources	H. Shadow
D. Transportation and Circulation	I. Hydrology and Water Quality
E. Noise and Vibration	

Each of the environmental topics in the table above is presented within a setting, which is a description of the physical characteristics germane to the environmental topic in order to compare conditions as they exist without the Plan and then again with anticipated activities, regulations and subsequent development under the Plan, which is the basis for the analysis of environmental impacts. Thus, the evaluation of impacts in Chapter IV, Environmental Setting, Impacts, and Mitigation Measures under each environmental topic is based on specific “study areas” dictated by the characteristics of the resource being evaluated, as well as by the type, magnitude and location of where potential environmental effects could occur. The introduction to each of the resource topics in Chapter IV defines the setting where effects of the Plan are considered and clarifies the relevant details regarding the definition and location of the study area if it were to differ from the Plan Area as shown on Figure II-1, Central SoMa Plan Area Boundaries, in Chapter II, Project Description.

Each section of Chapter IV contains the following elements, based on the requirements of CEQA:

- **Environmental Setting.** This subsection presents a description of the existing physical environmental conditions in the Plan Area with respect to each resource topic as of April 2013, which is the date the San Francisco Planning Department issued a Notice of Preparation initiating environmental review of the Central SoMa Area Plan. The environmental setting constitutes the baseline physical conditions by which potential impacts of the Plan are assessed for significance. CEQA Guidelines Section 15360 defines the environment (or the setting) as “the physical conditions which exist within the area which will be affected by a proposed project.”
- **Regulatory Framework.** This subsection describes the relevant laws, regulations, and ordinances that apply to the environmental resources within the Plan Area and the governmental agencies responsible for enforcing those laws and regulations. (Chapter III identifies the potential environmental impacts attributable to possible planning and policy inconsistencies that may occur if the Central SoMa Plan were adopted.)

- **Impacts and Mitigation Measures.** This subsection evaluates the potential for the proposed project to result in adverse environmental effects. Significance criteria for evaluating the environmental impacts are defined at the beginning of this subsection, and the “Approach to Analysis” presents the thresholds of significance relevant to the topical significance criteria used to evaluate the impacts of the Plan and associated street network changes and open space improvements. The conclusion of each impact analysis is expressed in terms of the impact significance, which is discussed further under “Significance Determinations,” below. Mitigation measures are identified where feasible for the impacts considered significant, consistent with CEQA Guidelines Section 15126.4, which states that an EIR “shall describe feasible measures which could minimize significant adverse impacts” CEQA Guidelines Section 15364 defines feasible as “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors. The Planning Department, as sponsor of the proposed project, has indicated that, if the Central SoMa Plan were approved, then all feasible mitigation measures identified in this EIR that are within its purview would be implemented. In addition, this EIR may identify Improvement Measures, which are measures that are not required by CEQA because they are not necessary to mitigate significant impacts, but could nevertheless be implemented to reduce the severity of less-than-significant impacts.
- **Cumulative impacts** are discussed following the description of Plan impacts and identified mitigation measures. CEQA Guidelines Section 15355 states that cumulative impacts “refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” The cumulative impacts analysis considers the incremental effects of implementing the Plan together with the environmental effects of other closely-related past, present, and reasonably foreseeable probable future projects proposed by the Planning Department, other jurisdictions, or other entities (i.e., private developers, non-profit organizations, etc.). The analysis of cumulative impacts under each resource topic is based on the same setting, regulatory framework, and significance criteria as the analysis of project-specific impacts. Additional mitigation measures are identified if the analysis determines that the proposed project causes or makes a cumulatively considerable contribution to a significant adverse cumulative impact.

Significance Determinations

The significance criteria used in this EIR are based on the San Francisco Planning Department’s Environmental Planning Division (EP) guidance regarding the thresholds of significance used to assess the severity of the Plan’s environmental impacts. EP guidance is based on Appendix G of the CEQA Guidelines, with some modifications. The significance criteria used to analyze each environmental resource topic are presented in each resource section of Chapter IV before the discussion of impacts. The categories used to designate impact significance are described as follows:

- **No Impact.** An impact is considered not applicable (no impact) if there is no potential for impacts or the environmental resource does not occur within the Plan Area or the area of potential effects; essentially a project would result in no physical changes in the Setting. For example, because the Plan Area is not within the vicinity of a private airstrip, there would be no impacts related to exposure of people residing or working in the Plan Area to excessive noise levels within the vicinity of a private airstrip. Many of these impacts were addressed in the Initial Study. Remaining impacts are discussed in the Approach to Analysis section of each environmental topic.

- **Less-than-Significant Impact.** This determination applies if there is potential for some limited effect, but not a substantial adverse effect that qualifies under the significance criteria as a significant impact. No mitigation is required for impacts determined to be less than significant.
- **Less-than-Significant Impact with Mitigation.** This determination applies if implementation of the Plan would result in an adverse effect that meets the significance criteria but feasible mitigation is available that would reduce the impact to a less-than-significant level.
- **Significant Unavoidable Impact or Significant and Unavoidable with Mitigation.** This determination applies if implementation of the Plan would result in an adverse effect that meets the significance criteria but there appears to be no feasible mitigation available to reduce the impact to a less-than-significant level or when the efficacy of a mitigation measure could not predict whether an impact would be fully reduced to insignificance. There may be certain situations in which mitigation may lessen a given impact, but the residual effects of that impact may continue to be adverse even after implementation of the mitigation measure(s). If this were the case, the EIR would characterize the impact as significant and unavoidable.

Analysis Assumptions

This EIR analyzes the potential environmental effects of the Central SoMa Plan and associated street network changes and open space improvements. The analysis of physical impacts is based in part upon growth projections developed by the Planning Department for the Plan that inform the analysis of the Plan. The resulting conclusions inform the qualitative analysis of land use changes, while the quantitative analysis of, for example, changes in traffic patterns and transit ridership, is based on projected growth in population and employment.

CEQA directs lead agencies to identify the potential environmental effects of a project and to determine the significance of a project's environmental effects. CEQA contains a substantive mandate to mitigate adverse impacts. This EIR considers direct and indirect physical environmental effects that may be attributable to Plan implementation. A direct physical change in the environment is "a physical change in the environment which is caused by and immediately related to the project." An indirect physical change in the environment is "a physical change in the environment which is not immediately related to the project, but which is caused indirectly by the project." An EIR would only consider indirect effects if the change "is a reasonably foreseeable impact which may be caused by the project. A change which is speculative or unlikely to occur is not reasonably foreseeable." In general, economic and social changes resulting from a project are not treated as significant effects on the environment.⁵⁸ Social and economic effects are only relevant under CEQA if they would result in or are caused by an adverse physical impact on the environment. To the extent that social or economic changes associated with Plan implementation may engender secondary or indirect physical changes, such effects are addressed in this EIR.

A discussion of socioeconomic effects is presented in Chapter V, Other CEQA Considerations, for informational purposes.

⁵⁸ CEQA Guidelines Sections 15064(d)(1)–(3) and 15064(e).

Growth Assumptions

Citywide growth forecasts prepared by the Planning Department are part of the basis of the analysis in this EIR. The Department regularly updates citywide growth forecasts that are based on Association of Bay Area Governments' (ABAG) regional projections of housing and employment growth. The Department allocates the regional growth forecasts to 981 Traffic Analysis Zones (TAZs)⁵⁹ in San Francisco by first accounting for in-city growth that is already anticipated (both individual projects and planning efforts) in the so-called development pipeline, subtracting pipeline growth from the City's share of the regionally forecast growth, and allocating the residual amount of ABAG-forecast growth on the basis of weighting factors developed from analysis of both development capacity and existing development. To establish baseline numbers for the Plan, the Planning Department relied on a 2010 Dun & Bradstreet database for employment numbers and the 2010 Census and the Department's Land Use Database for existing housing units. It is noted that the growth forecasts for the No Project condition (2040 Baseline) and for the Plan differ somewhat from those shown in the Initial Study due to modifications to the Plan since the Initial Study was published.⁶⁰

Table IV-1, Summary of Growth Projections, presents the population and employment growth assumed in the Plan Area between 2010 (the base year for the analysis) and 2040 ("buildout year" or "planning horizon"). This growth amounts to approximately 14,400 additional households, approximately 25,500 additional residents and about 63,600 additional jobs under the Plan. It is noted that a certain amount of development and growth in the Plan Area would be expected to occur even without implementation of the Plan. In many cases, existing development does not reach its full potential under current building height limits, and those parcels could be developed regardless of future changes in land use policies and zoning controls. Development that could occur without project implementation is shown in the table below under the No Project scenario.

Approach to Analysis

The Central SoMa Plan is a regulatory program. Its approval would mean that the City would amend the *General Plan*, *Planning Code* and associated Zoning Maps, including height and bulk district maps, to reflect the regulations as amended by the Plan. Adoption of the Plan and implementation of its various components would not result in direct physical changes in the environment. The use districts, *Planning Code* controls (particularly the amended limits to height and bulk districts), land use policies and design guidelines have been developed to encourage and incentivize subsequent development of housing, commercial and employment generating uses within the Plan Area. These uses and activities are considered the logical consequences of adopting the Plan. This EIR considers the environmental impacts of the uses and activities of the Plan and its components subsequent to Plan adoption, which are the indirect effects of the Plan and are studied at a "programmatic level" of review. On the other hand, because sufficient detail exists related to the

⁵⁹ TAZs are the smallest geographic units of measurement associated with existing job and household counts.

⁶⁰ Since publication of the Initial Study, Plan development assumptions have been modified to add development capacity to a portion of the block bounded by Bryant, Fifth, Brannan, and Sixth Streets (location of the San Francisco Flower Mart) and allow for approximately 430 units of affordable housing at Fifth and Howard Streets. In addition, development forecasts were adjusted to move the approved 5M Project and the under-construction Moscone Center Expansion from Plan-induced growth to cumulative growth. These modifications to the growth assumptions would not result in substantial or more severe physical impacts for topics evaluated in the Initial Study.

Plan's open space and street network improvements, this EIR considers the direct physical impacts of implementing these Plan components at a "project level" of review, unless otherwise noted.

TABLE IV-1 SUMMARY OF GROWTH PROJECTIONS

	Baseline (2010)	No Project (2040)	Central SoMa Plan (2040)
Housing Units (Total)	7,800	16,800	22,300
Change from Baseline	—	9,000	14,500
Change from No Project	—	—	5,500
Households (Total)^a	6,800	16,000	21,200
Change from Baseline	—	9,200	14,400
Change from No Project	—	—	5,200
Population (Total)^b	12,000	28,200	37,500
Change from Baseline	—	16,200	25,500 ^c
Change from No Project	—	—	9,300
Employment (Jobs) (Total)	45,600	72,800	109,200
Change from Baseline	—	27,200	63,600 ^c
Change from No Project	—	—	36,400

SOURCE: San Francisco Planning Department, 2016; Fehr & Peers, 2015.

NOTES:

Numbers rounded to nearest 100; some columns and rows do not add due to rounding.

- Assumes an 87 percent occupancy rate for existing households (2010 Baseline) which is based on the 2010 Census Data and appears to reflect a large number of newly constructed but not yet occupied units. Assumes a 95 percent occupancy rate for all Plan Area households and existing households under future conditions in the remaining years.
- Assumes 1.77 persons per household.
- As described in Chapter VI, Alternatives, the Land Use Variant would result in about 10 percent fewer new housing units and about 4 percent more new employment than would the Plan in 2040.
- The 2016 Central SoMa Plan is contained entirely within the boundaries of the 2013 draft Plan Area. The Department analyzed projected growth in employment and residential uses for the 2013 draft Plan and determined that 95 to 97 percent of this projected growth is anticipated to occur in the 2016 draft Plan Area. Thus, the numbers presented in this table, are conservative (i.e., higher) and would not substantively alter the conclusions reached in this EIR. These modifications to the growth assumptions would not result in substantial or more severe physical impacts for topics evaluated in the Initial Study.

The EIR assumes that the amended land use regulations and policy programs associated with the Plan would apply to subsequent development projects, that if implemented could result in physical changes in the environment. Future changes in land uses would, thus, not be caused by Plan policies or zoning, but by subsequent development projects that could occur on individual sites within the Plan Area as a result of these policy and zoning changes. In parts of the Plan Area where amended regulations would result in increases to maximum building heights, this EIR anticipates subsequent development to be more likely to occur than without the Plan. This is because the regulatory changes and policies proposed by the Plan have been developed to incentivize subsequent development by expanding the types of land uses that may be permitted

in areas where they are currently restricted or prohibited by creating incrementally greater potential buildable area on sites through changes in permitted height limits and building bulk controls.⁶¹

Analysis of the physical effects of implementation of the Plan is based in part on the above growth assumptions, which are of primary relevance for the analysis of effects related to the intensity of development and associated activities, such as transportation, air quality, and noise.

For other effects related to the physical realm, the Planning Department considered changes in height districts in conjunction with an analysis of soft sites (i.e., sites developed with a relatively lower-value use than allowed by the zoning, such as a service station or an older industrial building that is well shorter than the height limit) to gauge the likelihood of certain sites being developed, to create a model that reflects build out of the Plan Area if the Plan's proposed amendments to use districts and permitted height districts were adopted. The resulting computer-generated model is used to evaluate shadow and aesthetic impacts. It is also the basis for a physical model that is assembled and tested in a boundary layer wind tunnel to determine the Plan's effects on pedestrian-level winds.

The three-dimensional model does not incorporate fine-grained architectural detailing for each parcel. Instead, the model consists largely of simple extrusions of blocks and lots in the Plan Area to represent a buildout condition that reflects base height limits of up to 85 feet. Where heights would be permitted above the 85-foot-limit, building features such as reduced floorplates and upper-level setbacks were incorporated into the model in a manner to reflect *Planning Code* requirements pertaining to building bulk and mass.

Soft sites are assumed more likely to redevelop under the Plan than a site occupied by a relatively higher-value use (e.g., an office or residential building at or close to the height limit). The model assumes that soft sites are redeveloped and other sites that are currently occupied by higher value uses would remain. These assumptions, with a limited number of exceptions, are not based on actual project applications on file with the Planning Department. Instead, they reflect the Department's judgment related to the potential for development within the Plan Area. These assumptions inform an understanding of the intensity and capacity of future population growth within the Plan Area as a consequence of implementing the Plan's regulatory program and should not be understood as predicting how a particular site would change in the future.

It is noted that, while the assumptions are based on aggregating outcomes facilitated by the Plan's regulatory changes, there could also be specific situations, conditions or constraints not considered by these assumptions that would constrain or result in no physical changes at certain locations within the Plan Area. In particular, the model of the Plan Area incorporates assumptions that some sites, due to existing constraints that are assumed to continue into the future, may not fully build out to the maximum land use and building intensities assumed for the Plan articulated in the Plan's Goal VIII (see Chapter II, Project Description). Subsequent development may be constrained by *Planning Code* requirements that limit that separation of towers, as well as other factors. Accordingly, the assumptions driving Plan Area build out may be viewed as conservative.

⁶¹ Please refer to Table VI-1 in Chapter VI, Alternatives for a comparison of estimated increases in development that would occur under the Plan as compared to a number of Plan alternatives, including a No Project alternative.

Subsequent Development Projects

The EIR analyzes the Plan at a “program” level of analysis pursuant to CEQA Guidelines Section 15168. The following is a list of known subsequent development projects (based on a review of the Department’s Environmental Evaluation Applications) located within the Plan Area that would occur under the Plan, if approved. Accordingly, these projects are not considered in the cumulative analysis, but rather in the Plan analysis, as the proposed uses and intensity of development would be allowed under the Plan. It is important to note that this EIR does not analyze the specific environmental impacts of these projects. These projects would be subject to their own environmental evaluation, as described in Chapter I, Introduction.

- **630–698 Brannan Street (Flower Mart site):** The proposed development would include approximately 2,030,600 square feet of office, 99,000 square feet of retail, and 115,000 square feet of PDR uses. Existing buildings on the Flower Mart site to be demolished include one existing single-story warehouse-style building, four single-story-with-mezzanine buildings, two single-story retail/warehouse buildings, and one single-story industrial building—totaling 157,541 square feet on four adjoining lots.
- **725 Harrison Street:** The proposed development would include 907,300 square feet of office, and 53,600 square feet of flexible space could accommodate PDR uses.
- **598 Brannan Street:** The proposed development would consist of four new buildings containing 984,400 square feet of office, 61,340 square feet of retail, and 104,800 square feet of residential (approximately 100 dwelling units). Existing buildings to be demolished include the four existing one- and two-story commercial, industrial, and warehouse buildings and associated surface parking lots. The proposed project would also include a new approximately 33,000 square-foot park at the center of the project site.
- **505 Brannan Street:** The proposed project is a vertical addition to an office building approved by the Planning Commission in December 2014, and in construction as of February 2016. The proposed project will consist of up to 165,000 square feet of office space on 11 floors above the six-story base project. The combined buildings will have a height of 240 feet.
- **636–648 Fourth Street:** The proposed project would include a 350-foot-tall primarily residential tower with 427 units and approximately 3,200 square feet of ground floor commercial space. Two existing one and two story commercial buildings and general advertising billboard would be demolished.
- **225 Shipley Street:** The proposed project would demolish the existing two-story, wood-framed commercial building and construct a new 45-foot-high, 11,496-square-foot residential building containing nine residential units.
- **265 Shipley Street:** The proposed project would include a lot merger and construction of a new five-story, nine-unit residential building, with six off-street parking spaces located in a below-grade garage.
- **300 Fifth Street:** The proposed project would include an eight-story building with seven floors of hotel use and residential units on the eighth floor. Additional mechanical and building support spaces would be included on a partial basement level.
- **345 Sixth Street:** The proposed project would construct an eight-story, mixed-use building with 89 single-residency occupancy units and a 3,090 square-foot commercial space.

- **350 Second Street:** The proposed project would construct a 21-story hotel with 480 rooms, 4,600 square feet of retail, 6,650 square feet of open space, including 5,750 square feet of public open space, 30 off-street valet parking spaces, and two new public art pieces.
- **399 Fifth Street:** The proposed project would construct a seven-story hotel with retail space on the ground floor.
- **400 Second Street:** The proposed project would demolish the existing one- to four-story buildings and construct three new buildings.
- **451–453 Tehama Street:** The proposed project would add two dwelling units to a four-dwelling-unit building.
- **462 Bryant Street:** The proposed project would add five stories, or approximately 49,995 square feet of office space, for a total of 63,239 square feet of office space, as well as a green roof and a commonly-accessible rooftop deck. The first-floor office and basement-level will remain.
- **481–483 Tehama Street:** The proposed project would demolish the existing two-story building and construct a new four-story residential building with six units.
- **31 Bryant Street:** The proposed project would retain the existing façade and construct a new six-story building.
- **Fifth, Clara, and Shipley Streets:** The proposed project would demolish the existing commercial buildings and construct a new mixed-use building.
- **655 Fourth Street:** The proposed project would demolish the existing buildings on site and build residential towers with approximately 900 units of residential housing, ground-floor retail, and a public plaza.
- **667 Folsom Street:** The proposed project would include demolition of a two two-story buildings and construction of a 130-foot-tall, 13-story, mixed-use building containing 240 dwelling units and 11,179 square feet of commercial retail space.
- **725–765 Harrison Street:** The proposed project would include construction of a mid-rise building and tower containing residential and production, distribution, and repair uses, as well as publicly-accessible open space.
- **744 Harrison Street:** The proposed project would demolish the existing two-story building and construct a new eight-story building with commercial, office, and residential uses.
- **768 Harrison Street:** The proposed project would demolish an existing two-story building and construct a new nine-story building with retail on the ground floor and mezzanine, with residential uses above.
- **88 Bluxome Street:** The proposed project would demolish the existing building and construct a new building containing office use, a fitness club, retail space, and underground parking and loading.
- **909–921 Howard Street:** The proposed project would demolish two two-story commercial buildings and construct a new mixed-use building with 178 residential units and approximately 8,051 square feet of retail space on the ground floor.
- **953–955 Folsom Street:** The proposed project would construct a nine-story building with commercial space and 18 residential units.

- **980 Folsom Street:** The proposed project would demolish the one-story building and construct a new mixed-use building containing 34 residential units and ground-floor retail.
- **996 Mission Street:** The proposed project would demolish a two-story building and construct and eight-story hotel with ground-floor retail.
- **999 Folsom Street:** The proposed project would demolish a former gas station and construct a seven-story mixed-use building with 84 residential units.
- **300 Fifth Street:** The proposed project would demolish the existing gas station and construct a new eight-story building with 11 residential units and ground-floor retail.

Cumulative Impacts

Defining Cumulative Impacts

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

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

An EIR must then determine whether an individual project’s contribution to a cumulative impact is *considerable*. This means that the project’s proportional share is deemed to be adverse in conjunction with other similar projects that may combine to result in physical impacts.

The cumulative impact analysis for each individual resource topic is described in each resource section of this chapter, immediately following the description of the project-specific impacts and mitigation measures.

Approach to Cumulative Impact Analysis

Two approaches to a cumulative impact are articulated in CEQA Guidelines Section 15130(b)(1): (a) the analysis can be based on a list of past, present, and reasonably foreseeable probable future projects producing closely related impacts that could combine with those of a proposed project, or (b) a summary of projections contained in a general plan or related planning document can be used to determine cumulative impacts. The analysis in this EIR employs both the list-based approach and a projections approach, depending on which approach best suits the individual resource topic being analyzed. For instance, Section IV.B, Aesthetics, considers several large individual projects that are anticipated or approved in the Plan Area and vicinity and that could alter the visual character and views in and surrounding the Plan Area, while at the same time making assumptions regarding other development patterns that are likely to occur as part of anticipated long-range growth. By comparison, Section IV.D, Transportation and Circulation, relies on the San Francisco County Transportation Authority's citywide travel forecasting model that encompasses many reasonably foreseeable individual projects anticipated in and surrounding the Plan Area, as well as elsewhere in San Francisco, and takes into account regional growth projections, which is the typical methodology the Planning Department applies to analysis of transportation impacts.

The following factors were used to determine an appropriate list of individual projects to be considered in the cumulative analysis:

- **Similar Environmental Impacts**—A relevant project contributes to effects on resources that are also affected by the proposed project. A relevant future project is defined as one that is “reasonably foreseeable,” such as a proposed project for which an application has been filed with the approving agency or has approved funding.
- **Geographic Scope and Location**—A relevant project is located within the geographic area within which effects could combine. The geographic scope varies on a resource by resource basis. For example, the geographic scope for evaluating cumulative effects to regional air quality consists of the affected air basin.
- **Timing and Duration of Implementation**—Effects associated with activities for a relevant project (e.g., short-term construction or demolition, or long-term operations) would likely coincide in timing with the related effects of the proposed project.

Based on the above, “large-scale” individual projects in and near the Plan Area are considered in the cumulative impact analysis. Past, present and probable future projects (CEQA Guidelines Section 15130(b)(1)(A)) in the Plan Area's vicinity, but outside of its boundaries, consist of the following:

- The “5M Project,” a 1.8-million-square-foot mixed-use development at 925 Mission Street and various parcels;
- The Moscone Center Expansion Project, which will add 300,000 square feet to the Moscone Center convention facility;
- 706 Mission Street, which will consist of a mixed-use residential building containing exhibit space for the Mexican Museum adjacent to Yerba Buena Gardens and Center for the Arts;
- The Sixth Street Improvement Project, which would reduce two existing travel lanes on Sixth Street in each direction to a single lane in each direction, along with right-of-way and sidewalk improvements between Market and Bryant Streets;

Overview

- Better Market Street, which would include the redesign and various transportation and streetscape improvements to a 2.2-mile segment of Market Street between Octavia Boulevard and The Embarcadero;
- The University of California San Francisco's Long Range Development Plan (LRDP), which guides growth and directs the planning of 2.4 million gross square feet of UCSF's research and development, institutional, housing, and recreational uses over a 20-year period;
- The San Francisco Giant's Mission Rock/Seawall Lot 337 project on a parcel bounded by Third Street, Terry A. Francois Boulevard, Mission Rock Street, and China Basin Park adjacent to Pier 48, that would be developed to include up to approximately 1.6 million gross square feet of residential uses (1,600 units), up to 1.4 million gross square feet of commercial uses, and about 5.4 acres of open space throughout the parcels;
- The Golden State Warriors received approvals for a multipurpose sports arena and event center including two 11-story office buildings with ground-floor retail areas, a food hall, publicly accessible open spaces, and structured parking on an approximately 11-acre site within the Mission Bay South Redevelopment Plan Area; and

An Institutional Master Plan update for the Academy of Art University (AAU) that would allow AAU to accommodate anticipated enrollment and staff growth and associated increase need of space for institutional uses, dormitories, and indoor recreational uses through the changes of use of existing buildings in 12 study areas throughout downtown San Francisco, SoMa, the Van Ness Avenue corridor, and the Marina District. Five of these study areas overlap with the Plan Area, though no specific locations for the changes of use or construction of new buildings have been identified at this stage in the planning process for these geographic areas.

IV.A Land Use and Land Use Planning

IV.A.1 Introduction

This section describes the existing land uses and *Planning Code* (zoning) controls in the Central SoMa Plan (Plan) area and analyzes potential changes to the Plan Area's land uses that may occur over time if the Plan, its proposed policies and *Planning Code* amendments, street network changes, and open space improvements were adopted and implemented. The Environmental Setting documents the Plan Area's existing land uses, development pattern, and its built environment and infrastructure, which include public streets, alleyways, and open spaces that contribute to the Plan Area's urban character. The Impacts and Mitigation section analyzes whether implementation of the Plan's proposed *Planning Code* amendments, related land use policies, street network changes, and open space improvements would disrupt or physically divide the neighborhood or conflict with the *General Plan* or with other plans, policies or programs adopted for the purpose of mitigating adverse environmental impacts.

IV.A.2 Environmental Setting

Plan Area Boundaries and Location

The Plan Area is located within the heart of the city's South of Market (SoMa) area. Its boundaries extend from Second Street on the east to Sixth Street on the west, from Townsend Street on the south, and along an irregular northern border that generally jogs along Folsom, Howard, and Stevenson Streets to its northernmost point at Stevenson and Mission Streets. As illustrated on Figure II-1, Central SoMa Plan Area Boundaries, in Chapter II, Project Description, the Plan encompasses an area of approximately 230 acres comprising 17 full and partial city blocks and the following intersecting public rights-of-way: Mission, Howard, Folsom, Harrison, Bryant, Brannan, Third, Fourth, and Fifth Streets. The Plan Area also includes a segment of the 1.7-mile alignment of the Central Subway along Fourth Street that when operational in 2019 will provide transit service from Bayshore to Chinatown. Two stations, at Fourth and Brannan Streets and Fourth and Folsom Streets, are within Plan Area boundaries.

The SoMa Street Grid

San Francisco's urban form traces its origins to a survey and map of the village of Yerba Buena drawn by sailor and surveyor Jean-Jacques Vioget in 1839. Vioget based the layout and dimension of city blocks and streets on the *vara*, a Spanish unit of measurement that corresponds to roughly 33 inches. The city's first blocks originated around Portsmouth Square, a product of Vioget's "50-Vara survey," resulting in blocks measuring 150 vara by 100 vara (412 feet six inches by 275 feet), with square corner lots often measuring 50 vara by 50 vara (137 feet six inches on a side). The original streets around Portsmouth Square were of irregular width, though the city eventually settled on a 25 vara standard street width (68 feet nine inches) for most north-of-Market streets. In 1847, the town, now named San Francisco, hired civil engineer and surveyor Jasper

O'Farrell, who laid out Market Street in its characteristic northeast-to-southwest orientation to connect the settlement at Yerba Buena Cove to Mission Dolores.⁶² O'Farrell expanded the street grid to the south of Market Street, including the Plan Area, using a "100 Vara survey," that resulted in blocks measuring 825 feet by 550 feet (300 vara by 200 vara), about four times larger, and oriented at about a 45-degree angle to those to the north of Market Street.

O'Farrell's 100-Vara survey resulted in 30-vara-(82-foot-six-inch-)wide streets running parallel to Market Street, as opposed to the narrower streets north of Market Street. The Plan Area's primary east/west thoroughfares of Mission, Howard, Folsom, Harrison, Bryant, Brannan and Townsend Streets reflect O'Farrell's survey dimensions: each is 82 feet six inches wide. SoMa's 100-Vara survey creates an expansive pattern of large blocks (each roughly 10.5 acres) set between 82-foot-six-inch-wide thoroughfares, in contrast to a more densely aligned pattern of smaller blocks and narrower streets north of Market Street. SoMa's large blocks are interlaced with a network of smaller back streets and alleys that include Jessie, Tehama, Minna, Natoma, Clementina, Shipley, Perry, Welsh, Freelon, and Bluxome Streets in the east/west direction, along with several other, shorter mid-block streets and alleys that run north/south.

SoMa's alleys reduce the scale of large blocks by providing access into their interiors where interior spaces handle back-of-house services off of main thoroughfares. SoMa's alley network has also created a unique pattern of residential enclaves, where historically residential buildings fronted on alleys in close proximity to industrial uses (e.g., factories, foundries, warehouses, etc.) which face main thoroughfares. SoMa's varied block and lot pattern accommodates a variety of building types and spatial configurations on any of its given blocks and contributes to the fine grained mix of land uses in the neighborhood today.

The topography of the Plan Area is relatively flat. Much of the southwestern and central portion of the Plan Area has an elevation of zero feet, SFD.⁶³ Moving northward, elevation increases to between about 20 and 35 feet, SFD, toward Market Street. The high point of the Plan Area is the western slope of Rincon Hill; the elevation here is 50 feet, SFD, at the intersection of Second and Harrison Streets.

The Plan Area's flat topography and regular grid pattern are, in theory, easily walkable, yet South-of-Market's long blocks, wide streets with high traffic volumes, and the elevated I-80 viaduct with multiple freeway on- and off-ramps dividing the neighborhood may discourage pedestrian travel in much of the Plan Area.

Local and regional rail transit is available to the north of the Plan Area via Muni Metro and the Bay Area Rapid Transit (BART) district's Montgomery and Powell Street stations; the terminus of the Peninsula Joint Powers district's Caltrain station is located at Third and King Street just south of the Plan Area. Beginning in 2019, the Muni Metro Central Subway extension will operate along and beneath Fourth Street. Bus service is provided by SamTrans and Golden Gate Transit north of the Plan Area, and by Muni bus service on various streets within and adjacent to the Plan Area.

⁶² Following San Francisco convention, Market Street and streets parallel to it are considered to run east/west, while the perpendicular numbered streets are considered to run north/south.

⁶³ SFD, or San Francisco City Datum, establishes the City's zero point for surveying purposes at approximately 11.3 feet above the current 1988 North American Vertical Datum. Street elevations on Public Works maps are given in SFD, and this datum is commonly used in mapping and technical reports in the City.

Land Uses and Use Districts

Existing Land Uses

A variety of land uses are located throughout the Plan Area, generally represented in the following categories: retail/entertainment; (non-residential) mixed-use; residential; residential mixed-use; cultural/institutional/educational; visitor; office; medical; production, distribution, and repair (PDR); and open space. The descriptions below present examples of the specific uses that are present within, or in the vicinity of, the Plan Area. Current and projected population and employment figures for the Plan Area are presented in Chapter IV, Environmental Setting, Impacts, and Mitigation Measures.

Retail/Entertainment, Cultural/Educational/Institutional, and Office Uses

A concentration of higher density office, regional-serving retail (such as the Westfield San Francisco Centre and Target) and cultural/institutional uses (e.g., Yerba Buena Center for the Arts, San Francisco Museum of Modern Art, Contemporary Jewish Museum, California Historical Society, Old Mint/San Francisco History Museum, Museum of the African Diaspora, Cartoon Art Museum, Children's Creativity Museum and forthcoming Mexican Museum) are concentrated on large parcels located generally north of Folsom Street, west of Third Street and east of Fifth Street within or immediately bordering the northern portion of the Plan Area.

Office uses in the Plan Area are generally geared to professional trades, secondary education and media services. Co-working facilities located in the Plan Area include the Sandbox Suites (Second and Bryant Streets) that provides work space and meeting facilities for socially focused enterprises. In the area between Second and Fourth Streets and Folsom and Harrison Streets and between Second and Third Streets south of Harrison Street, the Mixed-Use, Office (MUO) use district and height limits of 85 and 130 feet allow for employment-generating uses at a moderate scale, while the Plan's southern area, generally south of the elevated Interstate 80 (I-80) freeway and west of South Park, features lower-scaled development primarily for office, PDR, retail, and entertainment uses, as well as several surface parking lots.

The San Francisco Unified School District's Bessie Carmichael Middle School is located within the Plan Area, on Harrison Street just west of Fourth Street. (The Bessie Carmichael elementary campus is just west of the Plan Area, on Seventh Street.)

Convention and Visitor-Serving Uses

Moscone Convention Center is the largest convention/assembly use in San Francisco, located just north the Plan Area between Third, Fourth, Mission and Folsom Streets. It comprises three main halls: Moscone North and South are underground beneath Yerba Buena Gardens, and a three-level Moscone West exhibition hall across Fourth Street. Moscone Center is currently undergoing expansion. A number of hotels and visitor-serving lodging uses are also in close proximity to Moscone Center.

Residential Use

Residential uses are distributed throughout the Plan Area, although there are concentrations of relatively smaller, older residential buildings in the western part of the Plan Area, as well as surrounding South Park in

the Plan's southeast quadrant. There are also several newer, much larger residential buildings, particularly on Folsom, Brannan, Townsend, and Fifth Streets.

A variety of settlement patterns is discernible in the Plan Area, based on building age and location of lot size. Some of Central SoMa's oldest residential buildings date from the period immediately following the 1906 Earthquake and Fire and are clustered along the Plan Area's western flank, north of Harrison Street between Fifth and Sixth Streets, in enclaves off of the main east/west thoroughfares. The Plan Area's smaller streets and alleys (e.g., primarily Tehama, Clementina, Shipley, and Clara Streets) accommodate two-, three- and four-story wood-frame walk-up apartment buildings often intermixed with garages and light industrial buildings. Residential hotels are another common residential typology in the South of Market and are most common in the northwestern section of the Plan Area, particularly in proximity to Mission and Howard Streets along Sixth Street as well as on corner locations primarily south of Harrison Street.

A large amount of residential development has occurred in and near the Plan Area in recent years. In 2015, for example, just over half of the approximately 3,000 new housing units added in San Francisco were in SoMa⁶⁴. Among the newer, larger Plan Area residential projects are the Mosso (two buildings on Fifth Street between Folsom and Tehama Streets; approximately 360 units); 298 units at The Palms (555 Fourth Street; 2006); 117 units in the development known as Blu, at 631 Folsom Street (2009); 114 units under construction at 923 Folsom Street; and 200 units at 855 Folsom Street (Yerba Buena Lofts; 2001).

Production, Distribution, and Repair (PDR) Uses

Production, Distribution, and Repair (PDR) uses are, generally, light industrial land uses in nature. The Planning Commission, by resolution in 2004, grouped PDR uses into 11 broad categories: Publishing, Audio/Visual, Arts, Fashion, Transport, Food/Event, Interior Design, Construction, Equipment, Motor Vehicles and Other.⁶⁵ The Plan Area includes several clusters of PDR uses, where similar types of businesses located near each other take advantage of factors such as building characteristics, proximity to transportation and/or customer base, and access to a particular labor pool. Locating in proximity to one another also allows like businesses to share information and resources. Auto repair, including both mechanical and body repair, is the predominant PDR business cluster in the Plan. Other groupings include music production (studios and rehearsal space), furniture repair, wholesaling, printing and publication, construction, and a relatively recent (re-)arrival to the area, food and beverage production, notably wine and beer. The Plan Area is also home to the San Francisco Flower Mart, the city's wholesale flower terminal, which is located at Sixth and Brannan Streets. Additional supporting businesses are located proximate to the Flower Mart. While buildings historically built for PDR uses still exist in the Plan Area, many of these buildings are now less occupied by "traditional" PDR businesses and are increasingly occupied by "new" technology users that may include PDR functions.

Parks and Open Spaces

Public open spaces and facilities within and proximate to the Plan Area are limited. These include South Park, located in the southeast portion of the Plan Area, Yerba Buena Gardens, located just north of the Plan Area,

⁶⁴ San Francisco Planning Department, *2015 San Francisco Housing Inventory*, March 2015. Available at: http://default.sfplanning.org/publications_reports/2015_Housing_Inventory_Final_Web.pdf, accessed August 31, 2016.

⁶⁵ Appendix D of Planning Commission Resolution No. 16727, adopted February 12, 2004.

and Victoria Manalo Draves Park and the Gene Friend Recreation Center South Park, both located just west of the Plan Area. South Park is the only Recreation and Park Department property within the Plan Area. The uneven distribution of these community assets leaves portions of the area underserved with open space.

Additional description of the visual character, streetscape pattern, and built environment is included in Section IV.B, Aesthetics.

Parcel Configurations

In addition to the street grid and existing land uses, another key factor in the character of the Plan Area is the myriad of relatively small parcels, particularly in the area west of Fourth Street and south of Folsom Street. While much of the newer development in the Plan Area has occurred on large parcels—either single large lots or combinations of smaller lots—many of the smaller parcels are occupied by older, smaller-scale buildings. The age and size of these buildings limits their utility for certain uses. Many of the smaller, older buildings are occupied by PDR uses that are able to use the smaller spaces, as well as to afford the generally lower rents that these older, less popular buildings command. As shown in **Figure IV.A-1, Existing Land Uses in Plan Area**, PDR uses tend to cluster, in part, on the Plan Area's smaller parcels.

The other predominant land use found on many smaller parcels is residential. Residential uses on the smaller mid-block streets tend to be two- to four-story walkup buildings that are smaller than many of the contemporary multi-family residential buildings in the Plan Area. In recent years, however, there has been a substantial amount of new residential construction on these smaller streets. These newer buildings, which have typically replaced light industrial buildings and parking lots, may occupy larger lots and are generally built to the height limit, meaning that they are typically four and five stories in height. As noted above, newer residential buildings on the larger, principal streets of the Plan Area⁶⁶ tend to be much larger in scale, having been developed on large parcels, sometimes including several consolidated lots.

Existing Planning Code Use Districts

The existing use districts (see Figure II-2 in Chapter II, Project Description) that govern most of the Plan Area are Mixed Use-Residential (MUR; north of Harrison Street only), MUO, Western SoMa Mixed Use-Office (WS-MUO), Service/Light Industrial District (SLI), and Western SoMa Service, Arts, Light Industrial District (WS-SALI).⁶⁷ Portions of two blocks north of Harrison Street are in Western SoMa Mixed Use-General (WS-MUG) use districts, and the Sixth Street frontage north of Folsom Street is in a Neighborhood Commercial-Transit (NCT) use district. Other use districts governing small areas include Residential Enclave

⁶⁶ Mission, Howard, Folsom, Harrison, Bryant, Brannan and Townsend Streets, and the numbered north/south streets.

⁶⁷ Land within the Plan Area currently zoned WS-SALI was primarily zoned SLI prior to adoption of the Western SoMa Plan in April 2013. The SLI and WS-SALI districts are not dissimilar; the primary differences are that the WS-SALI district allows nighttime entertainment use and prohibits all residential and office use (other than in a small Special Use District on the south side of Bryant Street, opposite the Hall of Justice). The SLI district on the other hand prohibits nighttime entertainment, conditionally permits affordable housing and office use in certain historic buildings or certain types of offices, such as those that accommodate design professionals.



SOURCE: San Francisco Planning Department

Case No. 2011.1356E: Central SoMa Plan

Figure IV.A-1
Existing Land Uses in Plan Area

District (RED), Downtown Commercial-Office (C-3-O),⁶⁸ Service/Secondary Office (SSO), South Park District (SPD),⁶⁹ Light Industrial (M-1), and Public (P). The most restrictive of the primary use districts are the SLI district (which does not allow housing, other than one hundred percent affordable housing, group housing, and single-room occupancy dwelling units, and does not allow most office use, other than in landmark buildings or contributory buildings in Historic Districts with Conditional Use authorization), and WS-SALI, which does not permit housing or offices. The SLI and WS-SALI use districts are intended to encourage PDR uses. These use restrictions have contributed to this area's low-scale (one- to two-story), low-density light industrial character.

In addition to the above noted land uses and districts, the South of Market Area Youth and Family Special Use District (SUD) overlays part of the western portion of the Plan Area (see Figure II-2, Existing Plan Area Use Districts), generally bounded by Howard, Fourth, and Harrison Streets, and extending to the west outside of the Plan Area to just beyond Seventh Street. This SUD was adopted as part of the planning for the Eastern Neighborhoods Area Plans and Rezoning project in 2008. It is intended to expand the provision of affordable housing, and to that end allows for dedication of land to the City and County of San Francisco (the City) by a developer, for use as a site for affordable housing, in lieu of the developer paying a fee or providing affordable housing. The SoMa Youth and Family SUD also requires Conditional Use authorization for several uses, including bars and liquor stores, restaurants, religious facilities, various entertainment uses, and parking. The Plan proposes no change to the SoMa Youth and Family Zone SUD.

IV.A.3 Regulatory Setting

See Chapter III, Plans and Policies, for information regarding applicable *General Plan* goals, policies, and objectives; and applicable area plans. See Chapter II, Project Description, for more information regarding current zoning and existing height and bulk classifications in the Plan Area.

IV.A.4 Impacts and Mitigation Measures

Significance Criteria

For purposes of this EIR, implementation of the proposed project would have a significant effect on land use if it would:

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

⁶⁸ The Plan proposes no change to this use district on the parcel occupied by the mid-rise SoMa Square Apartments at Third and Folsom Streets.

⁶⁹ The Plan proposes no change to the SPD district, which surrounds South Park.

Approach to Analysis

Central SoMa Plan

The Plan is a regulatory program and, if adopted, would result in new planning policies and controls for land use to accommodate additional jobs and housing. The Plan itself would not result in direct physical changes to existing land uses. Indirect effects could result as specific development projects allowed under the Plan could replace existing residences and businesses, or increase space for residences or businesses in the Plan Area. Street network changes and open space improvements could result in direct physical effects. The following analysis for land use evaluates the subsequent development anticipated in the Plan Area, as compared to existing conditions.

Regarding the second significance criterion analyzed below, a conflict between a proposed project, including potential *General Plan* amendment(s), and a *General Plan* policy does not necessarily indicate a significant effect on the environment under CEQA. The staff report for the Planning Commission will analyze the Plan's consistency with *General Plan* policies. Additionally, Chapter III, Plans and Policies, provides a thorough description of the plans and policies relevant to the Plan Area. To the extent that development under the Plan, including proposed street network changes and open space improvements, would result in physical environmental impacts that implicate a potential policy inconsistency, those impacts are analyzed in the applicable topic section of this EIR and in the Initial Study (see Appendix B). It is noted that a proposed project's inconsistency with a plan that is applicable to the project does not, in itself, result in an adverse physical effect on the environment. However, such an inconsistency may potentially, at least in some cases, be indicative of an adverse physical effect. The determination of a significant impact—which, by definition, must involve a physical change—is separate from the legal determination of plan consistency.

Potential effects regarding the character of the Plan Area and vicinity are addressed in this EIR only to the degree that such effects relate to physical environmental changes. Such changes are addressed in Section IV.B, Aesthetics, and Section IV.C, Cultural Resources. Other effects of the Plan in relation to land use character are, in general, social or economic effects. Refer to Chapter V, Other CEQA Considerations, for further information about how social and economic effects are addressed by CEQA.

Street Network Changes

The analysis also addresses impacts related to proposed street network changes at a project level, as a sufficient level of detail has been developed to allow for analysis of the potential environmental effects of these changes. Impacts related to or associated with operational changes are considered in the analyses of air quality, noise, and transportation. The proposed street network changes would involve no changes in land use, as the alteration of lane configurations, widening of sidewalks, and addition of bicycle lanes and cycle tracks, transit-only lanes, and mid-block pedestrian crossings would have no bearing on either the permitted uses or the allowable building heights.

Open Space Improvements

The analysis also includes consideration of the potential land use impacts of the proposed open space improvements described in Chapter II, Project Description, both within and outside of the Plan Area.

Impact Evaluation

Physically Divide an Established Community

Impact LU-1: Development under the Plan, and proposed open space improvements and street network changes would not physically divide an established community. (Less than Significant)

The Plan is a regulatory program, not a physical development project or set of projects (with the exception of the street network changes and open space improvements, discussed below), and therefore any impacts related to the physical division of an established community would be secondary effects, related to subsequent development enabled by the Plan.

Development under the Plan

Subsequent development under the Plan would not be expected to divide an established community. Although the elevated I-80 freeway currently divides the Plan Area between Harrison and Bryant Streets, the proposed rezoning within the Plan Area would not create any new physical barriers within the Plan Area. There are no major planned roadways, such as freeways, that would divide the Plan Area or isolate individual neighborhoods within it.

The Plan's proposed amendments to use districts and zoning controls would allow for a diversity of land uses throughout the Plan Area and would not alter the physical layout of the Plan Area such that movement within or across the Plan Area would be obstructed. The Plan's proposed zoning changes, which would allow more flexibility of uses generally, and more office development specifically, may be expected to result in changes in land use patterns as subsequent development projects are implemented pursuant to the Plan. However, these changes would not result in physical barriers to established communities either within or surrounding the Plan Area. On the contrary, implementation of the Plan would result in development within established lot boundaries, in most cases at a scale and density greater than already permitted. Additionally, the Plan's requirements that larger developments include mid-block alleys and publicly-accessible open space could improve connectivity between land uses and neighborhoods within the Plan Area. Proposed open space improvements could function as green connections linking land uses to open spaces and to each other. For the reasons stated above, the Plan would have no impact related to the division of an established community.

Street Network Changes

The proposed street network changes would not involve any changes in land use and would not alter either the permitted uses or the allowable building heights. The proposed street network changes, including improvements to mid-block alleys and mid-block crosswalks, could decrease existing physical barriers by reducing the length of many of the Plan Area block faces and thereby facilitating pedestrian movement through the neighborhood. Furthermore, the substitution of traffic lanes with transit-only lanes and bicycle lanes/cycle tracks, widening of sidewalks, installation of mid-block crosswalks, and reopening of closed crosswalks would remove barriers to circulation within the neighborhood, especially for non-automobile modes, which would be beneficial for neighborhood connectivity. Consequently, no adverse impact related to the division of an established community would result from implementing the street network changes. The impact would be *less than significant*.

Open Space Improvements

Proposed open space improvements, both within and outside of the Plan Area, would tend to link, rather than divide, neighborhoods and communities. New and improved parks and open spaces would also form neighborhood common spaces and would help to foster a sense of place. New parks and open spaces would not create physical barriers that could physically divide a community. The proposed open space improvements would therefore have *no impact* related to the division of an established community.

Because the Plan, proposed street network changes and open space improvements would not physically divide an established community, there would be *no impact*, either directly or indirectly associated with this criterion.

Mitigation: None required.

Conflict with Environmental Plans and Policies

Impact LU-2: Development under the Plan, including proposed open space improvements and street network changes, would conflict with applicable land use plans, policies, or regulations of an agency with jurisdiction over the project (including, but not limited to the General Plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. (Significant and Unavoidable with Mitigation)

San Francisco General Plan

As discussed in detail in Chapter III, Plans and Policies, the proposed Plan would not appear to conflict substantially with the great majority of policies in the *General Plan* that were adopted for the purpose of avoiding or mitigating an environmental effect. This includes such policies contained in the Air Quality Element, Housing Element, Urban Design Element, Recreation and Open Space Element of the *General Plan*. Consistency with General Plan policies is also discussed in the impact discussions in other sections of Chapter IV.

Also as discussed in Chapter III, implementation of the Plan could result in siting sensitive receptors in close proximity to noise sources by changing zoning to allow uses that may generate high noise levels, such as PDR and Places of Entertainment, in proximity to new and existing residences. This may conflict with the *General Plan's* Environmental Protection Element, Policy 11.1: Discourage new uses in areas in which the noise level exceeds the noise compatibility guidelines for that use. However, as recounted in Chapter III and discussed in detail in Section IV.E, Noise and Vibration (Impact NO-1), this EIR concludes that compliance with the *San Francisco Building Code*, *San Francisco Green Building Code*, and Regulation of Noise from Places of Entertainment ordinance would reduce the potential for such conflicts, and that specified mitigation measures identified in this EIR (Mitigation Measure NO-1b, Siting of Noise-Generating Uses) would reduce noise impacts to less than significant. Therefore, with mitigation measures identified in this EIR, no substantial conflict with this *General Plan* policy is expected.

Chapter III and Section IV.E, Noise and Vibration, also state that Plan implementation could result in increased traffic noise levels, which could conflict with the *General Plan's* Environmental Protection Element

Policy 9.6: Discourage changes in streets which will result in greater traffic noise in noise-sensitive areas. This impact relates specifically to the potential for implementation of the Plan to result in increased traffic noise levels on Howard Street under the two-way option for Howard and Folsom Streets. This impact could be substantially reduced by implementation of Mitigation Measure M-NO-1a, Transportation Demand Management (TDM), for new development projects, but it is uncertain the degree to which this mitigation measure could reduce traffic noise to a less-than-significant level. Therefore, this impact is considered significant and unavoidable in Section IV.E and would also result in a *significant and unavoidable* conflict with this General Plan policy related to transportation noise.

San Francisco Planning Code

As explained in Chapter II, Project Description, implementation of the proposed Plan would involve amending the City's *Planning Code*, including the Zoning Maps, to change both the use districts and the height and bulk districts applicable to portions of the Plan Area. Because the *Planning Code* use districts and height and bulk districts are not explicitly "adopted for the purpose of avoiding or mitigating an environmental effect," the Plan's proposed rezoning, in itself, would not result in a significant impact. Physical effects that would result from subsequent development pursuant to the Plan and its proposed rezoning are analyzed as secondary effects throughout this EIR.

Plan Bay Area

As set forth in Chapter II, the Plan includes eight goals, the first of which is, "Increase the capacity for jobs and housing." This goal is driven by the need to meet the growth forecasts identified for San Francisco in *Plan Bay Area*, the Bay Area's Sustainable Communities Strategy, prepared by the Association of Bay Area Governments and Metropolitan Transportation Commission. *Plan Bay Area* estimates that approximately 92,000 additional housing units and 191,000 additional jobs would be added in San Francisco by 2040, which would equate to roughly 15 percent of the total growth anticipated in the region. *Plan Bay Area* sets out a plan to meet most of the region's growth in Priority Development Areas, or PDAs, as identified by local governments. Much of the eastern third of San Francisco is within various PDAs; the Plan Area is contained within the Eastern Neighborhoods PDA,⁷⁰ which also includes Rincon Hill, Western SoMa, the Mission District, Showplace Square and Potrero Hill, and the Central Waterfront. The Plan's proposed increase in development capacity is therefore consistent with *Plan Bay Area's* policies aimed at concentrating future growth in PDAs, the overall purpose of which is to reduce dependence on the automobile and to reduce greenhouse gas emissions.

Other Plans and Policies

As discussed in Chapter III, Plans and Policies, the proposed Plan would not substantially conflict with policies contained in the City's *Climate Action Plan*, *Bicycle Plan*, *Better Streets Plan*, or *Transit First Policy* that were adopted for the purpose of avoiding or mitigating an environmental effect. As discussed in Section IV.F, Air Quality, the proposed Plan would be consistent with the *Bay Area 2010 Clean Air Plan*, which is the regional air quality plan for the San Francisco Bay Area Air Basin.

⁷⁰ A small portion of the Plan Area is also within the Van Ness-Geary PDA.

Other Regulations

Development pursuant to the Plan, as well as the street network changes and open space improvements, would also be required to conform to or comply with specific City, State, and federal code requirements adopted for the purpose of avoiding or mitigating an environmental effect. These include:

- *California Public Resources Code* provisions concerning protection and treatment of Tribal Cultural Resources, Human Remains, and Paleontological Resources, as discussed in Section IV.C, Cultural and Paleontological Resources;
- *Planning Code* provisions concerning off-street parking and loading and, assuming they are enacted by the Board of Supervisors in 2016, concerning transportation demand management, as discussed in Section IV.D, Transportation and Circulation;
- Provisions of the *Administrative Code*, *Building Code*, *Planning Code*, and *Police Code* adopted in 2015 (Ordinance 70-15), including Chapter 116 of the *Administrative Code*, Compatibility and Protection for Residential Uses and Places of Entertainment, to minimize land use conflicts between residential uses and Places of Entertainment and also minimize adverse economic effects on Places of Entertainment, as discussed in Section IV.E, Noise and Vibration;
- The City's Noise Ordinance, which regulates construction noise and new noise sources;
- Bay Area Air Quality Management District regulations and permit requirements for new stationary sources of emissions such as diesel emergency generators and fire pumps and other sources of toxic air contaminants, as discussed in Section IV.F, Air Quality;
- Article 38 of the City's *Health Code*, which requires that new residential construction projects located in areas of poor air quality install enhanced ventilation to protect residents from the respiratory, heart, and other health effects of living in an area with poor air quality;
- Section 295 of the *Planning Code*, which limits shadow on City parks, as discussed in Section IV.H, Shadow;
- The City's Stormwater Management Ordinance and associated Stormwater Management Requirements and Design Guidelines and City *Public Works Code* and *Health Code* provisions concerning recycled and non-potable water use, discharges of dewatered groundwater, and construction site runoff, as well as the City's Floodplain Management requirements specified in the *Administrative Code*, as discussed in Section IV.I, Hydrology;
- Provisions of the *San Francisco Building Code* and *San Francisco Green Building Code*, which incorporate relevant *California Building Code* and *California Green Building Standards Code*, concerning water and energy conservation, as discussed in Section IV.I, Hydrology, and in Initial Study Section D.11, *Utilities and Service Systems*, and Section D.17, Mineral and Energy Resources (Appendix B);
- Various regulations identified in the City's *Strategies to Address Greenhouse Gas Emissions (GHGs) in San Francisco*, as discussed in Section D.8, Greenhouse Gas Emissions, of the Initial Study (Appendix B);
- The federal and California Endangered Species Acts concerning special-status species, the Migratory Bird Treaty Act and *California Fish and Game Code* (Sections 3503, 3503.5) concerning protection of birds, *Planning Code* Section 139 concerning bird-safe building design, and the City's Urban Forestry Ordinance (Chapter 16 of the City *Public Works Code*) concerning protection of landmark, significant, and street trees, as discussed in Section D.13, Biological Resources, of the Initial Study (Appendix B);

- The *San Francisco Building Code*, which incorporates the *California Building Code*, concerning seismic safety, as discussed in Section D.14, Geology and Soils, of the Initial Study (Appendix B); and
- Articles 21, 21A, and 22 of the *City Health Code*, as well as *California Health and Safety Code* and *California Code of Regulations* provisions, concerning handling of hazardous materials and wastes, and *City Building Code* and *Fire Code* provisions concerning fire and life safety, as discussed in Section D.16, Hazards and Hazardous Materials, of the Initial Study (Appendix B).

Conclusion

In light of the foregoing, the Plan, including the proposed street network changes, could conflict with the *General Plan's* Environmental Protection Element policies discussed above. Section IV.E, Noise and Vibration, concludes that noise from noise-generating uses could be reduced to a less-than-significant level with mitigation measures identified in that section, but the impact related to increased traffic noise is significant and may be unavoidable. Therefore, the conflict with *General Plan* Policy 9.6 would also be *significant and unavoidable*.

Mitigation: Implement **Mitigation Measures NO-1a, Transportation Demand Management**, and **Mitigation Measure NO-1b, Siting of Noise-Generating Uses**, for new development projects.

Significance after Mitigation: Implementation of Mitigation Measure M-NO-1b would reduce noise from noise generating uses to less-than-significant levels. However, while implementation of Mitigation Measure NO-1a would reduce traffic noise on Howard Street under the two-way option for Howard and Folsom Streets, it may not be sufficient to reduce Impact NO-1 to less than significant. Therefore, the potential for a significant conflict with the *General Plan* policy related to transportation noise also remains *significant and unavoidable*.

IV.A.5 Cumulative Impacts

The Plan Area and neighborhoods citywide serve as the geographical context for cumulative impact analysis for land use. In addition to the growth and land use changes associated with development pursuant to the Plan, other development unrelated to the Plan could occur throughout the Plan Area and the surrounding vicinity. As noted in Chapter II, Project Description, *Plan Bay Area*, the Bay Area's Sustainable Communities Strategy, identifies the city's growth needs and projects approximately 92,000 additional housing units and 191,000 additional jobs for San Francisco by 2040, compared to existing conditions, and represents roughly 15 percent of the region's total growth.⁷¹ These figures also represent a 25 percent increase in the number of housing units and a 34 percent increase in employment within San Francisco as compared to existing conditions. The Association of Bay Area Governments and the Metropolitan Transportation Commission, joint preparers of *Plan Bay Area*, expect this growth to be planned largely in high-density, transit-served Priority Development Areas, or PDAs, such as the Plan Area.

⁷¹ *Plan Bay Area* was necessitated by the adoption of Senate Bill 375, which required regions to prepare a Sustainable Communities Strategy (or Alternative Planning Strategy) to reduce GHGs by linking growth to transit, resulted in higher jobs and housing growth projections.

The cumulative scenario for land use includes ongoing land use controls of the adjacent portions of the East and Western SoMa Plans not modified by the proposed Plan, Transit Center District Plan, and Rincon Hill Plan, the approved Moscone Center Expansion Project, the approved 706 Mission Street project (under construction), the approved 5M Project, other recently approved and proposed projects within the Plan Area, such as 725 Harrison Street, 598 Brannan Street, and other cumulative projects which are described in Chapter IV, Overview.

Impact C-LU-1: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would contribute considerably to a significant cumulative land use impact. (Significant and Unavoidable with Mitigation)

In general, the Plan, and particularly the proposed street network changes and open space improvements, would improve linkages within the Plan Area and serve to enhance the physical connection between and through various parts of the Plan Area. The open space improvements would, as well, help foster a sense of neighborhood cohesion. The adjacent area plans would make comparable public realm improvements contributing to improved connectivity within and between neighborhoods. None of the individual projects in the Plan Area noted above is expected to preclude or interfere with proposed public realm improvements, and many would contribute positively to pedestrian connections, new infrastructure, and/or include open space enhancements. Therefore, the Plan would not combine with these projects and plans such that an existing community would be divided. Other large proposed projects outside of and distant from the Plan Area, such as the Mission Rock (Seawall Lot 337/Pier 48) project and buildout of the Mission Bay area, including the approved Golden State Warriors event center, and University of California, San Francisco, *Long-Range Development Plan*, would likewise not combine with the proposed Plan to result in significant cumulative impacts related to dividing established communities.

As discussed under **Impact LU-2**, with mitigation, the Plan could result in a significant unavoidable impact with respect to increased traffic noise, which would conflict with a General Plan policy adopted for the purpose of mitigating or avoiding an environmental effect. Cumulative traffic noise levels under 2040 conditions that take into account cumulative traffic levels were evaluated, as described in Section IV.E, Noise and Vibration. As described in that section, the Plan, including both the one-way and two-way operation of Folsom and Howard Streets would make a considerable contribution to cumulative traffic noise levels and no additional mitigation measures, beyond **M-NO-1a, Transportation Demand Management (TDM)**, for new development projects, has been identified to reduce this impact to less than significant. Therefore, the project's contribution to cumulative traffic noise impacts would remain *significant and unavoidable*, as would the potential for Plan to conflict with the *General Plan* policy related to transportation noise.

IV.B Aesthetics

IV.B.1 Introduction

This section describes existing visual conditions in the Central SoMa Plan (the Plan Area) and analyzes the potential for the Plan to affect those conditions. This section focuses primarily on the visual character of the Plan Area, views of the Plan Area from public vantage points throughout the city, and light and glare issues.

Computer-generated visual massing studies presented as part of the analysis illustrate existing and potential conditions within select view corridors from representative public vantage points. The locations of the massing studies were selected in consultation with city staff. Digitized photographs and computer modeling techniques were utilized to prepare the massing diagrams. The images show “wire frame” illustrations, which are based on height and bulk districts proposed by the Plan. The images do not show architectural detail or implementation of street network changes, as specific architectural plans for subsequent projects are not part of this review.

Photographs are included in this section to supplement the description of publicly-accessible views and analysis of visual character. The location and direction of the illustrative views are indicated on **Figure IV.B-1, Viewpoint Location Map**.

IV.B.2 Environmental Setting

Visual Character

The visual character of a city or a part of a city, such as the Plan Area, is comprised of a number of physical elements that in combination form a city’s image. This EIR uses the terms *paths*, *edges*, *districts*, *nodes*, and *landmarks*⁷² to describe the physical features in the Plan area and vicinity’s visual setting. *Paths* are routes, streets, sidewalks, and other channels through which people move about the Plan Area. *i* are boundaries and breaks in continuity, such as walls, building frontages and waterfronts. *Districts* are relatively large sections of the city with a distinctive identity or character. *Nodes* are strategic intersections, loci or focal points for orientation, like squares, plazas or even transit stations. *Landmarks* are external points of orientation, which identify an area within the broader landscape. *Legibility* refers to the degree to which these physical elements are visible and definable within the landscape, and is one factor in determining a places’ visual character.

The aesthetic setting of the Plan Area is varied. It reflects the visual characteristics of its natural and built elements, including topography, street grid, buildings (individually and collectively), parks and public open spaces, and major transportation infrastructure. The roughly 230-acre Plan Area occupies the central portion of the City’s South of Market area and borders the visually distinct Financial District and Downtown areas to the north, the Transit Center District and Rincon Hill areas to the east, China Basin and Mission Bay to the south, and the Western South of Market (SoMa) neighborhood to the west.

⁷² Adapted from Kevin Lynch, *The Image of the City* (Cambridge, MA: MIT Press, 1960).



Topography

The Plan Area's topography slopes gradually northward from an elevation of 0 feet SFD⁷³ in the south to about 25 feet, SFD along Howard Street near the Plan Area's northern boundary. The high point of the Plan Area reaches 50 feet SFD on the western slope of Rincon Hill at the intersection of Second and Harrison Streets, but the topography of much of the South of Market Area, including the Plan Area within its center, is nearly flat.

Street Grid and Block Pattern

SoMa streets are the primary public pathways that facilitate access to and through SoMa and establish the Plan Area's scale. As described in Section IV.A, Land Use and Land Use Planning, SoMa's block pattern, which includes the Plan area, is expressed by a continuous grid of 82.6-foot-wide streets. North/south "numbered" streets are spaced 825 feet apart (between Second and Fourth Streets in the Plan Area), while "named" east/west streets (between Mission and Townsend Streets) are spaced 550 feet apart.⁷⁴ The land area between these streets form large "SoMa blocks" of approximately 10.5 acres each that are in many cases subdivided into smaller sub-blocks, accessible from local streets and mid-block alleys. Many local streets (e.g., Holland Ct, Gallagher, Lapu Lapu, Falmouth, and Merlin Streets) terminate in the interior of these large blocks.

The character of the area's public rights-of-way is defined by the automobile and its related uses. The area's streets are wider than those north of Market Street, many are one-way and convey traffic in four and five lanes. Curb-side parking is located on both sides of SoMa streets (see **Figure IV.B-2, View Corridors: Major Streets**, for representative views of major streets).

From the pedestrian perspective, visually, the roadbeds (visual relief) are the open areas between large blocks. Collectively, streets represent the largest amount of public open space in the area. The character of these open areas is dynamic because of the many lanes that accommodate cars and trucks in motion. The streets' "edges" are the areas dedicated to pedestrian use, and are narrow, generally between 12-15 feet, and in some cases none existent. The edges also function as public spaces that are the transitional zones to private property. In general, sidewalks meet the *Better Streets Plan* recommended 15-foot width, such as on Fourth Street between Mission and Folsom Street, on New Montgomery, and along portions of Mission and Howard Streets. Sidewalks on Howard Street and some blocks of Fourth, Folsom, and Townsend Streets meet the *Better Streets Plan* minimum 12-foot width. However, as shown in Figure II-8, Sidewalk Conditions & Proposed Pedestrian Crosswalks, the other sidewalks on major streets within the Plan Area do not meet the minimum width, and can be as narrow as 8 feet, thereby creating a tighter urban fabric with less visual relief available on wider sidewalks from the pedestrian perspective. There are more variations in the total width and the sidewalk width of local streets, but most have a 35-foot right-of-way, and six-foot sidewalks are common (see **Figure IV.B-3, View Corridors: Minor Streets/Alleys**, for representative views of local streets). Thirty-five-foot-wide streets typically have one travel lane and one curbside parking lane in a 23-foot-wide roadbed. These local streets provide the least amount of open area and visual relief from the urban street wall due to the narrowness of the street and sidewalk. Some minor street sidewalks are missing or do not meet the 6-foot minimum width recommended by the *Better Streets Plan*.

⁷³ SFD, or San Francisco City Datum, establishes the City's zero point for surveying purposes at approximately eight feet above mean sea level.

⁷⁴ Following San Francisco convention, Mission Street and streets parallel to it are considered to run east/west, while numbered streets parallel to Mission Street are considered to run north/south.



1 - View west from Brannan and Third Streets



2 - View east from Bryant and Third Streets



3 - View north from Fifth and Townsend Streets



4 - View west of the south side of Howard Street from Fourth Street

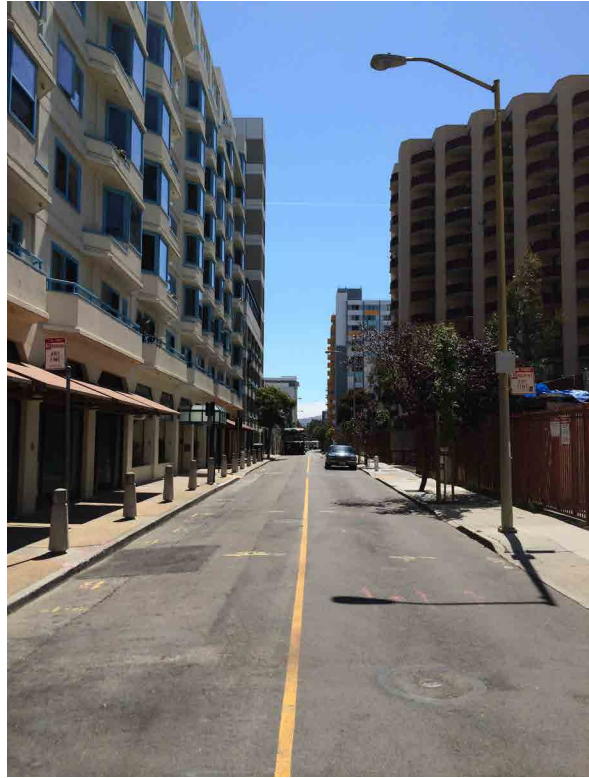
SOURCE: ESA

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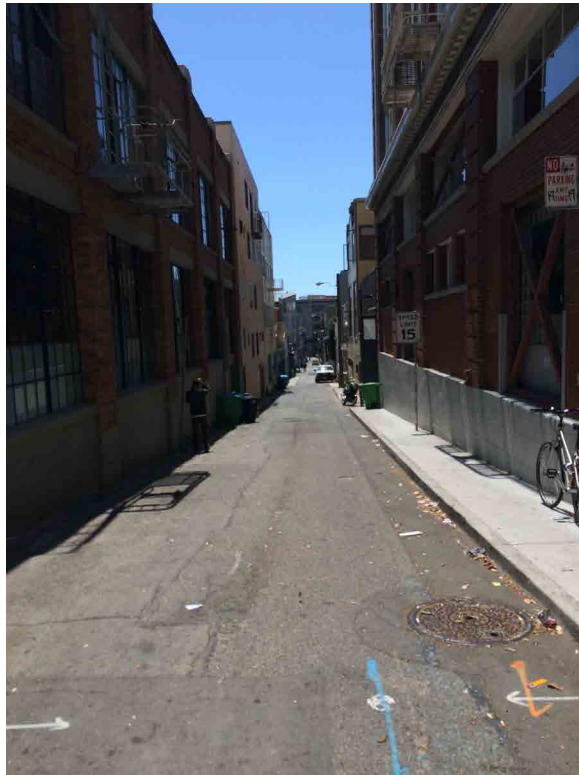
Figure IV.B-2
View Corridors: Major Streets



5. View east from Clara and Sixth Streets



6. View west from Clementina and Fourth Streets



7. View west from Taber Alley and Second Street

Open Spaces

Public open spaces contribute to a neighborhood's identity, serve as visual focal points, and provide visual relief to densely developed built environments. Within the Plan Area public open space is limited. The *San Francisco General Plan (General Plan)* identifies the South of Market as an area with the highest priority for acquisition of new parks and open space areas. The Plan Area's two existing open spaces include a community garden and small neighborhood park. Alice Street Community Gardens is a roughly third-of-an-acre garden located in the middle of the block off of Lapu Lapu Street. Office and residential buildings flank the garden on its north, south, and east edges to create a vegetated central courtyard. South Park is an oval-shaped neighborhood park located in the interior of the block bounded by Bryant, Second, Brannan, and Third Streets. The park is ringed by moderately-scaled residential and commercial buildings, accessible via several narrow streets that create an enclosed intimate setting that contrasts with building frontages exposed to SoMa's wide streets that are typical of the Plan Area.

Outside of the Plan Area, Yerba Buena Gardens and Children's Garden include a lawn, fountain, and public walkways shaded by mature trees. On its southern block, the Children's Garden includes a play area and amphitheater. Other open spaces north of the freeway are pedestrian passages, such as Westin Plaza (which connects Jessie Square to Third Street) and Yerba Buena Lane (which connects Market Street to Mission Street).

The visual characteristics of these spaces are illustrated on **Figure IV.B-4, Parks and Publicly-Accessible Open Spaces**.

Building Uses and Built Form

The type and distribution of land uses and building types within the Plan Area contribute to its existing visual character. Given SoMa's historical development with light industrial uses predominant on the major streets, and residential uses limited to mid-block alleys, the Plan Area and vicinity contains a wide range of land uses often located side-by-side or even in the same building, with no one land use predominating. This includes a substantial number of housing units, including a number of new, larger residential buildings, along with offices, industrial spaces, retail spaces, and cultural and social institutions. The result of the relatively even distribution of light industrial and mixed-use buildings on major streets, combined with the predominantly residential buildings found on local streets, creates a visual character in the Plan Area defined by wide streets with more visual relief from the street wall, juxtaposed with more narrow streets with less open space, but more human in scale, which is appropriate for their residential function. A representative range of building types, height and bulk, and facades within the Plan Area and vicinity is shown in **Figure IV.B-5 through Figure IV.B-8**.

A variety of building styles and ages are visually represented in Plan Area streetscapes. With limited exception, many buildings were constructed in the period immediately following the 1906 earthquake and fire when SoMa's reconstruction solidified it as a mixed-use industrial neighborhood. Other significant periods of construction include redevelopment beginning in the 1960s and contemporary buildings built within the past 15 years. Building facades comprise a range of materials consistent with the range of building types and uses in the Plan Area. Several buildings have glass and steel curtain walls, resulting in transparent and/or reflective surfaces. Other buildings have concrete, masonry, or wooden facades.



8. View of the east side of South Park



9. View of the Yerba Buena Children's Garden



10. View of Yerba Buena Gardens

SOURCE: ESA

Case No. 2011.1356E: Central SoMa Plan

Figure IV.B-4
Parks and Publicly-Accessible Open Spaces



11. View of the northeast corner at Fifth and Howard Streets



12. View of the southwest corner at Folsom and Second Streets



13. View north from Fourth and Howard Streets



14. View west of the north side of Harrison Street between Fifth and Sixth Streets



15. View west from Howard and Third Streets



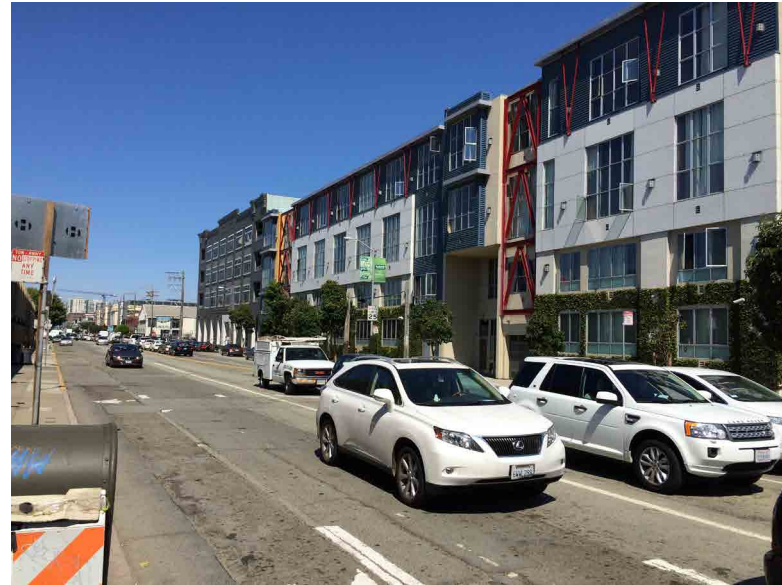
16. View west of the south side of Howard Street between Fifth and Sixth Streets



17. View north of the west side of Harrison Street from Third Street



18. View east of the north side of Bluxome Street from Sixth Street



19. View east of the south side of Brannan Street from Sixth Street



20. View south of the east side of Fourth Street from Brannan Street



21. View south of the east side of Fourth Street from Bluxome Street

SOURCE: ESA

Case No. 2011.1356E: Central SoMa Plan

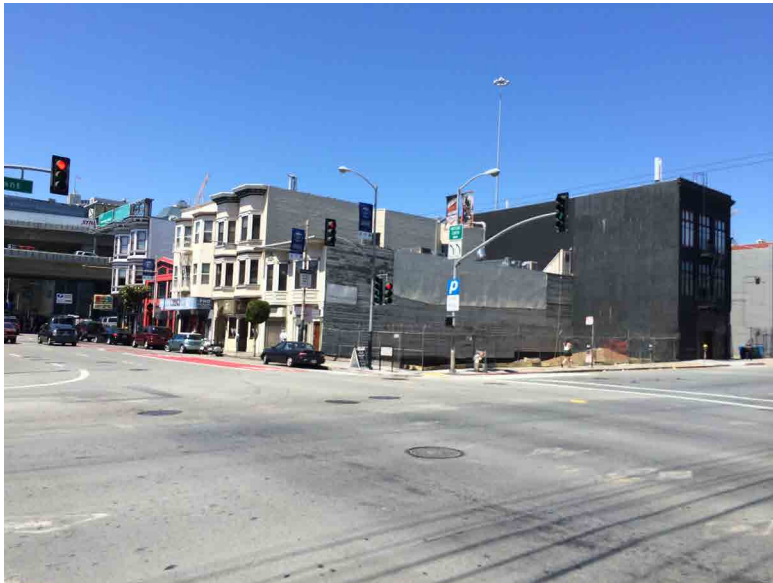
Figure IV.B-7
South of Freeway Built Character



22. View of the southwest corner of Bryant and Fourth Streets



23. View north of the east side of Third Street from South Park Street



24. View north of the east side of Third Street from Bryant Street



25. View north of the east side Fifth Street from Townsend Street

SOURCE: ESA

Case No. 2011.1356E: Central SoMa Plan

Figure IV.B-8
South of Freeway Built Character

The northern portion of the Plan Area and its vicinity generally contains low- to mid-rise residential buildings, including a substantial number of senior and affordable housing developments that are clustered around Third and Fourth Streets.⁷⁵ Toward Mission Street, north of the Plan area, regionally important museums and cultural facilities create a visual transition to the taller buildings in the Downtown.

High-rise towers are clustered in various parts of the Plan Area and its surroundings. Those to the north of Howard Street just east of Fourth Street are visually subordinate in height and exhibit a distinct character from those in Downtown. Zoning in the Downtown core and Transit Center District permit the tallest buildings in the city, where the Transit tower will reach a height of up to 1,000 feet. Recently adopted height limits in the Transit Center District area step down from 1,000 feet to 700 and 550 feet, which is the maximum height permitted in the Financial District. Downtown buildings (some of which are taller than 20 stories) create a visual backdrop to the more mid-rise-scaled towers in the South of Market and the Plan Area, where maximum permitted heights are predominantly 85 feet, considerably shorter than Downtown's larger office towers in the background. An exception is the Intercontinental Hotel at the northeast corner of Fifth and Howard Streets.

The portion of the Plan Area south of the I-80 freeway contains more fine-grained development featuring primarily office, industrial, retail, and entertainment uses. This area is dominated by light industrial zoning, which does not allow new housing, except deed-restricted affordable housing, or office uses, except in historic buildings. These use restrictions have effectively preserved the low-scale and low-density character of this area, with buildings generally ranging between 50 and 85 feet tall. Additionally, maximum building heights are four to eight stories, which is lower than the portion of the Plan Area north of Harrison Street.

The Plan Area and its vicinity lack a high degree of visual definition or coherence beyond that of a mid-rise neighborhood. Therefore, the existing visual character of the Plan Area and its vicinity is mostly defined by its location and prevailing urban form, the geometry and scale of its street grid and surrounding transportation infrastructure, and its variety of building types.

The visual character of the area just two blocks north of the Plan Area is dominated by large, relatively shorter structures on large lots. Yerba Buena Gardens, the Metreon, and the Moscone Convention Center span the two blocks bounded by Mission, Fourth, Folsom, and Third Streets, with a mix of low- and mid-rise commercial, commercial support, and institutional buildings surrounding public open spaces. The convention center, which is primarily underground, has low-rise facades that stretch along the frontages of Howard and Folsom Streets. On the southern block, frontages are set back along Third and Fourth Streets, where there is below-grade loading dock access. These two large blocks create a visual break from the high-rise buildings to the north and northeast.⁷⁶

To the west, at the northwest corner of Fourth Street at Howard Street, is the convention center's "Moscone West," which is a mid-rise exhibition hall. Adjacent to the Convention Center, along the length of Mission Street between Fourth Street and Fifth Street, is the Fifth and Mission parking garage, which comprises eight floors of parking.

⁷⁵ Low-rise buildings generally range from one to eight stories in height; mid-rise buildings generally range from nine to 15 stories in height; and high-rise buildings generally range from 16 stories in height and up.

⁷⁶ Expansion of Moscone Center was approved by the Planning Commission in 2014 (Case No. 2013.0154E) and will result in an increase in the height of both Moscone North and, especially, Moscone South, which will be approximately 95 feet tall.

A swath of land ringing this area north of the freeway, but within the Plan Area, is occupied by a number of eight- to 12-story housing developments, including several affordable housing buildings, with ground-floor retail. Taller buildings here are between 85 and 130 feet in height, and are interspersed among mid- and low-rise buildings.

Freeways

The elevated I-80 freeway runs east/west through the Plan Area between approximately 30 and 50 feet in the air, crossing over all major north/south streets between Harrison and Bryant Streets,. The freeway creates a visual separation that divides the Plan Area, and visually obstructs street level views within the Plan Area, as well as through-views in the north-south direction. Low-rise, relatively lower-activity buildings adjacent to the freeway keep sidewalk activity relatively light, as well as magnify the freeway's prominence when observed in mid-range views. Two entrance ramps and two exit ramps dominate the block bounded by Harrison, Bryant, Fourth, and Fifth Streets. These ramps connect to city streets diagonally at the four corners, creating five-way intersections where the most prominent visual feature is the broad expanse of asphalt. In addition, I-280 terminates at the intersection of Sixth Street and Brannan Streets, at the southwest corner of the Plan Area. (The King Street terminus of I-280 is outside the Plan area.) These visual characteristics are shown in **Figure IV.B-9, Freeways and Ramps**.

Visual Resources and Scenic Views

Visual Resources

The Plan Area lacks substantial topographic relief and does not possess individual natural landscape features with high scenic resource value. With limited exceptions, the Plan Area likewise does not contain built features with high scenic resource value, nor does it contain a visually remarkable diversity of vegetation.

The Plan Area contains a number of notable buildings although, as a whole, it does not possess what would generally be termed "high scenic quality." While many buildings are comparable to one another in terms of massing, façade materials, and architectural details, several contain distinct visual attributes either at the street level, or which can be perceived in short- or mid-range views.⁷⁷

Other notable buildings in the Plan Area and its vicinity include the Old Mint (88 Fifth Street), with its classical revival architecture, and the gothic revival-turned-Art Deco San Francisco Chronicle building across Mission Street. North of the Plan area is the New-Montgomery-Mission-Second Street Conservation District, which is characterized by three- to 11-story brick or concrete commercial loft buildings with differentiated upper floors, some with ornamental cornices. In addition, the Market Street Theater and Loft District runs along the south side of Market Street between Fifth and Sixth Streets. See **Figure IV.B-10, Historic Districts**, for examples of buildings within historic districts in the Plan Area and its vicinity.

⁷⁷ In general, short-range views are those within one-quarter of a mile, mid-range views extend from one-half of a mile to one mile, and long-range views extend beyond one mile.



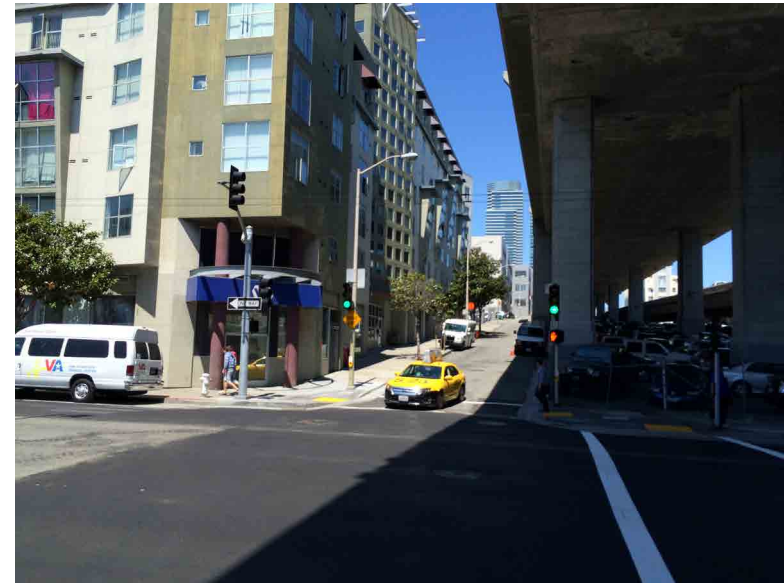
26. View southeast from Fifth and Harrison Streets



27. View northwest from Fourth and Bryant Streets



28. View south of Morris Street from Harrison Street



29. View east of Perry Street from Third Street

SOURCE: ESA

Case No. 2011.1356E: Central SoMa Plan

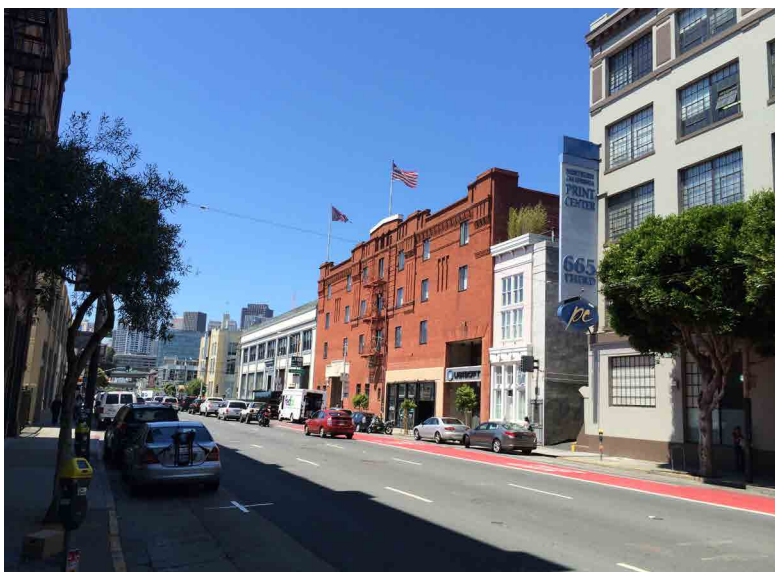
Figure IV.B-9
Freeways and Ramps



30. View of buildings on the south side of Market Street between Fifth and Sixth Streets located in the Market Street Theater and Loft Historic District



31. View of buildings on the west side of Second Street between Mission and Minna Streets located in the New Montgomery-Mission-Second Street Conservation District



32. View of buildings on the east side of Third Street between Brannan and Townsend Streets located in the South End Historic District



33. View of buildings on the north side of Townsend Street between Clarence Place and Stanford Streets located in the South End Historic District

SOURCE: ESA

Case No. 2011.1356E: Central SoMa Plan

Figure IV.B-10
Historic Districts

In the Plan Area, south of I-80, there are fewer distinctive buildings and open spaces. Buildings are generally two to three stories tall, exhibit a mix of architectural styles, housing residential and ground-floor commercial uses. The South End Historic District extends into the Plan Area along Second Street, Brannan Street, and Townsend Street, and includes several historic brick warehouse buildings that have been renovated, expanded, and adapted for contemporary uses. The buildings are primarily warehouses characterized by solid walls of brick and reinforced concrete. (Please see Section IV.D, Cultural and Paleontological Resources, for a discussion of the existing historic buildings and districts in the Plan Area and its vicinity.) The Plan Area, particularly in the southern portion, contains several underutilized parcels, as shown in **Figure IV.B-11, Parking Lots and Underutilized Spaces**.

The Urban Design Element of the *General Plan* classifies some streets in terms of their importance as visual resources as well as quality of street views that are available from vantage points along those streets. In the project vicinity, Market Street, which is north of the Plan Area, is characterized as a street containing a “Street View of Important Building and Street That Defines City Form.” Some blocks of Mission Street and Howard Street, as well as interior minor streets within those blocks, are designated as having street views of important buildings, including Yerba Buena Gardens and the San Francisco Mint building. Market Street is identified as having a street view of an important building: the San Francisco Ferry Building on The Embarcadero. South Park Street and Jack London Alley are identified as “Streets That Extend the Effect of Public Open Space.” No other streets within the Plan Area or its vicinity are characterized as streets important to urban design and views.

Views

The representative views described in this section are included on the Visual Simulations Location Map (**Figure IV.B-12, Visual Simulations Location Map**). This discussion of publicly-accessible views of and through the Plan Area is supplemented by photographs of existing conditions that are presented in **Figure IV.B-13** through **Figure IV.B-23**, in the analysis of project impacts. View corridors presented in the discussion below are described by physical elements, such as buildings, that guide lines of sight and control view directions available to pedestrians and motorists. View corridors include the total field of vision visible from a specific vantage point. Public view corridors are areas in which views are available from publicly-accessible viewpoints, such as from city streets, bridges, freeways, parks, and other public spaces.

Most major streets in the Plan Area and its vicinity are characterized by the *General Plan* as having an “average” quality of views, with views along Mission, Howard, and Folsom Streets between Second and Third Streets characterized as having “good” quality of street views. I-80 is classified as having an important street view for orientation. No other street segments are specifically characterized by the *General Plan* in terms of view quality along those streets.

Views of the Plan Area from Surrounding Vantage Points

The Plan Area is visible from city hillsides as well as elevated freeway segments. As illustrated in the long-range visual simulations in **Figure IV.B-13** through **Figure IV.B-19**, which generally consist of views greater than one mile, the Plan Area is visible from higher elevations in the city. From these vantage points, the Plan area appears urbanized and generally built-out with a mix of predominantly low- and mid-rise buildings in the southern portion and mid- and high-rise structures in the northern portion. From the Potrero Hill location



34. View east from Fourth and Freelon Streets



35. View west from Second Street and Dow Place



36. View of the northeast corner of Sixth and Harrison Streets

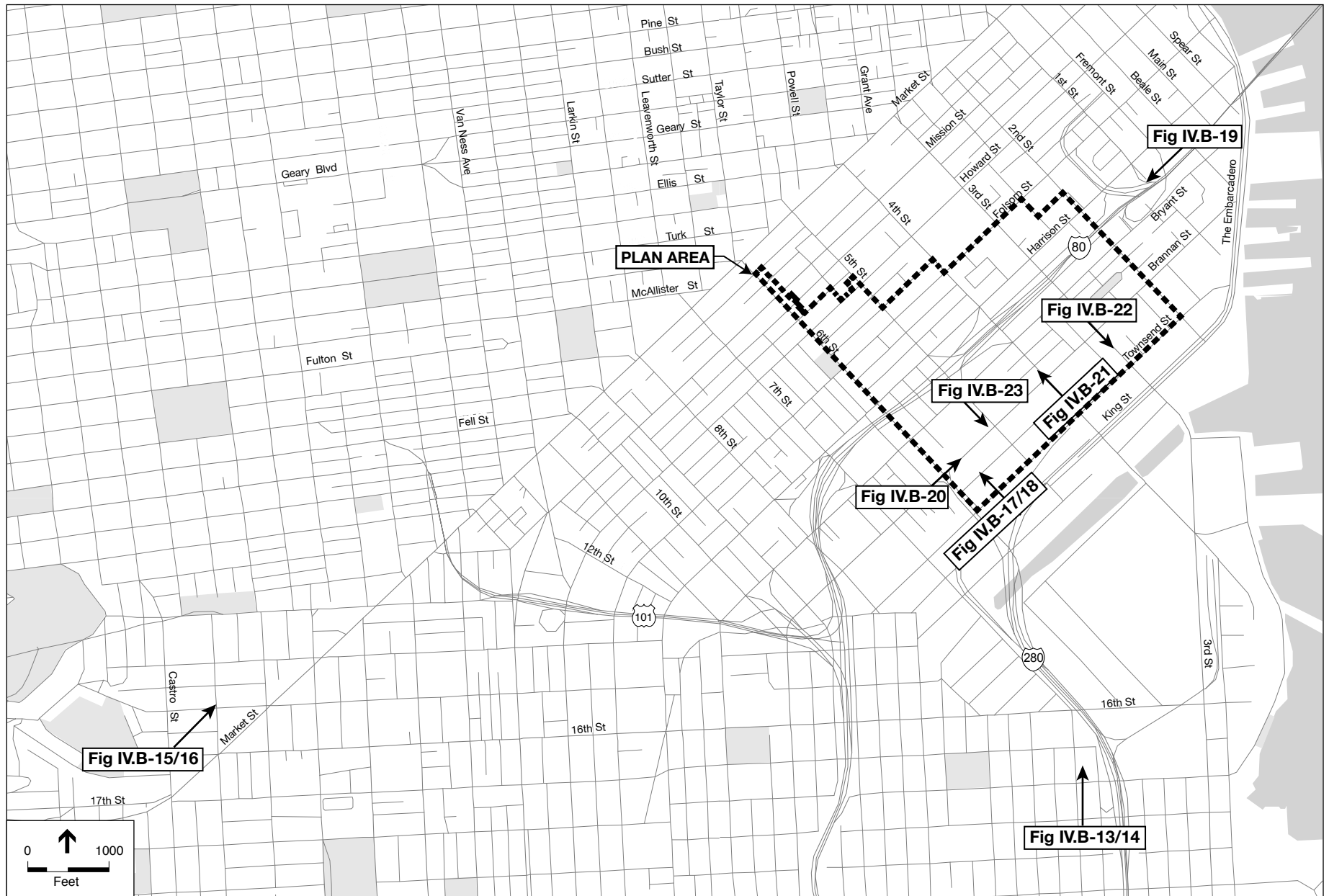


37. View of the northeast corner of Third and Harrison Streets

SOURCE: ESA

Case No. 2011.1356E: Central SoMa Plan

Figure IV.B-11
Parking Lots and Underutilized Spaces



SOURCE: ESA

(**Figure IV.B-13, Long-Range Visual Simulation: Texas Street and 19th Street: Existing Conditions Plus Plan**, and **Figure IV.B-14, Long-Range Visual Simulation: Texas Street and 19th Street: Existing Conditions Plus Plan and Cumulative**), the Plan Area is distinguishable between the I-280 elevated freeway and the high-rises Downtown, primarily behind the Plan Area. The view from Corona Heights (**Figure IV.B-15, Long-Range Visual Simulation: Corona Heights Park: Existing Conditions Plus Plan**, and **Figure IV.B-16, Long-Range Visual Simulation: Corona Heights Park: Existing Conditions Plus Plan and Cumulative**) is more distant. In this view, the northern portion of Central SoMa is obscured by high-rise buildings in areas along Market Street, Van Ness Avenue, Ninth Street, Polk Street, Fell Street, and Hayes Street. The Plan Area's mid- and low-rise buildings are visible farther to the south, where they blend in with the surrounding development. This lower built form extends south of the Plan Area and across Mission Bay, although there, the larger scale of buildings is evident.

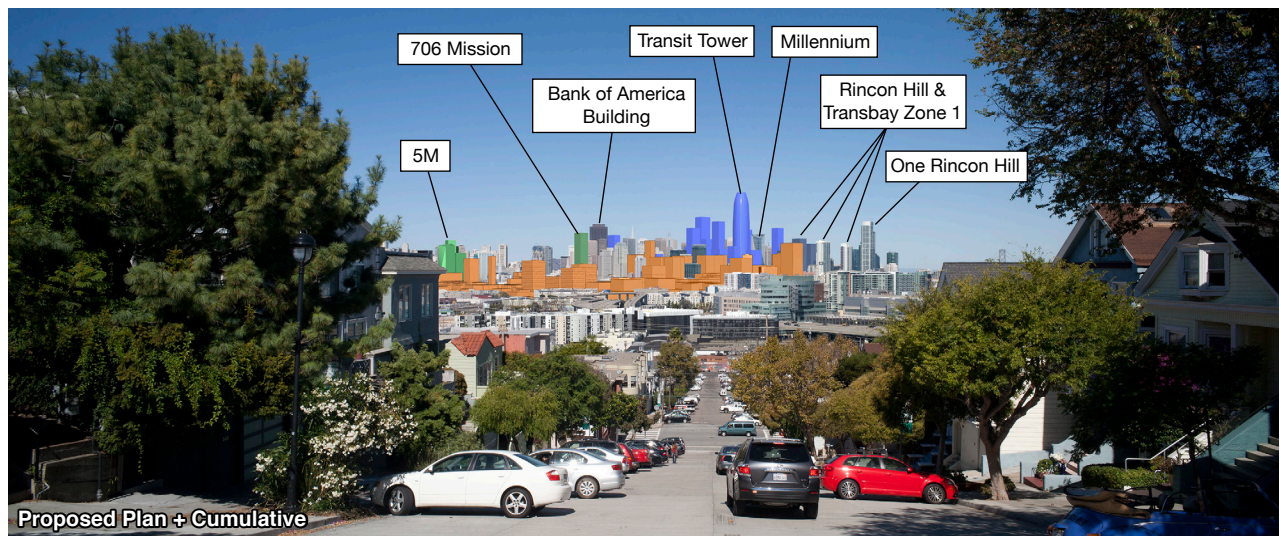
In mid-range views, consisting of views generally within a half-mile of the Plan Area, the Plan buildings are more discernible from the surrounding development. On the Sixth Street exit from I-280 over Mission Creek (**Figure IV.B-17, Mid-Range Visual Simulation: Interstate 280 Sixth Street Off Ramp: Existing Conditions Plus Plan**, and **Figure IV.B-18, Mid-Range Visual Simulation: Interstate 280 Sixth Street Off-Ramp: Existing Conditions Plus Plan and Cumulative**), low-rise buildings are visible in the south and the high-rises of Rincon Hill and Downtown are visible to the north. To a viewer travelling west on I-80 from the Bay Bridge (**Figure IV.B-19, Mid-Range Visual Simulation: Interstate 80 Westbound: Existing Conditions Plus Plan**), most of the Plan Area's built form is not visible as the elevated freeway obscures most of the area; only fleeting views of a few mid-rise buildings that are tall enough to be seen from the roadway deck is possible. Billboards are present on both sides of the freeway. To the west in the long-range view, the natural and built areas of the Diamond Heights and Twin Peaks neighborhoods are visible. Views are also partially obscured by towers in the Rincon Hill neighborhood.

Views from within the Plan Area

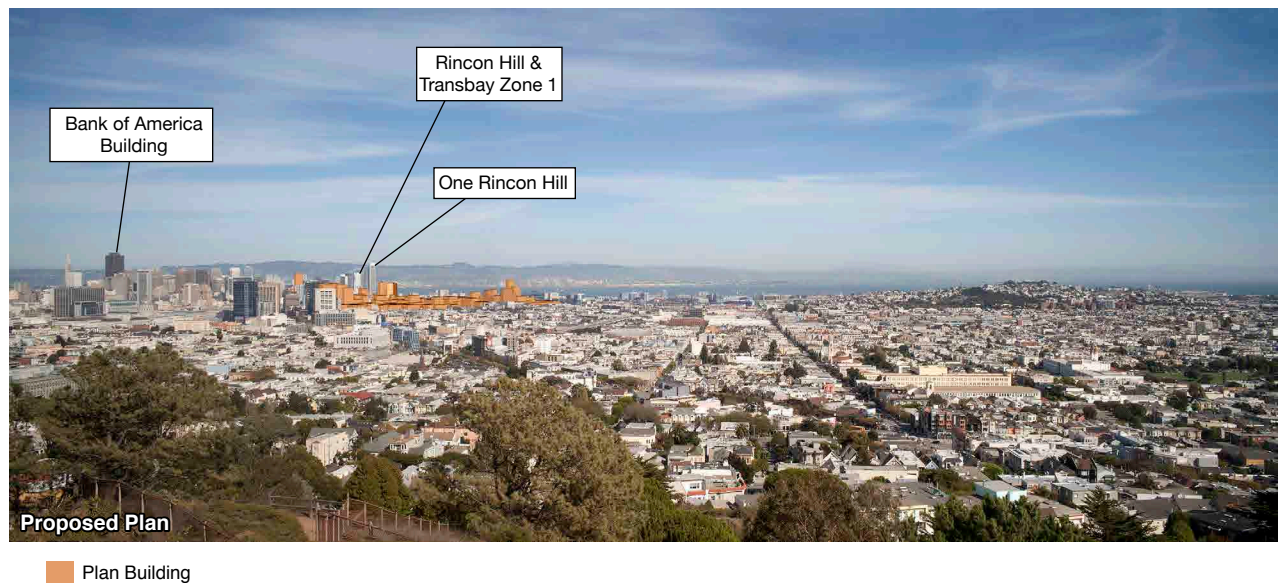
As stated above, the Plan Area lacks substantial topographic relief; the highest point rises to +50 feet SFD at the incline at Rincon Hill. Therefore, there is not a bluff or other substantially higher elevation within the Plan Area from which a scenic vista is available. Long-range public views along north/south-oriented streets are unavailable due to the area's relatively flat topography, overhead freeway and ramps, and shifts in the street grid at the northern and southern edges that diminish visibility into the neighboring areas, particularly when viewed at the street level. Views along east/west-oriented streets are available, although they are similarly limited by the flat topography. Prominent landforms to the east are minimally visible in the distance from most east/west streets in the Plan Area. Long-range views east primarily from Harrison Street include the natural and built areas of Diamond Heights and Twin Peaks. Views within the Plan Area are otherwise limited to shorter-range views, generally considered to be views within a quarter-mile, such as streetscapes, building architectural elements, and intermittent street-level views into the alleyways. **Figure IV.B-20** through **Figure IV.B-23**, present a representative sample of view corridors and built form within the Plan Area. Given the most dramatic changes in built form would occur in the southern portion of the Plan Area, photographs from these locations were chosen for their representative views.

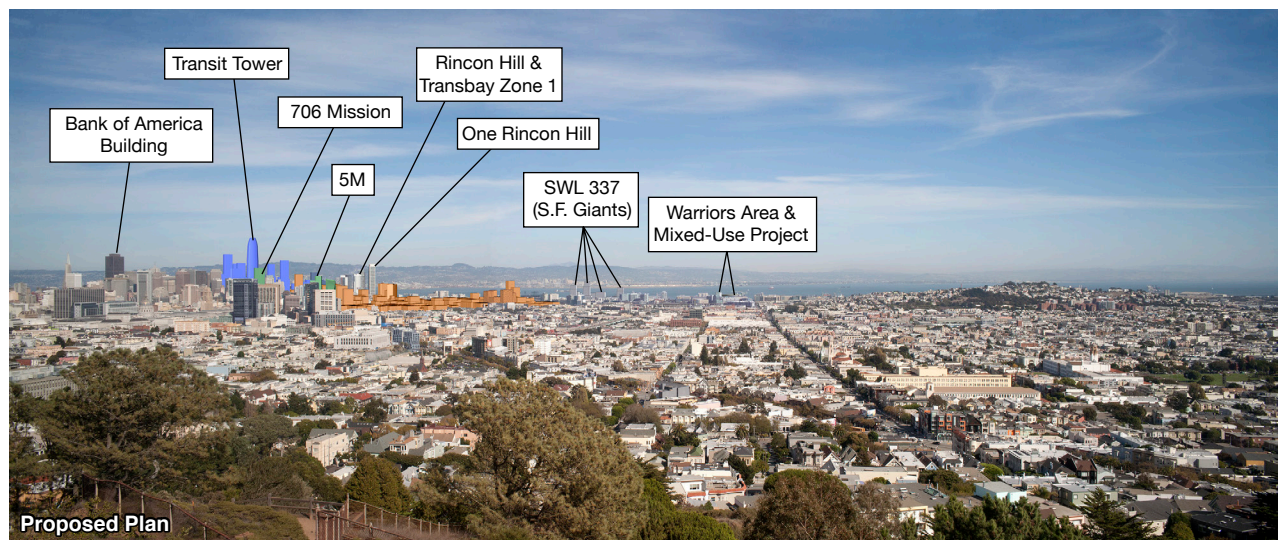
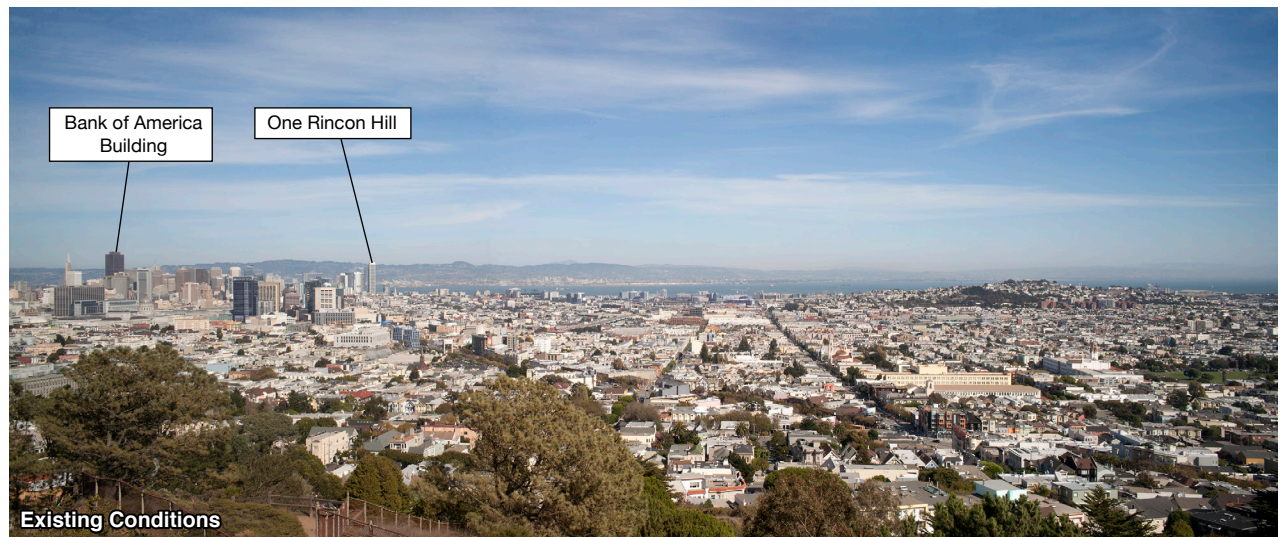


Plan Building



Plan Building
 Transit Center District Plan
 Rincon Hill/Transbay Zone 1
 Other Cumulative Development





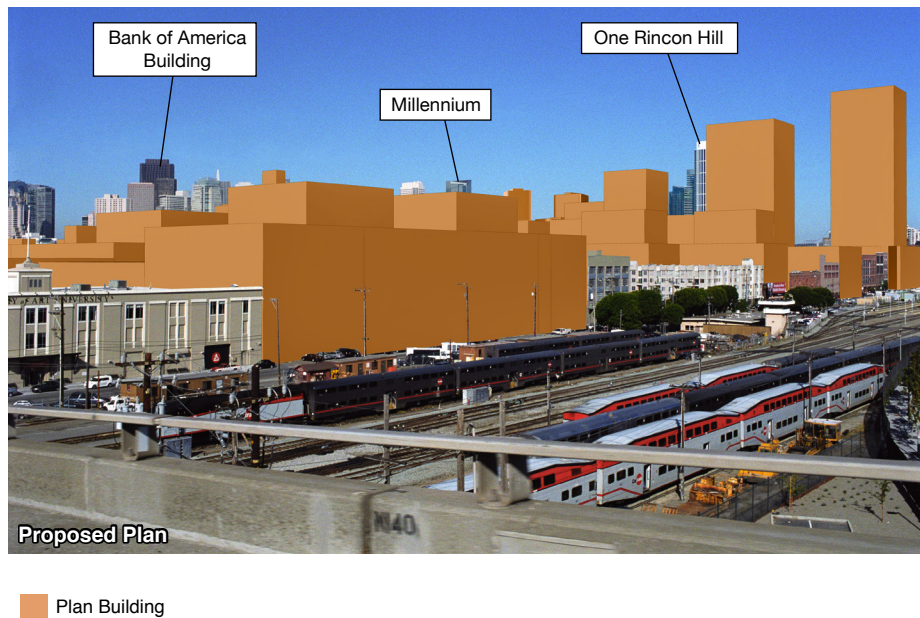
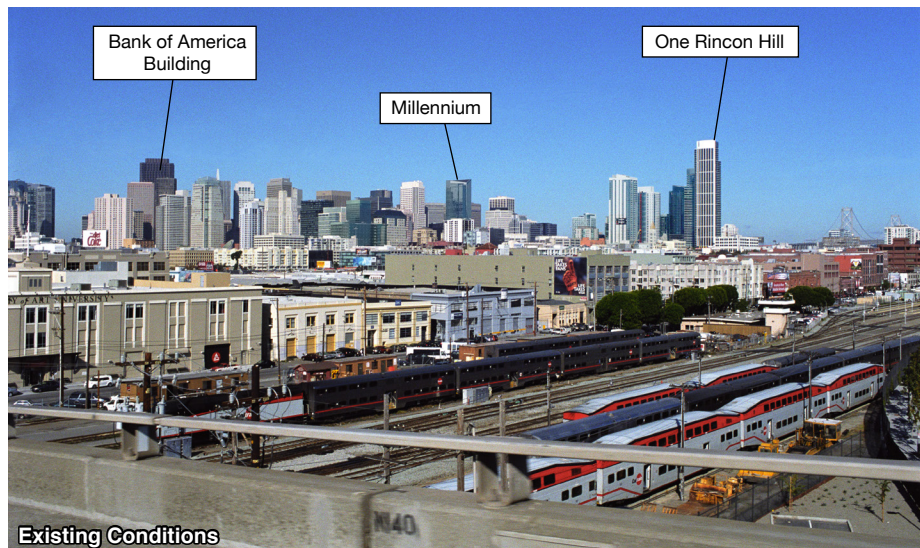
Plan Building
 Transit Center District Plan
 Rincon Hill/Transbay Zone 1
 Other Cumulative Development

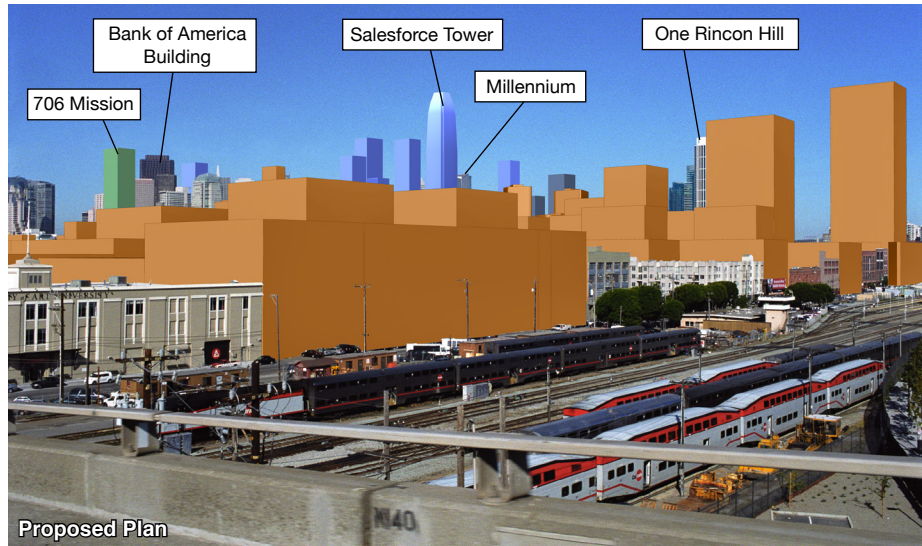
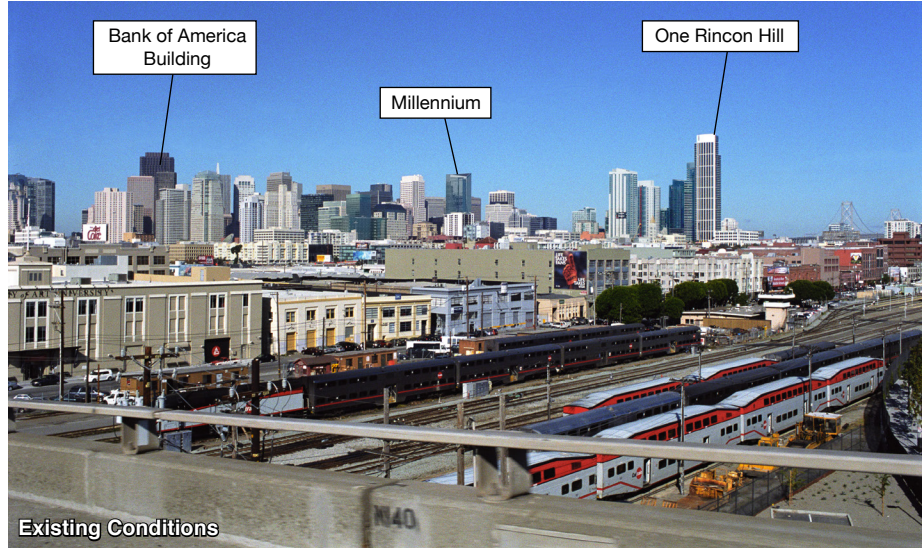
SOURCE: Square One, 2016

Case No. 2011.1356E: Central SoMa Plan

Figure IV.B-16

Long-Range Visual Simulation: Corona Heights Park:
Existing Conditions Plus Plan and Cumulative





■ Plan Building
 ■ Transit Center District Plan
 ■ Rincon Hill/Transbay Zone 1
 ■ Other Cumulative Development



The view corridor westward along Brannan Street at Sixth Street (**Figure IV.B-20, Short-Range Visual Simulation: Brannan Street and Sixth Street: Existing Conditions Plus Plan**) includes the East Bay Hills in the distance; the low- and mid-rise buildings of the southern portion of the Plan Area frame the view. The distinctive glass panel façade of the One Rincon Hill building is visible in the distance to the northeast. The remainder of the view is of the wide Bryant Street, street trees, and lighting and electric poles.

Other views in the southern portion of the Plan Area also exemplify the mix of low-rise uses and building types that are present. The view north along Fourth Street at Townsend Street (**Figure IV.B-21, Short-Range Visual Simulation: Fourth Street and Townsend Street: Existing Conditions Plus Plan**) shows the low-rise, warehouse character of the southern portion of the Plan Area in the foreground. In the mid-range view is a mix of building types, as well as the I-80 elevated freeway. In the distance, the high-rise Intercontinental, Hilton, Westin St. Francis, Hotel Nikko, and Parc 55 Wyndham hotels are visible. The view from South Park Street at Third Street (**Figure IV.B-22, Short-Range Visual Simulation: Third Street and South Park Street: Existing Conditions Plus Plan**) illustrates the range of uses in the immediate area, including residential, gas station, and light industrial uses in a mix of building types. Long-range views are not available from South Park because of intervening buildings ringing the park and relatively flat topography.

The view looking southward on Fifth Street at Bryant Street (**Figure IV.B-23, Short-Range Visual Simulation: Bryant Street at Fifth Street: Existing Conditions Plus Plan**) is of low-rise (two- to three-story) warehouse buildings and the I-80 freeway entrance ramp in the shorter- and mid-range views, and includes a range of façade types and colors. The wide major streets and intersections are evident.

Light and Glare

Sources of light and glare around the Plan Area are generally limited to the interior and exterior lights of buildings and lighting visible through windows, parking lots, and city streets, as well as from the elevated I-80 freeway and off-ramps. These sources of light are typical of those in a developed urban area. In addition, cars and trucks traveling to, from, and within the Plan Area represent a source of glare.

IV.B.3 Impacts and Mitigation Measures

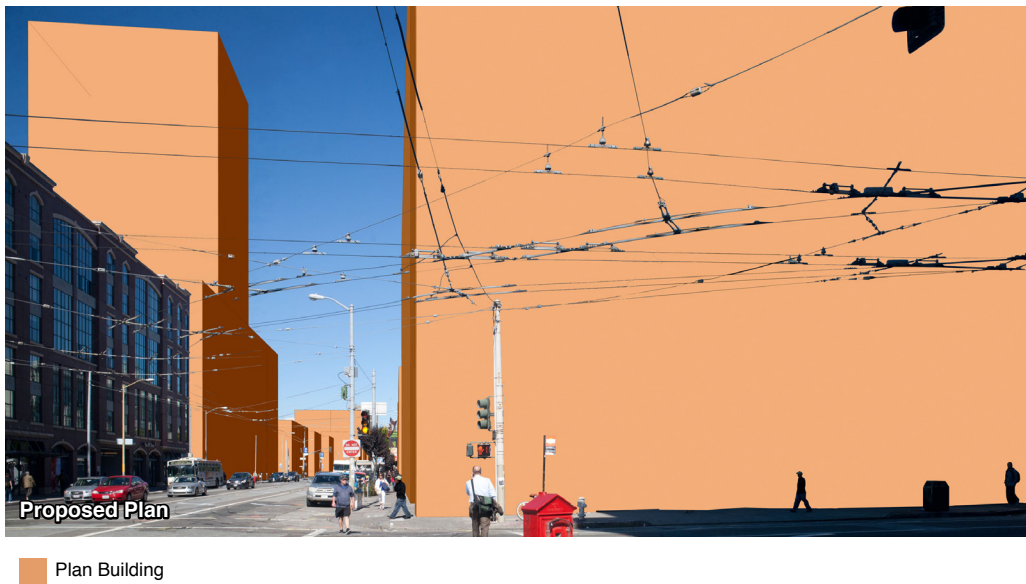
Significance Criteria

For purposes of this EIR, implementation of the Plan, including proposed open spaces and street network changes would have a significant effect on visual quality if it would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and other features of the built or natural environment which contribute to a scenic public setting;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.



Plan Building







Approach to Analysis

The Plan is a regulatory program and would result in new planning policies and controls for land use to accommodate additional jobs and housing. Although the Plan would establish a policy and regulatory framework that, if carried out, could alter the urban form of the Plan Area, the Plan itself would not result in direct physical changes to its existing visual character. Any changes in urban form and visual quality would be the result of subsequent individual development projects allowed under the Plan. Street network changes and open space improvements could also have physical effects.

In general, visual quality is subjective and the degree of change perceived by observers varies. For example, some observers could be more keenly aware of any increase in building height or overall density, and these observers could find these changes substantially disruptive. On the other hand, it is likely that some observers would not consider the changes to the visual setting to be substantial, while still others would see a benefit in certain alterations of the built environment (such as the streetscape improvements proposed as part of the Plan, for instance). The significance determination is based on consideration of the extent of change related to visibility from key public vantage points, as well as the degree of visual contrast and compatibility in scale and character between the project and the existing surroundings, and the sensitivity of the affected view.

The analysis of the Plan's effect on the Plan Area's visual character or quality focuses on how the existing aesthetic quality in the area could change based on proposed changes to maximum building heights and allowed land uses, as well as design elements proposed in the Plan. The analysis considers the Plan's proposed neighborhood design objectives and policies, particularly with regard to Goal VIII, Ensure that New Buildings Enhance the Character of the Neighborhood and City, which would guide building massing, articulation, height, and ground-floor treatment. The analysis also considers the Plan's proposed improvements to the public realm, including street network changes and open space improvements, as described in Chapter II, Project Description.

The analysis evaluates the anticipated development in the Plan Area, as compared to existing conditions. Specifically, the analysis considers the degree of visual contrast and compatibility in scale and character between existing development and the future development that is likely to occur as a result of the proposed rezoning. The analysis of the Plan's effects on views considers the development anticipated throughout the Plan Area in relation to topography, siting and separation, and the Plan's proposed requirements concerning height, bulk, and sculpting, and whether or not changes to visual quality or views attributable to the plan would be substantial, demonstrative, and adverse. Concurrently, the discussion of views also includes an analysis of changes to San Francisco's urban form, specifically in the context of changes to the SoMa skyline. Discussion of potential changes to public views is accompanied by a series of visual simulations created from photographs taken from several viewpoints. The streetscape improvements, street network changes, and public realm improvements are not included in the visual simulations, but are evaluated in this EIR based on descriptions included in Chapter II, Project Description.

Impact Evaluation

Impact AE-1: Development under the Plan, including the proposed open space improvements and street network changes, would not substantially degrade the visual character or quality of the Plan Area or substantially damage scenic resources. (Less than Significant)

Development under the Plan

Physical changes are likely to occur as a secondary effect from the revisions to the *Planning Code* use and height and bulk districts throughout the Plan Area. Visual effects of new uses that may be foreseeable under the Plan would be most prevalent in areas where the Plan would allow for construction of taller buildings compared to existing conditions. As shown in Figure II-7, Proposed Plan Area Height and Bulk Districts, in Chapter II, Project Description, the Plan would allow increased height limits along much of Fourth Street south of Harrison Street and Harrison Street east of Fourth Street. In addition, increased height limits would also be allowed in the area bounded by Bryant Street to the north, Fourth Street to the east, Townsend Street to the south, and Sixth Street to the west from 85 feet (or lower) to up to 160 feet. The Plan would also allow for towers between 200 and 400 feet in height on certain sites south of Bryant Street, including three towers of between about 220 and 270 feet in height on the site of the existing San Francisco Flower Mart, as well as a 200-foot-tall building located on the northeast corner of Brannan and Bluxome Streets, a 250-foot-tall tower on the northwest corner of Bluxome and Fourth Streets, a 400-foot-tall tower located on the northeast corner of Townsend and Fourth Streets, another 200-foot-tall tower located on the northeast corner of Brannan and Fourth Streets, and a 300-foot-tall tower located on the north side of Townsend Street between Fourth and Fifth Streets. The Plan would also allow for towers between 200 and 350 feet in height on the north and south sides of Harrison Street between Second and Third Streets, a tower of 200 feet in height on the northeast corner of Third and Harrison Streets, a 180-foot tower at the northwest corner of Fourth and Folsom Streets, and a 300-foot-tall tower on the southwest corner of Fifth and Howard Streets. Elsewhere in the Plan Area, most height limits would remain as under existing conditions, at 85 feet or less; as noted, some existing height limits of as little as 40 feet would be increased to as much as 85 feet.

Development pursuant to these height limits would result in substantially taller buildings than the existing low- to mid-rise buildings both west of and along Fourth Street and Fifth Street south of I-80, where the highest concentration of taller buildings would be allowed, as well as along Harrison Street and Bryant Street east of Fourth Street, parallel to and on both sides of the elevated freeway. Taller buildings would also be allowed, but to a much lesser extent, along Folsom Street between Fourth and Fifth Streets—notably, adjacent to and/or on the site of the Moscone Center Central Subway station, and along Brannan Street between Fourth and Fifth Streets. These clusters of taller buildings would represent a departure from the predominantly 50- to 85-foot scale of existing buildings in the southern portion of the Plan Area. However, they would be compatible with the taller buildings farther to the north, such as residential buildings along Clementina Street and new commercial office spaces on Folsom Street, as well as the taller residential buildings to the south in the Mission Bay neighborhood.

The relatively greater height and density of development now present in some locations north of the Plan area would be expanded along the Fourth, Fifth, Harrison, Brannan, and Townsend Street corridors. The final zoning recommendations for Plan implementation would include a set of guidelines for key development

sites, which would highlight the desired locations for open space, mid-block alleys, building massing, and other key factors. These controls would refine the bulk increases of taller buildings on these sites. For sites that are not subject to the guidelines for key development sites, the Plan, specifically Goal VIII, includes a number of implementation measures to modulate the bulk of new buildings.

As described in Chapter II, Project Description, the Plan would seek to retain the character of the mid-rise district, limiting the presence of high-rises to areas near transit stations. Therefore, other height-limit increases would be relatively modest. For example, along Brannan Street between Fifth and Sixth Streets, the maximum height would increase between five and 30 feet. The portion of the Plan Area along the eastern edge of Sixth Street and the entire blocks between Fifth and Sixth Streets north of Bryant Street, would retain their existing height and bulk districts, as would the blocks bounded by Folsom Street to the north, Fourth Street to the east, Harrison Street to the south, and Fifth Street to the west. The block north of Folsom Street between Fourth and Fifth Streets also would retain its existing height and bulk districts, as would blocks in the southeast portions of the Plan Area bounded by Bryant Street to the north, Second Street to the east, Townsend Street to the south, and Third Street to the west, including the blocks immediately west of Third Street. The retention of these bulk and height districts, as well as only minor modifications to other height and bulk districts in the Plan Area, would encourage the preservation of the low- to mid-rise character of large portions of Central SoMa.

The development of individual projects likely to occur under the Plan would also result in the removal of some visual elements with neutral or low aesthetic value, including surface parking lots, and their replacement with new structures. These underutilized parcels would be replaced by the low-, mid-, and high-rise buildings allowed as described above.

Physical changes are expected to be incremental and occur gradually over time, as individual project sponsors find opportunities and financing to implement their projects. Given historical development patterns, it can also be assumed that not all parcels would be built to maximum height and bulk limits. The height limits proposed by the Plan would provide a greater incentive than the existing limits for redevelopment of certain specific corridors and areas. As a result, some new buildings could be noticeably taller than the adjacent remaining structures that are not redeveloped. However, while the character of the Plan Area would be altered, it would not necessarily be detrimental in terms of visual quality for the reasons discussed below.

Although the diverse scale and mid-rise character of much of the Plan Area would be retained, implementation of the Plan would result in changes both to the cityscape and on ground level. Taller buildings in specific clusters would reinforce the existing street grid-oriented development patterns and the locations of transit, but would concentrate visual changes at specific locations. At the ground level, there would be a perceptible change in both pedestrian and vehicular activity, owing to the introduction of higher-density development. However, while these changes would be noticeable, they would not necessarily be considered adverse. Visual changes would expand southward and intensify the existing pattern of mid-rise development that is present north of the freeway in Central SoMa and south of the Plan Area in Mission Bay North. As with the areas north of the freeway, the expanded mid-rise pattern south of the freeway would be interspersed with even taller buildings. Thus, while the overall appearance of the Plan Area would change as a result of the proposed Plan, the overall visual character as a densely developed urban area would be generally consistent with existing conditions. Moreover, the consistent pattern of development adjacent to I-80 would reduce the visual prominence of the elevated freeway viaduct.

Less visual change would occur north of the freeway where building height limits would generally be maintained at existing allowable limits. Historic preservation policies would continue to protect the older building stock that predominates along some streets. As such, with the exception of the Plan's proposed street network changes and despite any new development that may occur in these areas in the future, the existing visual character of the northern portion of the Plan Area would largely remain unchanged by the Plan.

While the Plan would result in aesthetic changes within the Plan Area due to the construction of new buildings and an overall intensification of urban uses, simulated in Figure IV.B-13 through Figure IV.B-23, under Impact AE-2, below, such changes would not necessarily be considered adverse. Future uses and building designs would be developed pursuant to the *General Plan* and a set of urban design controls and guidelines proposed by the Plan as discussed in Chapter II, Project Description. Over time, adherence to these design controls and guidelines would be expected to result in new development that is generally compatible with the existing development. However, the mix of building styles and uses across the Plan Area would be preserved. At the same time, the development of underutilized parcels and surface parking lots could enhance the visual quality of their immediate areas by replacing low use areas with active uses.

In terms of visual and scenic resources, the Plan calls for intensification of development and uses in the Plan area, and introduction of additional office spaces and housing within the existing street grid. No natural scenic resources would be affected as none exist in the Plan Area, and existing scenic resources identified in the Environmental Setting section above would not be directly affected. Accordingly, the Plan would result in less-than-significant impacts on scenic resources.

Although visual quality is subjective, based on the foregoing, the implementation of the Plan would not result in a substantial, demonstrable negative aesthetic effect on the existing visual character or quality of the area and its surroundings, nor would the Plan result in substantial adverse impacts on visual or scenic resources.

Proposed Street Network Changes

As stated in Chapter II, Project Description, implementation of the Plan would include upgrades to sidewalks to meet the standards in the *Better Streets Plan*, provision of corner sidewalk extensions, and addition of street trees and furnishings. In addition, implementation of the Plan would amend the *Planning Code* to require that new construction on Fourth Street south of Harrison Street provide for a five-foot setback from the property line that would allow for further increases in sidewalk widths adjacent to new construction.

Other proposed changes to the striping and geometry of public rights-of-way, such as installation of mid-block crosswalks, installation of crosswalks at legs of major street intersections where none currently exist, restriping to meet minimum crosswalk widths, and installation of dedicated transit lanes would ease convenience of walking, cycling, and traveling via public transit. These modifications to the street network would result in minor and generally beneficial changes to the visual character of the Plan Area. Specifically, they would reduce the amount of public space allocated to private automobiles, add street trees to soften and shade sidewalks, and result in smaller-scale, more pedestrian-focused streets that have greater visual interest at the street level. These changes would not be considered adverse, and they would not affect scenic resources.

Proposed Open Space Improvements

The Plan calls for expanded and new open spaces, as shown in Figure II-14, Parks and Recreational Opportunities, of the Project Description. These improvements would include a new park between Fourth, Fifth, Bryant and Brannan Streets, and a new linear open space on a portion of the right-of-way on Bluxome Street between Fourth and Fifth Streets.

The Plan also calls for single-surface shared streets along Welsh Street and Freelon Street west of Fourth Street and Shipley Street between Fourth and Fifth Streets.⁷⁸ In addition, as indicated in Chapter II, Project Description, the Plan would reduce the scale of large blocks. This would be accomplished by extending the provisions of Section 270.2 of the *Planning Code* to the entire Plan Area, requiring new publicly-accessible mid-block rights-of-way and access easements on large lots with more than 200 feet of street frontage.

These new and expanded open spaces would soften the urbanized character of Plan Area. The built rectilinear forms and asphalt streets would be interrupted by areas of landscaping, distinct paving, and passive recreational features. These types of street treatments have been considered based on the types of streets they would serve and specific design details that are the result of local street geometries and functionality. These modifications to the area's visual character would not be adverse and would not affect scenic resources.

Summary

In summary, implementation of the Plan, including subsequent development projects and construction of the proposed street network changes and open space improvements, would not adversely affect the visual character or scenic resources of the Plan Area. The impact would be *less than significant*.

Mitigation: None required.

Impact AE-2: Development under the Plan, including the proposed open space improvements and street network changes, would alter public views of the Plan Area from short-, mid-, and long-range vantage points and alter views into the surrounding neighborhoods from within the Plan Area, but would not adversely affect public views or have a substantial adverse effect on scenic vistas. (Less than Significant)

As stated above, the Plan Area lacks substantial topographic relief; therefore, there is not a bluff or other substantially higher elevation within the Plan Area from which a scenic vista is available. Accordingly, this discussion analyzes the effect of development under the Plan and its effect on short- and mid-range views within the Plan Area, as well as long-range views from outside the Plan Area. Open space improvements and street network changes developed pursuant to the Plan would not result in substantial changes to existing views. This analysis therefore focuses on the effects on views that may be altered by subsequent development projects.

As noted under Impact AE-1, changes in building mass and bulk would be focused in the southern half of the Plan Area, as well as near transit stations along Fourth Street. New, taller buildings would be allowed in these

⁷⁸ Shared streets are defined as streets that accommodate pedestrians and bicyclists, as well as motor vehicles, in a single right-of-way.

areas. Such physical changes would be implemented as a result of the revisions to the zoning and height and bulk districts. In modifying the controls on the vacant and underutilized parcels, the Plan would allow greater development that would affect the built form of some of the Plan Area, extending the mid-rise character north of the Plan Area farther south. The Plan would also facilitate development of underutilized lots, including surface parking lots, and their replacement with new, taller structures.

Physical changes to urban form would be expected to be incremental and occur gradually over time, as individual project sponsors find opportunities and financing to implement their projects. It is also the case that parcels within the Plan Area are not built to maximum height and bulk limits and many likely would not be demolished and redeveloped to the maximum allowed heights. As a result, some new buildings could be noticeably taller than the adjacent remaining structures that are not redeveloped. Views of the Plan Area would be altered, although the change would not be adverse for the reasons discussed below.

The greatest changes to view corridors would occur in the southern half of the Plan Area, as well as near transit stations along Fourth Street, where height limits would increase the most. In particular, as noted above, the Plan would allow for approximately eight towers of between 200 and 400 feet in height on certain sites south of Bryant Street. The Plan would also allow for six towers between 200 and 350 feet in height on the north and south sides of Harrison Street between Second and Third Streets, a tower of 200 feet in height on the northeast corner of Third and Harrison Streets, a 180-foot tower at the northwest corner of Fourth and Folsom Streets, and a 300-foot-tall tower on the southwest corner of Fifth and Howard Streets. However, elsewhere in the Plan Area, most height limits would remain as under existing conditions, at 85 feet or less, with some existing height limits of as little as 40 feet allowed to increase to only as much as 85 feet. View corridors across vacant or underutilized parcels would be affected by this allowable increase in height in some portions of the Plan Area. In addition, the fairly “open” feeling that is currently conveyed at the ground level at major intersections and along some streets would be affected by the development of projects pursuant to the Plan, thereby narrowing or obstructing existing view corridors. It should be noted that in many areas, these more open views are dominated by broad expanses of pavement on major streets that carry heavy vehicle traffic. New, taller development would be limited around existing open spaces, including South Park and the Alice Street Community Gardens. Therefore, the relative “open” feeling of these areas would remain as under existing conditions.

Figure IV.B-12 presents a visual simulations location map. Figure IV.B-13 through Figure IV.B-23, present views of Central SoMa from locations distant from, near, and within the Plan Area, as well as visual simulations of the built form envisioned by the Plan. The built forms of the Central SoMa Plan are shown in orange. It should be noted that the visual simulations do not take into account detailed bulk sculpting measures that would be required under the Plan, which are articulated in Goal VIII, Objective 8.3, “Reinforce the Character of Central SoMa as a Mid-Rise District with Tangible ‘Urban Rooms’.” Therefore, the visual simulations of development that could occur under the Plan depict a worst-case scenario.

In long-range views, from the Potrero Hill neighborhood (at Texas Street and 19th Street), as well as from Corona Heights Park, Figure IV.B-13/Figure IV.B-14 and Figure IV.B-15/Figure IV.B-16, respectively, the change attributable to the Plan would be views of the upper stories of new development, with mid-rise buildings extending southward from the existing high-rise buildings Downtown, as well as northward from Mission Bay. Relatively small portions of new low-rise buildings would be visible, and would be generally visually subsumed within the surrounding existing development. The new mid-rise buildings would present a

more densely built visual character. However, these buildings would not detract from views of the Downtown skyline, which taken together create a unique and distinctive backdrop, where all of the more prominent high-rises would continue to be visible. New construction would not adversely affect views of the East Bay Hills, which would remain mostly unchanged. The tallest new vertical elements (at parcels on Fourth Street at Townsend Street, Fourth Street at Brannan Street, and Harrison Street at Third Street) would partially obscure views of the Bay from Corona Heights Park, but not to a large extent.

Development pursuant to the Plan would occur gradually over time, but would have a much more substantial effect on mid-range views, specifically from those immediately outside the Plan Area. Approaching the Plan Area along I-280 (Figure IV.B-17/Figure IV.B-18), the new mid- and high-rise buildings would obscure dynamic (moving) views of the existing low-rise development in the neighborhood, especially given the concentration of anticipated new development along Fourth Street and in the southwestern portion of the Plan Area, as well as views of most of the existing buildings in the Financial District. Approaching from the east along I-80 from the Bay Bridge (Figure IV.B-19), the new development would be visible above the roadway deck, and in some locations would partially block views of the natural and built environment of the Twin Peaks and Diamond Heights neighborhoods. These dynamic views, including interruptions of existing views, would typically be observed very briefly by viewers in vehicles travelling at freeway speeds. The view would be of a more heavily and densely urbanized area, adjacent to the high-rises of Downtown and Rincon Hill.

The Plan would also change short-range views. Views along Brannan Street, Bryant Street, and Townsend Street, as well as numbered streets in the southern portion of the Plan Area, would be of taller built forms with more bulk than under existing conditions, particularly where surface parking lots or other underutilized spaces currently exist and would presumably be replaced by buildings at maximum allowable height and bulk (see Figure IV.B-20 through Figure IV.B-23). View corridors would be interrupted by new building masses, obscuring views of the sky and (when looking northward) buildings downtown. Views would be of a mixed-height neighborhood, with several mid-rise buildings. All development is expected to occur within existing lot lines, so that view corridors along the center of streets would remain. As stated above, the building massings depicted in the visual simulations would be subject to bulk sculpting measures that would be required under the Plan. However, as shown in the visual simulations, views from sidewalks would be partially obscured. The overall views of the Plan Area would continue to be of densely developed urban landscapes.

In summary, long- and mid-range views would be affected by development pursuant to the Plan. Taller buildings would alter or partially obscure long-range views of the Bay, the topography of the city and region, and Downtown buildings, but not to the extent that any view would be substantially impaired. In short-range views, the “open” feeling that currently exists within the Plan Area would be reduced by the new built fabric. The sky would continue to be visible, however, above and directly along each street, as it is in other mid-rise neighborhoods in the city. For the reasons discussed above, development pursuant to the Plan would have a *less-than-significant* impact on views and scenic vistas.

Mitigation: None required.

Impact AE-3: Development under the Plan, including the proposed open space improvements and street network changes, would not create a new source of substantial light or glare in the Plan Area that would adversely affect day or nighttime views or substantially impact other people or properties. (Less than Significant)

Implementation of the proposed Plan would generate additional night lighting in the future, but the change is not anticipated to be substantial or adverse in the context of the existing lighting conditions in the Central SoMa neighborhood. New lighting would not be in excess of that currently emitted by existing buildings, and could be expected to be incrementally reduced, on a per-building basis, with the requirements in the *San Francisco Building Code* and *Green Building Code* for energy conservation. Compliance with design guidelines and the *Planning Code* would also require the use of non-reflective glass, downward-directed and shielded outdoor lighting, and controlled illumination of outdoor signage. Therefore, implementation of the Plan would not result in obtrusive light or glare that would adversely affect views or substantially affect other properties. (A separate analysis of lighting effects on birds is presented in Appendix B, Initial Study, Section D.13, Biological Resources, p. B-124.)

Planning Commission Resolution 9212 generally prohibits the use of mirrored or reflective glass in new buildings. Therefore, impacts related to glare of new development would not be substantial. Street network changes and open spaces improvements would result in glare and lighting conditions similar to existing conditions.

Based on the above, impacts of the proposed Plan on light and glare would be *less than significant*.

Mitigation: None required.

IV.B.4 Cumulative Impacts

Impact C-AE-1: Development under the Plan, including the proposed street network changes and open space improvements, in combination with past, present and reasonably foreseeable future projects, would alter the visual character and public views of and through SoMa, but would not adversely affect visual character, scenic vistas, or scenic resources or substantially increase light and glare. (Less than Significant)

Development under the Plan

The projects that are included in the cumulative scenario for purposes of visual quality analysis include: the Transit Center District Plan, buildings proposed within Zone 1 of the Transbay Redevelopment Plan, buildings proposed under the Rincon Hill Plan, the Museum of Modern Art expansion (under construction), the residential tower at 706 Mission Street that will also house the Mexican Museum (approved), the expansion of Moscone Convention Center (approved), and the 5M project (approved). As shown in Figure IV.B-14 through Figure IV.B-23, these approved, reasonably foreseeable future cumulative projects are shown in blue (Transit Center District Plan) and gray (Rincon Hill and development within Zone 1 of the Transbay Redevelopment Plan, primarily along Folsom Street east of Second Street). Other planned or approved cumulative development projects (notably, the 5M and 706 Mission Street projects) are shown in green. Smaller projects within and near the Plan Area, even mid-rise developments, would not generally be discernible in long-range views of the Plan Area, nor in shorter-range views from within the Plan Area (unless

a project were immediately in the field of view). Accordingly, such smaller projects would not combine with Plan Area development and the larger cumulative projects discussed here to result in significant cumulative impacts.

When combined with other foreseeable projects proposed or under construction nearby, the Central SoMa Plan would alter the visual character of the northeast portion of the city, although in the context of the already-developed Plan Area, the change would not be considered adverse. For example, in the Transit Center District Plan to the east of the Plan Area, buildings up to 1,070 feet in height are allowed and are under construction. The proposed Plan, combined with the past, present, and reasonably foreseeable future development nearby, would create more density in SoMa, with both more high-rise and more mid-rise buildings, and increased building height and density that is focused on locations near major transit hubs and other transit nodes. Implementation of this collection of projects and the subsequent development that could occur under these land use plans would intensify the overall look and feel of these areas. However, this visual change would not be substantially adverse.

In addition, underutilized and vacant parcels across all plan areas and cumulative projects would be developed, removing areas of lower-quality visual character.

For instance, as shown in Figure IV.B-14 and Figure IV.B-15, the proposed building heights within the Plan Area would foster a transition from the taller heights of existing conditions plus cumulative projects in the areas north of the Plan Area, including Downtown, to the more mid-rise visual character of Central SoMa, and then to the more low-rise character of areas south of Central SoMa, such as Mission Bay and Dogpatch. Therefore, the overall increases in height and bulk of cumulative development would change the visual character of greater SoMa, but not in an adverse manner.

As with the Plan, cumulative development would not substantially disrupt the existing natural or built environment. Accordingly, cumulative impacts on scenic resources would be less than significant.

Regarding views from distant locations, the Plan, combined with cumulative development, would alter views of the Bay and East Bay Hills, but also would create new visual focal points. The new towers that would be constructed under the Transit Center District Plan and Rincon Hill Plan would obscure such views to a greater degree. However, urban design controls applicable to development would encourage slender towers by requiring minimum tower separation distances and square footage reductions in the towers' upper levels.⁷⁹ Overall, the cumulative impact to views would not be adverse to a level that would be considered significant. The Plan's focus on mid-rise development would preserve existing views of the East Bay Hills and Downtown skyline, and would mostly preserve views of the Bay. As shown in Figure IV.B-15/Figure IV.B-16, construction of new buildings under the Central SoMa Plan would not contribute considerably to blocked views of the East Bay Hills and, therefore, the Plan, in combination with past, present and reasonably foreseeable future projects, would not result in a cumulative impact on distant scenic views.

Cumulative impacts in the dynamic (moving) views from locations along I-280 and I-80 (Figure IV.B-17/ Figure IV.B-18 and Figure IV.B-19) would be similar to those of the Plan, in that the new buildings in the Plan Area would partially obscure views of cumulative developments nearby and the Downtown skyline, as well as

⁷⁹ *Planning Code*, Section 270.

of the Twin Peaks and Diamond Heights neighborhoods. However, the upper floors of newer, taller cumulative developments would continue to be visible, and as noted above, these changes would be minor and would not adversely affect views to a level that would be considered significant. As shown in Figure IV.B-17/Figure IV.B-18 and Figure IV.B-19, past, present, and reasonably foreseeable future developments would not combine with the Central SoMa Plan to adversely affect these views. As such, the cumulative effect would not result in an adverse change.

As described above, implementation of the Plan would not result in obtrusive light or glare that would adversely affect views or substantially affect other properties. Cumulative developments would be subject to the same mirrored and reflective glass controls in Planning Commission Resolution 9212 as development under the Plan, and the requirements for energy conservation, as well as design guidelines and *Planning Code* compliance, would be expected to reduce night-lighting impacts of new development as compared to past practices. Cumulative light and glare impacts would not be adverse.

Proposed Street Network Changes and Proposed Open Space Improvements

Implementation of the Plan's proposed street network changes and open space improvements, combined with reasonably foreseeable projects, would likely result in a softened streetscape in the northeastern portion of the city, with additional public open spaces, shared streets, and street trees, as well as reduction in the amount of space allocated to the private automobile. These changes in visual character would create smaller-scale, more pedestrian-focused streets and would generally be beneficial. Such changes would not be adverse, and cumulative impacts to visual character would be less than significant. Street network changes and open space improvements in combination with reasonably foreseeable projects would not substantially affect existing scenic resources, views, scenic vistas, or light and glare.

Summary

The Plan, combined with past, present, and reasonably foreseeable future projects, would alter the visual character of portions of the city, but not in an adverse manner, nor would these projects combine to adversely affect scenic resources. The Central SoMa Plan also would not combine with past, present, and reasonably foreseeable future projects to create a significant cumulative impact in long-range views of the Bay, East Bay Hills, or Downtown, and cumulative development would not combine with development that could occur under the Central SoMa Plan to result in cumulative impacts to any other views or scenic vistas. Cumulative light and glare impacts would not be adverse. Therefore, cumulative impacts would be *less than significant*.

Mitigation: None required.

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IV.C Cultural and Paleontological Resources

IV.C.1 Introduction

Defining Cultural Resources

“Cultural resources” include architectural resources, archeological resources, tribal cultural resources, and human remains. A “historical resource” is defined, under CEQA Section 21084.1, as one that is listed in, or determined eligible for listing in, the California Register of Historical Resources (California Register). In addition, a resource that (i) is identified as significant in a local register of historical resources, such as Article 10 and Article 11 of the *San Francisco Planning Code*, or (ii) is deemed significant due to its identification in a historical resources survey meeting the requirements of *California Public Resources Code* Section 5024.1(g), is presumed to be historically significant “unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant.” CEQA Guidelines Section 21084.1 also permits a lead agency to determine that a resource constitutes a historical resource even if the resource does not meet the foregoing criteria. Buildings and other structures, archeological resources, and tribal cultural resources may all be found to be historical resources, and the Planning Department considers those architectural, archeological, and tribal cultural resources that meet one of the definitions noted above to be historical resources for the purposes of CEQA review. Each of these categories of historical resources is discussed in this section. Further discussion of the definition of historical resources is provided under Regulatory Setting on p. IV.C-46.

Subsequent to the issuance of the Notice of Preparation (NOP) for this EIR on April 24, 2013, Assembly Bill (AB) 52 became effective. This law requires CEQA lead agencies to consider the effects of projects on tribal cultural resources and to conduct notification and consultation with federally and non-federally recognized Native American tribes early in the environmental review process. For projects for which an EIR is prepared, this provision applies only when the NOP is issued on or after July 1, 2015. Thus, this EIR is not required to analyze impacts on tribal cultural resources, nor is tribal notification required. Nonetheless, this section of the EIR identifies the potential impacts of the Plan on tribal cultural resources.

Defining Paleontological Resources

Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth. Paleontological resources are the fossilized remains of plants and animals, including vertebrates (animals with backbones), invertebrates (e.g., starfish, clams, ammonites, and marine coral), and fossils of microscopic plants and animals (microfossils). Paleontological resources are distinct from archeological resources in that they record past plant and animal life, and not human history.

Outline of this Section

This section includes information about the cultural and paleontological resources in the Central SoMa Plan Area and vicinity. Cultural resources include historical resources of the built environment, historic and prehistoric archeological resources that are determined to be historical resources, and tribal cultural resources found to be historical resources. This section provides a prehistoric and historical context of the overall Plan Area and vicinity, information on recorded architectural resources including historic districts, and an analysis of known and anticipated archeological and tribal cultural resources in the Plan Area. The section also provides an assessment of the potential environmental impacts on historical and paleontological resources associated with the implementation of the proposed Plan (comprised of *Planning Code* and Zoning Map amendments and new planning policies, as well as subsequent development projects, street network changes and open space improvements), as well as mitigation measures to reduce impacts.

The Plan Area is bounded by Second Street on the east, Sixth Street on the west, Townsend Street on the south, and by an irregular border that generally jogs along Folsom, Howard, and Stevenson Streets to the north. The Plan Area and vicinity, as well as the Central SoMa Survey Area and the Archeological Research and Design Treatment Plan (ARDTP) area, is defined as being bounded by Second Street on the east, Sixth Street on the west, Townsend Street on the south, and Market Street to the north. Information pertaining to the Plan Area vicinity is presented to account for components of the project that extend beyond the Plan Area, such as street network changes and open space improvements.

Primary sources of information for the context and setting discussion include the following: (1) Central SoMa Historic Context Statement and Historic Resources Survey, prepared by the San Francisco Planning Department and adopted by the Historic Preservation Commission on March 16, 2016;⁸⁰ (2) Draft Central SoMa Plan & Implementation Strategy;⁸¹ (3) the Western SoMa Community Plan Draft EIR Historic Resource Technical Report;⁸² (4) the ARDTP for the Plan Area;⁸³ (5) San Francisco Filipino Heritage Addendum to the South of Market Historic Context Statement;⁸⁴ and Citywide Historic Context Statement for LGBTQ History in San Francisco.⁸⁵

⁸⁰ San Francisco Planning Department, *Central SoMa Historic Context Statement and Historic Resources Survey*, March 2015; and Historic Preservation Commission Motion 0277. This document (and all other documents cited in this report, unless otherwise noted), is available for review at 1650 Mission Street, Suite 400, San Francisco, CA, as part of Case No. 2011.1356E.

⁸¹ San Francisco Planning Department, *Draft Central SoMa Plan & Implementation Strategy*, August 2016.

⁸² Page & Turnbull, *Western SoMa Community Plan Draft EIR, Historic Resource Technical Report*, prepared for Environmental Science Associates, 2011.

⁸³ Far Western Anthropological Research Group, Inc., and Environmental Science Associates, *Archaeological Research Design and Treatment Plan for the Central SoMa Plan Area*, April, 2014.

⁸⁴ Page and Turnbull, *San Francisco Filipino Heritage — Addendum to the South of Market Historic Context Statement*, prepared for San Francisco Planning Department, 2013.

⁸⁵ San Francisco Planning Department, *Citywide Historic Context Statement for LGBTQ History in San Francisco*, Final Draft, October 2015; adopted by the Historic Preservation Commission November 18, 2015.

IV.C.2 Environmental Setting

Historical Setting

The Plan Area is within the South of Market area of San Francisco. Elevations range from 0 to 50 feet San Francisco City Datum (SFD)⁸⁶ with a very gentle slope upward towards Rincon Hill, reaching the highest elevation (50 feet SFD) at Second and Harrison Streets. According to mapping compiled by the United States Geological Survey, the Plan Area and vicinity is underlain by Quaternary age sediments deposited in the last 1.8 million years, including (from youngest to oldest) Undifferentiated Surficial Deposits, Dune Sand, Bay Mud, Marsh Deposit, Marine Sand, the Colma Formation, Old Bay Clay (also referred to as the Yerba Buena Mud or the San Antonio Formation), and the Alameda Formation. Bedrock beneath San Francisco consists of sedimentary and volcanic rocks of the Jurassic and Cretaceous age (approximately 65 to 213 million years old) Franciscan complex.⁸⁷ Depending on the age of construction and site conditions, additional areas of engineered fill may be present throughout the Plan Area. Prior to leveling and filling beginning in the early American period (c. 1850), the Plan Area was adjacent to or in the marshland that formed part of an extended drainage into Mission Bay.^{88,89} The marshland and mudflats stretched north to Market Street and west to Mission Street where they curved southward in what is now the Mission District, with sandy ridges interspersed between drainages. **Figure IV.C-1, Historic Shoreline (1853 U.S. Coast Survey Map) and Plan Area**, depicts the historic shoreline.

Historic Context

This subsection has been adapted from the *Central SoMa Historic Context Statement and Historic Resources Survey*, the historic resources chapter of the draft Central SoMa Plan (2013), and the *Western SoMa Community Plan Draft EIR Historic Resource Technical Report*.⁹⁰

Development Prior to 1906

The three factors most influential in the development of the Plan Area are its proximity to the waterfront, its railroad connections, and the unusual nature of its street grid. Combined, these factors created a neighborhood that historically functioned as a nexus for industry and transport, as well as the City's most densely populated residential area, home to a primarily working-class, immigrant labor force. These dynamics have their origins in the first decades following the Gold Rush, and continued to serve as primary forces shaping the neighborhood well into the 20th century.

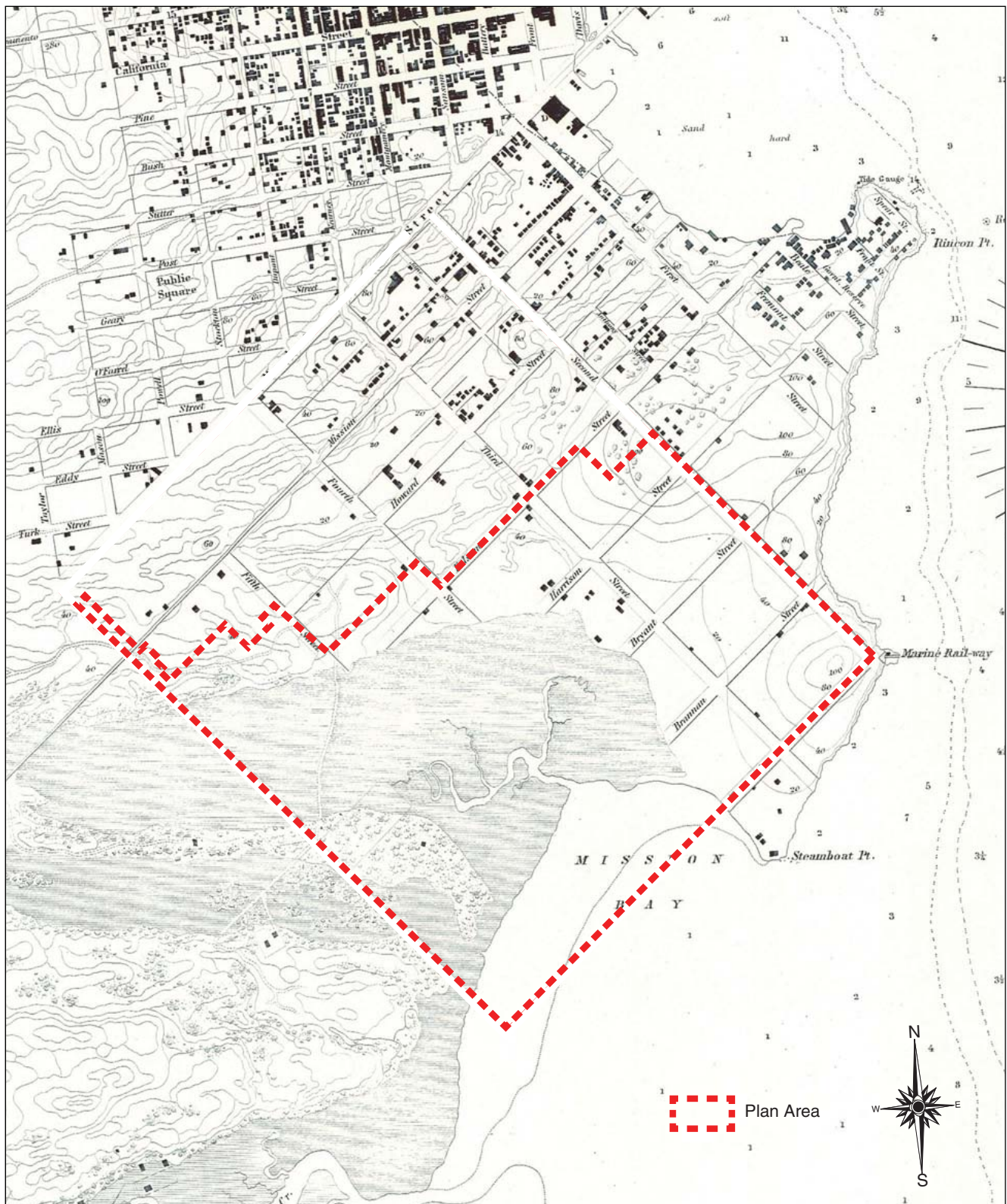
⁸⁶ San Francisco City Datum (SFD) establishes the City's zero point for surveying purposes at approximately 8.6 feet above the mean sea level established by 1929 U.S. Geological Survey datum, and approximately 11.3 feet above the current 1988 North American Vertical Datum. Because tides are measured from mean lower low water, which is about 3.1 feet below mean sea level (MSL), an elevation of 0, SFD, is approximately 8.2 feet above MSL.

⁸⁷ United States Geological Survey, *Geologic Map of the San Francisco Bay Region*, W. Graymer, et. al. Available at <http://pubs.usgs.gov/sim/2006/2918/>, accessed August 29, 2016.

⁸⁸ United States Coast Survey, *City of San Francisco & Vicinity, California. Survey completed in February 1852*; maps published 1853.

⁸⁹ United States Coast Survey, *City of San Francisco & Vicinity, California. Topography completed in 1857–1858; hydrography completed in 1857*; maps published 1859.

⁹⁰ San Francisco Planning Department, 2015; San Francisco Planning Department, 2013; and Page & Turnbull, *Western SoMa Community Plan Draft EIR Historic Resource Technical Report*, 2011 (see footnotes 41, 42, and 43, p. 1).



SOURCE: Far Western Anthropological Research Group Case No. 2011.1356E: Central SoMa Plan
Figure IV.C-1
 Historic Shoreline (1853 U.S. Coast Survey Map) and Plan Area

The 100-Vara Survey

In 1847, when California was still nominally Mexican territory (but under effective control of the U.S. military following the Mexican-American War), Irish civil engineer and surveyor Jasper O'Farrell was hired to create a new survey of San Francisco. O'Farrell laid out a 120-foot-wide Market Street on a diagonal designed to connect the growing settlement at Yerba Buena Cove (today's Financial District) with Mission Dolores. On the north side of Market Street, O'Farrell laid out blocks which measured 50 varas on a side (a vara is a Spanish unit of measurement that approximately corresponds to 33 inches), consistent with Swiss sailor and surveyor Jean Jacques Vioget's original 1839 "50-Vara survey" of the area around Portsmouth Square. South of Market Street, O'Farrell created the "100-Vara Survey," with blocks that were twice as long and twice as wide as those to the north. These larger blocks were typically bisected by smaller streets and alleys.

The different sizes of the 50-vara and 100-vara blocks meant that the north-south streets of the two opposing grids did not align, hampering direct communication across Market Street. Initially, this was not conspicuous as most of the surveyed area remained ungraded and existed only as "paper" streets and blocks marked by survey stakes. With the coming of the Gold Rush and subsequent development of the City, however, various attempts would be made to improve the connection between areas north and south of Market Street.

Topography

As the Gold Rush began in earnest in 1849, much of the Central SoMa area consisted of tidal wetlands. In particular, the portion of the Plan Area south of what is today Folsom Street and west of Third Street either consisted of tidal marshland and creeks, or was actually submerged beneath the waters of Mission Bay. To the east was Rincon Hill, rising to more than 100 feet near the intersection of Second and Harrison Streets. Toward the north, what is today Mission Street marked the crown of an east-west dune ridge, while Market Street was covered by sand hills of varying heights. During the Gold Rush, the majority of development south of Market Street was concentrated in "Happy Valley," located along the shoreline—approximately First Street—between Market and Mission Streets, and "Pleasant Valley" to the south. Both of these areas were framed on the west by a ridge of sand dunes located east of what is today Second Street. In time, the hills would be leveled and the soil used to fill in both Mission Bay and San Francisco Bay. But early in the City's history, these natural topographic features exerted a considerable influence on land use and the development of transportation routes and other infrastructure.

Industrial and Residential Development

The large 100-vara blocks surveyed by O'Farrell proved conducive to industrial development. The streets were wider (30 varas, or 82.5 feet, wide) than north of Market (where they were 25 varas wide), making the transportation of goods via wagon and eventually train and truck much easier. While larger streets such as Mission, Howard, and Folsom served as the primary thoroughfares, the 100-vara blocks were also interlaced by a network of smaller back streets and alleys such as Jessie, Tehama, Shipley, Perry, and Bluxome Streets, which provided light-traffic areas in which to load and unload goods.

As early as 1850, the South of Market area was on its way to becoming San Francisco's primary industrial district. Important pioneer foundries such as Union Iron Works, Vulcan Iron Works, and Pacific Iron Works

set up shop on the waterfront, at First Street. During the Gold Rush era, this compact industrial district served as the most productive industrial zone on the West Coast.

While the most heavily industrialized areas were concentrated near the waterfront and railroad connections, smaller-scale manufacturing facilities were scattered throughout the South of Market area where they often existed immediately adjacent to residential areas. Irish immigrants and their children predominated among the residential population of the South of Market area, comprising roughly half the population. However, many other nationalities were represented. An analysis of an 1880 census tract near the corner of Third and Mission Streets showed that one quarter of the residents were born in countries that included England, Germany, Austria, Canada, Italy, Mexico, China, Sweden, and Norway. By this time, the South of Market area's reputation as an immigrant and working-class district was firmly established. Boarding houses and lodging houses grew up simultaneously with the industrial plants, shipping facilities, and commercial buildings. These provided relatively inexpensive lodgings for the area's labor force, which consisted primarily of single males. During the 1870s, the neighborhood contained one-quarter of the boarding houses and one-half of the 655 lodging houses in San Francisco.

Residential development in the South of Market area also included a few overtly affluent residential enclaves during this time. Most prominent was a concentration of large homes along the upper slopes of Rincon Hill. The relatively mild climate, panoramic views, and proximity to downtown inspired several of San Francisco's early mercantile leaders to construct mansions with ample gardens along the crest of the hill. Rincon Hill remained San Francisco's most desirable address until construction of the Second Street Cut in 1869, which sliced through Rincon Hill to create a direct route to the shipyards at Steamboat Point. Another residential enclave designed to attract affluent residents was located at South Park, where Englishman George Gordon in 1852 began purchasing lots to construct a townhouse development around an oval garden 75 feet wide and 550 feet long, in the manner of the residential "crescents" of London, New York, and Boston. Streets and sidewalks at South Park were the first in the city to be paved.

Railroad and Streetcar Development

Rail transport played a vital role in the development of the Plan Area in the mid-1860s, beginning when the San Francisco & San Jose Railroad built a spur from its terminus at Valencia and Market Streets to Fourth and Bryant Streets in the Plan Area in the mid-1860s. However, the dominant player in San Francisco's railroad development was the Central Pacific Railroad. In 1868, the State of California granted title to 192 acres of Mission Bay to the Central Pacific. In 1870, the Central Pacific purchased the San Francisco & San Jose Railroad, and by 1872 had completed freight and passenger terminals at Third and Townsend Streets. Spur lines ultimately connected to many warehouses and industrial plants, and the curving rights-of-way for several of these spurs persist in the southern portion of the Plan Area, particularly near the current Caltrain station and rail yard. Beginning in 1889, the network of Southern Pacific tracks (which had leased the Central Pacific tracks beginning in 1885) was augmented by the short-line State Belt Railroad, which evolved into a 67-mile network linking piers and warehouses along the waterfront, eventually reaching Fort Mason and the Presidio.

Streetcar transit was another critical feature of development in the South of Market area. Initially these lines featured horse-drawn cars called omnibuses, although many were later converted to cable car or electric trolley service. By 1863, three separate companies ran streetcars on First, Second, Third, Fourth, Sixth,

Howard, and Folsom Streets. A decade later, streetcar lines had been installed along every numbered street but Fifth Street, with lines running along Mission, Folsom and Brannan Streets. The southern terminus for many of these lines was the growing Mission District, which in many ways functioned as a working class suburb of the South of Market. By 1905, two more lines had been installed in the Central SoMa area running along Harrison Street and Fifth Street—making the South of Market area perhaps the most transit-rich neighborhood in San Francisco.

Street improvements in the late 1800s also influenced the form and scale of the Plan Area and vicinity, such as the Second Street Cut that created a wide thoroughfare along Second Street and the development of New Montgomery Street, intended to provide a southerly extension of downtown into the South of Market area.

Commercial Development

The opening of New Montgomery Street had a transformative effect on the surrounding area, which evolved from a generally low-rent industrial and residential character into a more intensive commercial, civic and entertainment zone, especially the area bounded by Market, Mission, First, and Fifth Streets. Among the most important buildings erected in this area included the U.S. Mint (today, the “Old Mint”), which opened at Fifth and Mission Streets in 1874, and the Grand Opera House, which opened on Mission Street in 1876. Another prominent area was “newspaper angle,” centered on the intersection of Market and Third Streets, which housed a number of the City’s newspaper companies and included many of the City’s earliest skyscrapers, including the 19-story Spreckels/Call Building (1896) on the southwest corner, the 7-story Hearst/Examiner building on the southeast corner (1898), and the 10-story DeYoung/Chronicle Building (1889) across the street at Market and Kearny Streets. The Call and DeYoung buildings exist today, albeit with modifications.

Fire and Reconstruction (1906–1936)

On April 18, 1906, a massive earthquake struck San Francisco. Most buildings in the city remained standing—although structures located on filled ground suffered the greatest damage. Within hours, however, overturned stoves, toppled chimneys and ruptured gas lines produced scores of fires that quickly spread unchecked throughout the City. Damaged water mains made firefighting largely futile, and by the following day all of downtown and the South of Market area had been consumed by flames. The numerous fires eventually merged, burning for three days and destroying some 28,000 buildings. An estimated 3,000 or more people perished in the disaster, and approximately 250,000 people—more than half of the entire 1906 population of San Francisco—were left homeless.

Only a handful of buildings remained standing in the South of Market area, most of them steel-framed structures gutted by fire. These included the aforementioned Call Building (along with the DeYoung building across Market Street); the Aronson Building at Third and Mission Streets; the Atlas Building at 602-606 Mission Street; the California Casket Company Building at 943 Mission Street; the Kamm Building at 715-719 Market Street; and St. Patrick’s Church, on Mission Street between Third and Fourth Streets. The most prominent building that survived was the U.S. Mint, which had thick masonry walls, cast iron fire shutters, internal fire suppression reservoirs, and a committed workforce that worked to extinguish any fire that entered the building. A narrow band of warehouses along Townsend Street also survived, where firemen pumped salt water from Mission Channel to extinguish the flames.

Early Recovery

Rebuilding began within weeks of the disaster, with the downtown commercial district entirely rebuilt and modernized within the first few years. An important factor that initially impacted reconstruction was the requirement for fireproof construction. Prior to 1906, the only part of the South of Market area that required such methods was bounded by Market, Howard, Second, and Fifth Streets. This area, which historically served as an extension of downtown, was rapidly reconstructed, but other parts of the South of Market area were rebuilt more slowly. By 1909, it was clear that industrial development was going to be the primary guiding force in the reconstruction of much of the area, particularly near the waterfront and adjacent to the railroad terminals: the South End warehouse and manufacturing district was rebuilt almost immediately, with many buildings erected on the foundations of the warehouses that existed prior to the fire, while another concentration of warehouses was built in the block bounded by Bluxome, Townsend, Fifth, and Sixth Streets (identified as part of the Bluxome and Townsend historic district, eligible for listing at the local (Article 10) and National Register levels; see discussion below under “Architectural Resources in the Plan Area,” p. IV.C-15).

Most industrial construction of the 1910s and 1920s in the South of Market area was executed in brick, reinforced concrete, or steel frame. While concrete and masonry construction was more expensive, it was also more durable and less susceptible to fire damage. The 1920s also marked the first use of zoning restrictions in San Francisco. Beginning in 1921, zoning maps show that most of the Central SoMa Plan Area and vicinity was designated for light industrial use. Market Street was zoned commercial, and the area south of Brannan Street was zoned for heavy industry.

The large numbers of residential hotels and lodging houses that had characterized portions of the South of Market area prior to the Earthquake once again emerged as an important residential typology. In 1907 alone, 58 hotels and 80 lodging houses were erected in the South of Market area, most along Howard, Folsom, and Third Streets.

Within the Plan Area and vicinity, small-scale residential construction was mainly concentrated in enclaves along the mid-block alleys such as Tehama, Clementina, Shipley, Clara and Ritch Streets, and generally occurred early in the post-earthquake period. As the area became more industrial, construction of smaller-scale residential buildings virtually ended. Other than larger apartments and lodging houses, very few dwellings were built after 1915.

Larger apartment houses and hotels were often designed with Classical Revival style influences, most frequently characterized by a heavy roofline featuring a modillion cornice. Classical details were also frequently incorporated into “Edwardian” flats and cottages. Residential hotels were frequently located on large corner lots, with additional concentrations on mid-block parcels along Mission, Howard, and Third through Seventh Streets. As late as 1927, this area had the City’s densest population. Mixed-use lodging houses were also common: as early as 1913, Sanborn maps describe these buildings as having “cheap lodgings.” One of the largest surviving examples of a lodging house is the former Central Hotel at 576-586 Third Street, constructed in 1907 and designed by architects Sutton & Weeks.

Streetcar and railroad tracks were among the earliest infrastructure reconstructed after the 1906 Earthquake. As it had been before the disaster, the wealth of streetcar tracks in the South of Market area made it a transit-rich neighborhood. By 1911, streetcar lines ran east-west on Mission, Howard, Folsom, Harrison, Bryant, and

Brannan Streets, as well as north-south on every numbered street except Seventh Street. Railroad yards included those of the Southern Pacific along Townsend and King Streets, with spurs serving waterfront piers, as well as the State Belt Railroad on The Embarcadero. The Southern Pacific had constructed a temporary passenger station and freight depot following the earthquake, and in 1917 built a new Mission Revival style station at Third and Townsend Streets. By this time, the Western Pacific Railroad also served the area, with a terminal located between Eighth, Ninth, Bryant, and Brannan Streets, while the Santa Fe Railroad had constructed a large rail yard and numerous warehouses along Third Street south of Mission Channel.

The 1920s Boom Years

After the initial burst of post-earthquake reconstruction, a recession followed during the First World War, but by the early 1920s, construction rebounded along with the nationwide real estate boom, resulting in buildout along many major streets. Approximately 230 extant buildings in the Plan Area were constructed in this decade. This era also included replacement of some properties built expediently during the early reconstruction with more substantial structures. A significant portion of new construction during the 1920s was associated with the advent of the private automobile, as stables, blacksmith shops, and harness shops were replaced by gas stations, auto repair shops, and parking garages.

Architectural styles were also in transition during this period. Along with the popularity of Spanish Revival Style designs, the advent of Art Deco and Gothic Revival architecture—sometimes in combination—rapidly gained influence. The most prominent example of Art Deco style architecture in the SoMa area is the Pacific Telephone Building at 140 New Montgomery Street. Designed by architect Timothy Pflueger and completed in 1925. The 26-story office building was then the tallest building in San Francisco. Art Deco designs were also adopted for many industrial buildings, largely because the simple, rigid structural systems of the buildings meshed easily with the bold geometry of the style.

Gothic Revival style architecture was more frequently applied to commercial buildings. Two excellent examples of the style were both constructed at the intersection of Fifth and Mission Streets: The Pickwick Hotel at 898 Mission Street (1923), and the San Francisco Chronicle building at 901 Mission Street (1924), since altered. Unlike the Chronicle's previous building on Market Street, which was primarily an office tower, the new Chronicle building was devoted entirely to the production and printing of the newspaper.

The Great Depression

The collapse of the stock market in October 1929 heralded a worldwide depression that lasted a decade. By the end of 1931, most private new construction in San Francisco ground to a halt. Only about 30 extant buildings in the Plan Area were constructed in the 1930s, mostly light industrial buildings, including many with Art Deco influences.

The economic collapse was widely felt, but working-class residents, such as those who lived in the South of Market area, disproportionately felt the impacts. The area along Howard, Folsom, and intersecting streets subsequently became known as “skid road” (today more commonly termed “skid row”), and religious missions and relief centers arose to address the area's poverty. (Most of these facilities were demolished by the Yerba Buena Center redevelopment project, discussed below on p. IV.C-11.)

San Francisco-Oakland Bay Bridge Construction

During the Great Depression, two of the largest projects providing employment were the construction of the Golden Gate Bridge and the San Francisco-Oakland Bay Bridge. In the Plan Area, the alignment of the Bay Bridge approach consisted of a concrete viaduct located between Harrison and Bryant Streets that touched down at Fifth Street. Hundreds of properties were demolished along the right-of-way, which extended east to the bridge landing at Rincon Hill. Additional portions of Rincon Hill were also graded at this time. Completion of the Bay Bridge in 1936 strongly influenced the character of the Plan Area. In addition to the demolitions, the viaduct and elevated connector structures physically divided the area. In time, this division would result in perceptible changes in land use, with the northern portion becoming increasingly commercial due to its proximity to downtown, while the area south of the viaduct remained predominantly industrial. Originally, the open lots flanking the viaduct were landscaped with lawns and trees, although these were removed during the 1950s with the construction of the Highway 50 (now I-80) elevated freeway.

The End of the Depression through Redevelopment (1937–1973)

The South of Market area—and particularly along Howard, Folsom, and intersecting streets, remained one of San Francisco's most impoverished areas. World War II created demand for both workers and soldiers and absorbed many of the unemployed and, during the post-war years, the area experienced new light industrial development. However, the freeway era of the 1950s saw a move of manufacturing to suburban locations, and the decline of the Port further depressed the neighborhood.

Increasingly, portions of the South of Market area were characterized as blighted, with underutilized manufacturing facilities and a population primarily composed of the poor, elderly, and immigrants. These conditions proved ripe for redevelopment boosters, who would seek to extend the central business district deeper into the South of Market area—largely through the wholesale demolition and redevelopment of existing properties. This process took decades to play out, ultimately resulting in the most extensive reshaping of the area's physical and social fabric since the 1906 earthquake and fire.

Despite the recovery from the Great Depression in the late 1930s, new construction continued to be restrained, although some commercial property owners sought to update their buildings' storefronts and façades. Prominent examples of such complete façade remodels in the Plan Area and vicinity include the former Claus Spreckels/San Francisco Call building at 703 Market Street, the National Dollar Store at 929-931 Market Street, and the Atlas Building at 602-606 Mission Street. Very little construction occurred during the 1940s due to the onset of World War II, though new construction picked up in the 1950s. There are today approximately 120 buildings in the Plan Area that were constructed between 1937 and 1973, and fully one-fourth of these, mostly light industrial buildings, were built between 1954 and 1958. Other buildings were remodeled in Moderne or International styles. However, almost none of the new buildings constructed in the Plan Area during the post-war era were residential, likely due to the neighborhood's industrial character, as well as the presence of the new elevated freeway. Also during the post-war era, auto traffic led to increasing congestion on city streets, in particular around the Bay Bridge on- and off-ramps. Auto related uses, such as parking lots and garages, were created to accommodate the increase in automobile traffic.

Yerba Buena Center Redevelopment

Given its proximity to downtown, its aging building stock and impoverished population, the South of Market area was among the first areas in San Francisco targeted for redevelopment. In 1953, the San Francisco Redevelopment Agency (SFRA) announced plans to redevelop more than 18 blocks generally bounded by Mission, Second, Folsom, and Eighth Streets. A year later, a new “San Francisco Prosperity Plan” was put forth by the influential real estate magnate Benjamin Swig to redevelop an area closer to downtown. The Prosperity Plan, prepared by local architect John Carl Warnecke, called for the clearance of six blocks bounded by Mission, Third, Harrison, and Fifth Streets for the construction of a convention center, high-rise office buildings, a transportation terminal, a luxury hotel and shopping center, a football stadium, and a parking garage for 16,000 cars. Swig’s plan was opposed by Planning Director Paul Opperman, who said that much of the area was not blighted, and argued redevelopment should be left to the private market. After attracting little support from federal urban renewal authorities, Swig withdrew his plan.

Nevertheless, Swig’s basic idea proved extremely durable, and the Yerba Buena Center Redevelopment Plan ultimately included most of his plan. By 1961, the SFRA had received a planning grant for a plan that, among other things, called for the total removal of residential buildings and unsalvageable commercial buildings, the realignment of streets, and the assembly of parcels to encourage new investment. By this time, the redevelopment area included the area bounded by Market, Second, Harrison, and Fifth Streets. Although early plans called only for “spot clearance” of commercial properties, by 1965, only 15 percent of all buildings were to be retained and the three central blocks in the redevelopment area were to be completely razed, with the exception of St. Patrick’s Church. By 1973, large parts of the central blocks had been leveled.

Ultimately, some 4,000 residents and 700 businesses were displaced by redevelopment activities. However, new low-income housing was incorporated in the redevelopment area through the efforts of the Tenants and Owners Development Corporation (TODCO). Originally a community organization known as Tenants and Owners in Opposition to Redevelopment (TOOR), TODCO incorporated in 1971 as a non-profit housing development organization with the goal of creating permanent subsidized low-income housing units in the Yerba Buena Center redevelopment area. In 1979, TODCO opened its first project, Woolf House, at Fourth and Howard Streets, dedicating it to TOOR co-founder George Woolf. TODCO subsequently built Mendelsohn House at 737 Folsom Street (1987; named for TOOR co-founder Peter Mendelsohn), and Dimasalang House at 50 Rizal Street (1980; now the San Lorenzo Rizal Center), the latter with the Filipino fraternal organization, Caballeros de Dimasalang. TODCO also renovated the Knox Hotel, a 140-unit single room occupancy (SRO) hotel at 241 Sixth Street, in 1994.

The three central blocks of Yerba Buena Center were gradually built out during the 1980s and 1990s, beginning with the Moscone Convention Center (Moscone South) in 1981, followed by Moscone North (1992); Yerba Buena Gardens, including Yerba Buena Center for the Arts (1993); the San Francisco Museum of Modern Art (1995); the San Francisco Children’s Museum (1998), along with the historic carousel, a bowling alley and ice rink, and a child care center on Moscone South; Moscone West (2003); and the Contemporary Jewish Museum (2008); along with the Marriott Marquis, Westin, and Four Seasons hotels. Housing—both market-rate and affordable—and office buildings were developed on the surrounding blocks within the redevelopment area. In 2012, the Planning Commission approved a 235,000-square-foot expansion to the San Francisco Museum of Modern Art at 151 Third Street that, when completed in 2016, more than doubled the Museum’s exhibit space. Finally, in 2014, the Planning Commission approved expansion and reconfiguration of Moscone Center North

and South, in a project that will increase gross square footage by about 20 percent, from 1.2 million square feet to 1.5 million square feet, will include vertical additions on both sides of Howard Street, and will renovate the Yerba Buena Center Children's Garden atop Moscone South. Construction began in 2015 and is anticipated to be complete in 2018.

Filipino Communities

Uncertainty about the future of the South of Market area resulted in rents remaining very low during the 1960s through the 1980s, attracting immigrants and other marginalized groups. As described in the *San Francisco Filipino Heritage – Addendum to the South of Market Historic Context Statement*, the establishment of Filipino ethnic enclave in the area was the result of a combination of factors that included inexpensive housing, proximity to both the waterfront and service industry jobs downtown, two Catholic parishes, and an established multi-ethnic population.⁹¹ Likewise, many Filipinos relocated to the South of Market area as the expansion of the Financial District to the north and west resulted in the demolition of numerous businesses and residential hotels along Kearny and adjacent streets, an area then known as Manilatown.

The Filipino population in the neighborhood was concentrated between Market, Third, Brannan, and Eighth Streets during the 1960s and 1970s. The Filipino community grew substantially following the passage of the Immigration Act of 1965, and many newly arrived Filipino immigrants made their first home in the South of Market, which came to be known as "Central City." In time, various organizations focused on immigrant services were established, including the Filipino Education Center (FEC) located in the Plan Area. The FEC opened in 1972 at 390 Fourth Street (later moving to 824 Harrison Street) and provided classroom education to non-English speaking children from kindergarten through 12th grade. A new Bessie Carmichael School/FEC was built for grades K-5 at 375 Seventh Street (a block west of the Plan Area) in 2004, with the Harrison Street campus now serving as the campus' middle school; together, the two facilities comprise the only public school in the South of Market. An important Filipino site is the Mint Mall, a mixed-use building at 953 Mission Street that was purchased by the Nocon family in the 1970s. Since that time, the apartments have largely been occupied by newly arrived Filipino families, while the ground floor commercial space has provided a home for numerous Filipino community organizations, such as the West Bay Pilipino Multi-Service Center (now on Seventh Street, a block west of the Plan Area), the South of Market Employment Center, Bayanihan Community Center (now located in the Bayanihan House at 1010 Mission Street, just west of the Plan Area), and Bindlestiff Studio theater (now on Sixth Street). Arkipelago Books was also established in the lower level of the Mint Mall in 1998, although the store later moved to Bayanihan House. Other Filipino-related establishments in the area include the Filipino American Arts Exposition, Pilipino Senior Resource Center, Filipino Senior Citizens' Club, and Manila Market, all clustered around the intersection of Mission and Sixth Streets; the Filipino Cultural Center and St. Patrick's Church, on Mission near Fourth Street; San Lorenzo Ruiz Center and its Lipi Ni Lapu Lapu mural, affordable senior housing in an enclave of streets named for Filipino heroes, between Folsom, Third, Harrison, and Fourth Streets; and the Gran Oriente Filipino Lodge and Gran Oriente Masonic Temple, both on South Park. In 2011, the Western SoMa Citizens Planning Task Force proposed a Filipino Social Heritage Special Use District (SUD) for an area that included a portion of the Plan Area north of Harrison Street. For the Filipino community within SoMa, social heritage is an important part of

⁹¹ Page & Turnbull, *San Francisco Filipino Heritage – Addendum to the South of Market Historic Context Statement*, prepared for San Francisco Planning Department, 2013.

local, regional and world history. Although the SUD has not been adopted, the Task Force report included identification and mapping of Filipino cultural assets according to grassroots methodologies for identification and analysis, along with community input.

Cultural heritage assets are not necessarily eligible to be considered as historical resources under CEQA. As described in detail under Regulatory Setting, p. IV.C-46, below, only tangible cultural heritage *properties* (e.g., buildings) can be eligible for listing on local, state, and federal registries of historic properties and thus deemed a historical resource under CEQA, while intangible cultural heritage *assets* cannot. While certain Filipino cultural assets in the Plan Area might be eligible to be determined historical resources, none have been identified to date. The above-noted Filipino Heritage addendum to the *South of Market Historic Context Statement* likewise identified numerous Filipino community cultural assets. In April 2016, the Board of Supervisors established the SoMa Pilipinas—Filipino Cultural Heritage District, covering a large part of the South of Market neighborhood and bounded by Market, Second, Brannan, and 11th Streets and provided the direction to develop “a strategic and implementation plan to set policies that promote community development and stabilization, and increase the presence and visibility of the district.”⁹²

Lesbian, Gay, Bisexual, Transgender and Queer (LGBTQ) Communities

Other groups on the margins of mainstream society, such as artists, activists, and sexual minorities, also moved to the South of Market area, including the Plan Area. The primarily industrial and commercial emphasis of the Plan Area, and the South of Market area more broadly, attracted nightlife and other entertainment uses with little friction compared to more residential neighborhoods.

Active lesbian, gay, and transgender communities began to emerge in the North Beach and Tenderloin neighborhoods following the repeal of Prohibition in 1933.⁹³ The influx of thousands of war workers and military personnel during the Second World War provided new venues and opportunities for gays and lesbians to gather and socialize. Sites in the South of Market area associated with gay culture in the 1940s and 1950s include the Third Street Baths at 85 Third Street (no longer extant) and the basement of the Lankershim Hotel at 55 Fifth Street. By 1956, the two most prominent national organizations dedicated to improving the social status of gays and lesbians were both headquartered in the Plan Area: the Mattachine Society and the Daughters of Bilitis, both located at 693 Mission Street (no longer extant).

Coinciding with an increasing out-migration of native San Franciscans to the suburbs, the growing LGBTQ communities began to take up residence in parts of the city that previously had little or no LGBTQ presence. Beginning in the 1960s and accelerating during the 1970s, various LGBTQ-oriented business establishments opened in the decaying industrial belt in the South of Market area. Although the area eventually became known primarily for its leather subculture, the South of Market area featured a variety of establishments, including bars, bathhouses, and dance clubs, that catered to a cross-section of San Francisco’s diverse LGBTQ community.

⁹² Board of Supervisors Resolution No. 119-16, adopted April 12, 2016; approved by the Mayor April 22, 2016.

⁹³ San Francisco Planning Department, *Citywide Historic Context Statement for LGBTQ History in San Francisco*, Final Draft, October 2015; adopted by the Historic Preservation Commission November 18, 2015.

In 1962, The Tool Box opened at Fourth and Harrison Streets as the first leather bar located in the South of Market area (the building was torn down in 1971 by redevelopment). The Tool Box was one of San Francisco's earliest and most popular leather bars. In 1964, it was featured in a highly influential Life Magazine article that called San Francisco the "Gay Capital of America." The Tool Box site may also be archeologically significant.⁹⁴ In 1966, Folsom Street emerged as the main street for leather culture in San Francisco with the opening of Febe's and the Stud. Also in 1966, the Society for Individual Rights (SIR) established perhaps the first gay community center in the country at 83 Sixth Street.

By the 1970s, a large number of LGBTQ establishments were clustered in the vicinity of Howard and Folsom Streets between Seventh and Tenth Streets. Within the Plan Area, some of the extant businesses with the longest association with the LGBTQ community include The End Up bar at 401 Sixth Street (1973-present) and 960 Folsom Street, which was associated with the leather community during the 1970s and 1980s and is today an adult store. Another important LGBTQ business establishment in the Plan Area was the Trocadero Transfer, an after-hours dance club that operated until 2000 in a warehouse at 520 Fourth Street. Another currently extant LGBTQ business in the Plan Area is Blow Buddies Bath House at 933 Harrison Street.

In 2011, the Western SoMa Citizens Planning Task Force proposed an LGBTQ Social Heritage Special Use District for an area extending from Third to Twelfth Streets and Mission to Bryant Streets. Although the SUD was not adopted, the Task Force report, "Recognizing, Protecting and Memorializing South of Market LGBTQ Social Heritage Neighborhood Resources," identified more than 60 cultural assets with importance to the LGBTQ community, including some three dozen bars, bathhouses, and sex clubs, along with retail stores, restaurants, newspapers, service and religious organizations, and other assets. In November 2015, the Historic Preservation Commission adopted a *Citywide Historic Context Statement for LGBTQ History in San Francisco*, a document prepared by a team of historians, in partnership with the GLBT Historical Society. The context statement, which builds on an earlier context statement, "Sexing the City: The Development of Sexual Identity Based Subcultures in San Francisco, 1933-1979," examines the formation and development of the city's LGBTQ communities from their roots in the 19th century through the AIDS crisis in the 1980s.

The Plan Area has a history of LGBTQ businesses and other establishments; however, these assets are not necessarily eligible to be considered as historical resources under CEQA. While certain LGBTQ assets in the Plan Area might be eligible to be determined historical resources, none have been identified to date. The Plan includes an objective to "support the preservation, recognition, and well-being of the neighborhood's cultural heritage resources," and includes a policy to "facilitate the creation and implementation of other social or cultural heritage strategies, such as for the LGBTQ community," by supporting efforts to implement the recommendations of the LGBTQ Historic Context Statement.

African Americans in the Plan Area

While few African Americans lived in the Plan Area in the 19th century, the need for labor during the post-earthquake reconstruction of San Francisco, as well as labor shortages during World War I, resulted in a modest African American community in the South of Market area by the early 20th century. Railroad workers

⁹⁴ *Ibid*, 339

were an important part of this population, and many lived near the Southern Pacific depot at Third and Townsend Streets, including in the Pullman Hotel at 236 Townsend Street (extant).

Other African Americans likely worked in manufacturing or as laborers and lived in the neighborhood's numerous residential hotels. Maritime work also emerged as another source of employment, particularly after the 1934 Waterfront Strike when the International Longshoreman's Association opened the union to African Americans. By 1940, Census data indicates that the South of Market neighborhood contained approximately 250 African American residents, nearly two-thirds of them men, concentrated between the waterfront and Third Street and in an area bounded by Howard, Harrison, Third and 11th Streets. By far, however, most African Americans living in San Francisco at this time resided in the Western Addition.

The demand for labor during World War II and the post-war boom resulted in a strong surge in the neighborhood's African American population. By 1970, a census tract bounded by Harrison, Townsend, Third and 11th Streets was more than 40 percent African American.⁹⁵ The San Francisco African American Citywide Historic Context Statement examines the contribution African Americans have made to San Francisco's economic, cultural, and built environment.

Historic Architectural Resources in the Plan Area

Historic Status

As stated previously, a building or other structure is a historical resource under CEQA if it is listed in, or determined eligible for listing in, the California Register; listed in a local register of historical resources, such as *Planning Code* Article 10 and Article 11 (both described below); identified in a historical resources survey that meets state requirements; or is otherwise determined to have historic significance. **Figure IV.C-2, Historical Resources in the Plan Area and Vicinity**, shows existing and eligible historical resources in the Plan Area. These resources are listed in Table APX-C-1, in Appendix C.

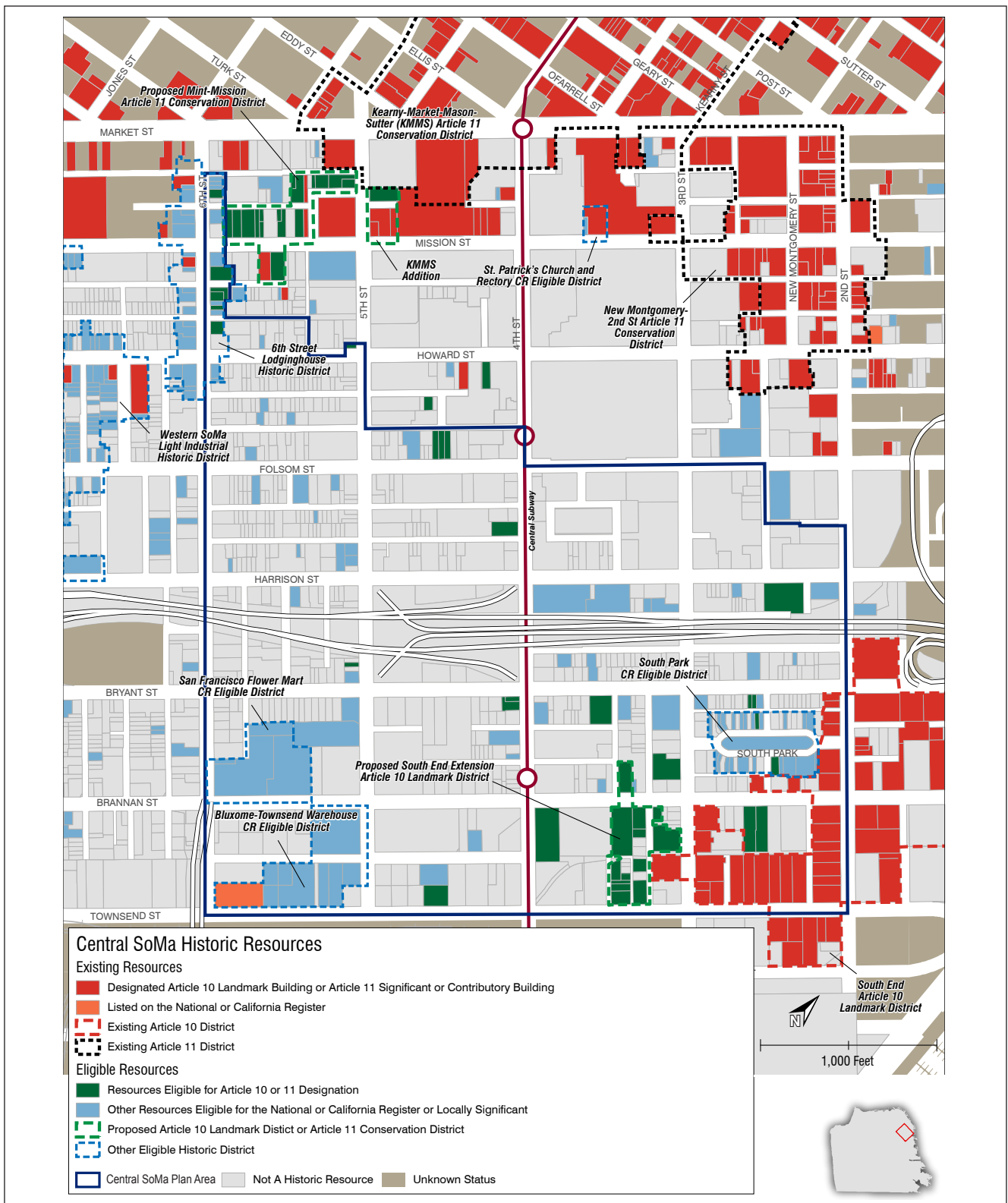
National Register of Historic Places

The National Register is the official federal list of buildings and sites of local, state, or national importance. The National Register is administered by the National Park Service, an agency of the United States Department of the Interior. Listing of a property in the National Register does not prohibit demolition or alteration of that property but does denote that the property is a resource worthy of recognition and protection. Typically, resources 50 years of age and older are eligible for listing in the National Register if they meet any one of four criteria of eligibility and if they sufficiently retain integrity.⁹⁶ The criteria are:

- **Criterion A (Event):** Properties associated with events that have made a significant contribution to the broad patterns of our history;
- **Criterion B (Person):** Properties associated with the lives of persons significant in our past;

⁹⁵ San Francisco Planning Department, *San Francisco African American Citywide Historic Context Statement*, January 2016. Adopted by the Historic Preservation Commission May 4, 2016.

⁹⁶ Resources under 50 years of age may be eligible under exceptional circumstances or in connection with a district.



SOURCE: San Francisco Planning Department

1500 Mission Street; Case No. 2014-000362ENV

Figure IV.C-2
Historical Resources in the Plan Area and Vicinity

- **Criterion C (Design/Construction):** Properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant distinguishable entity whose components lack individual distinction; and
- **Criterion D (Information Potential):** Properties that have yielded, or may be likely to yield, information important in prehistory or history. The criterion is generally reserved for archeological resources or ruins.

Integrity must also be addressed when determining the eligibility of a resource for listing in the National Register. A property must retain certain intact physical features in order to convey its significance under one or more of the National Register criteria. Integrity is judged on seven aspects: location, design, setting, workmanship, materials, feeling, and association.

The San Francisco Planning Department treats National Register-listed properties as historical resources for purposes of CEQA review.

Approximately 20 buildings in the Plan Area and vicinity are listed in the National Register, either individually or as a contributor to a historic district. Seven buildings in the Plan Area and vicinity individually listed: the 1869 Old Mint at 88 Fifth Street, the 1881 Jessie Street Substation at 220 Jessie Street, the 1907 Haas Candy Factory at 54 Mint Plaza, the 1907 Carroll and Tilton Building at 735 Market Street, and the 1912 Hale Brothers Department Store at 901 Market Street, along with three buildings across Stevenson Street that front on Mint Alley (formerly Jessie Street) or Fifth Street. Most of the remaining buildings listed in the National Register are contributors to the South End Landmark District, identified both in the National Register and in Article 10 of the *Planning Code*. Each of these resources is listed in Table APX-C-1 in Appendix C.

California Register of Historical Resources Listings

The California Register is an inventory of significant architectural, archeological, and historical resources in the State of California. It is administered by the California Office of Historic Preservation. Resources can be listed in the California Register through a number of methods. National Register-listed and-eligible properties are automatically listed in the California Register, as are all State Historical Landmarks designated after 1961 and certain others. These resources are considered historical resources by the San Francisco Planning Department for the purposes of CEQA. The evaluative criteria used by the California Register for determining eligibility closely parallel those developed by the National Park Service for the National Register, but include relevance to California history. As with the National Register, a resource must also retain sufficient integrity to be eligible for listing. In order for a property to be eligible for listing in the California Register, it must meet one or more of the following criteria:

- **Criterion 1 (Event):** Resources that are associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
- **Criterion 2 (Person):** Resources that are associated with the lives of persons important to local, California, or national history.
- **Criterion 3 (Design/Construction):** Resources that embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of a master, or possess high artistic values.

- **Criterion 4 (Information Potential):** Resources or sites that have yielded or have the potential to yield information important to the prehistory or history of the local area, California, or the nation.

There are approximately 60 buildings in the Plan Area and vicinity that are formally listed in the California Register.⁹⁷ Many of these buildings were assigned California Historical Resource Status Codes by prior historic studies, most notably, the South of Market Historic Resource Survey. There is one California State Historical Landmark in the Plan Area vicinity: the Old Mint (California Landmark No. 875). Each of these resources is included in Table APX-C-1 in Appendix C.

San Francisco Landmarks and Locally Significant Properties

Article 10 Landmarks and Article 11 Building and Conservation Districts are considered historical resources by the San Francisco Planning Department for the purposes of CEQA.

Article 10 Landmarks

Article 10 of the *Planning Code* (Preservation of Historical, Architectural and Aesthetic Landmarks) provides for official designation of landmarks and historic districts throughout the city that have “a special character or special historical, architectural or aesthetic interest or value.” Landmarks can be buildings, sites, or landscape features. Historic districts can be areas constituting a distinct section of the City. Landmark status provides the greatest level of protection for historical resources in San Francisco; in general, alteration of a landmark requires approval by the Historic Preservation Commission of a Certificate of Appropriateness. Currently, the Central SoMa Plan Area vicinity includes five individual City Landmarks: Saint Patrick’s Church (Landmark No. 4); The Palace Hotel Garden Courtyard (No. 18); the Jessie Street Substation (No. 87); the Sharon Building (No. 163); and the Old Mint (No. 236). The Plan Area includes portions of the South End Landmark District, bounded by Stillman, First, Ritch, and King Streets. Each of these resources is listed in Table APX-C-1 in Appendix C.

Article 11 Buildings and Conservation Districts

Article 11 of the *Planning Code* (Preservation of Buildings and Districts of Architectural, Historical, and Aesthetic Importance in the C-3 Districts) governs approximately 430 downtown buildings, including a small portion of the Plan Area. There are five ratings for buildings under Article 11. Category I and II buildings (“Significant Buildings”) are the most important. Contributory Buildings have a lesser level of significance and are classified as Category III or Category IV, depending on whether they are within an identified conservation district. Buildings in Categories I through IV are considered historical resources under CEQA. Unrated or non-contributory buildings are assigned to Category V.

An important provision of Article 11 is the establishment of conservation districts, defined as “substantial concentrations of buildings that together create subareas of special architectural and aesthetic importance.” Conservation districts are considered historical resources for purposes of CEQA. There are six conservation districts located throughout downtown San Francisco, two of which are located partially within the Plan Area vicinity. The New Montgomery-Mission-Second Street Conservation District is located north of the Plan Area

⁹⁷ San Francisco Planning Department, *Central SoMa Historic Context Statement and Historic Resources Survey*, March 2015 (see footnote1, p. 159); Appendix A, p. 113.

and primarily includes properties along New Montgomery Street and Second Street between Market and Howard Streets, as well as on Mission Street from east of Second Street to west of Third Street. The Kearny-Market-Mason-Sutter Conservation District is centered on Union Square, but includes a few properties along the south side of Market Street between Third and Sixth Streets. There are approximately 113 buildings with Article 11 ratings of I through V in the Plan Area.

Previous Architectural Surveys

A number of previous historical resources surveys have, together, evaluated most of the Plan Area. Some of these surveys constitute local registers of historical resources, having been formally adopted by the Board of Supervisors and/or the Planning Commission. Buildings identified in these surveys as having historical significance are considered historical resources under CEQA.⁹⁸ Other surveys have not been formally adopted by the City, and therefore are not considered local registers of historical resources. Buildings identified as historically significant in those surveys are considered potential historical resources, for which further consultation and review is required prior to a determination as to whether the building is a historical resource.⁹⁹ Historical resource surveys applicable to the Plan Area are described below.¹⁰⁰ Properties previously surveyed by City-adopted surveys were not re-evaluated in the Central SoMa Survey.

Junior League of San Francisco Architectural Survey, 1968

Here Today: San Francisco's Architectural Heritage (Here Today) is one of San Francisco's first architectural surveys, undertaken by the Junior League of San Francisco and published in book form in 1968. Although the *Here Today* survey did not assign ratings, it did provide brief historical and biographical information about what the authors believed to be significant buildings. The findings of the survey were adopted by the Board of Supervisors on May 11, 1970 (Resolution No. 268-70), and resources listed in *Here Today* are therefore considered to be historical resources for purposes of CEQA review.

The *Here Today* survey included the South of Market area, but only a handful of buildings were identified in the Central SoMa Survey area. Overall, 13 properties in the Plan Area and vicinity are mentioned in *Here Today*; all but one—310 Townsend Street—are otherwise identified as historical resources. These properties are listed in Table APX-C-1 in Appendix C).

The book does list a handful of significant buildings within the South of Market Area, all four of which are 1906 Earthquake survivors: the Old U.S. Mint at 88 5th Street, the U.S. Post Office and Court of Appeals at 7th and Mission streets, St. Patrick's Church at 756 Mission Street, and the Audifred Building at 11 Mission Street. Only one industrial building is included—the PG & E Jessie Street Substation at 222-6 Jessie—most likely because it was designed by architect Willis K. Polk.

⁹⁸ Included in the list of designated historical resources are those properties identified in *Planning Code* Article 10 (City Landmarks) and Article 11 (historical resources in the C-3 [Downtown] zoning districts, including portions of the South of Market area formerly zoned C-3, generally bounded by Mission, Howard, Sixth, and Tenth Streets, and subsequently designated as the South of Market Extended Preservation District).

⁹⁹ San Francisco Preservation Bulletin 16, "CEQA Review Procedures for Historic Resources." Available at <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=5340>, accessed August 29, 2016.

¹⁰⁰ Much of the language describing the surveys is taken from Preservation Bulletin 11, "Historic Resource Surveys."

San Francisco Department of City Planning Architectural Survey, 1976

The 1976 Architectural Quality Survey is what is referred to in preservation parlance as a “reconnaissance” or “windshield” survey. The survey reviewed the entire city to identify and rate what was thought to be the top 10 percent of architecturally significant buildings and structures. Twelve separate aspects of the selected 10,000 buildings were evaluated on a scale of -2 (detrimental) to +5 (extraordinary), with a summary rating of 0 to 5 assigned to the building as a whole. Buildings rated with a summary rating of 3 or higher in the 1976 survey represent approximately the top two percent of San Francisco’s buildings in terms of architectural significance. Summary ratings of 0 or 1 are generally interpreted to mean that the property has some contextual importance. Properties were assessed only for architectural merit; other elements of historic significance were not considered. The Architectural Quality Survey examined approximately 105 properties in the Plan Area and vicinity, of which 25 were rated 3 or higher. The survey was not formally adopted, and inclusion in the 1976 survey rating is an indication that the Planning Department has additional information on the building, but not that the building is a historical resource under CEQA. Further research is necessary to determine whether a property included in the 1976 survey qualifies as a historical resource.

San Francisco Architectural Heritage Surveys, 1979

San Francisco Architectural Heritage (Heritage) is the City’s oldest not-for-profit organization dedicated to increasing awareness and advocating for preservation of San Francisco’s unique architectural heritage. Heritage has sponsored or was commissioned by the City to conduct several historical resource inventories in San Francisco, including surveys for area plans in Downtown, the Van Ness Corridor, Civic Center, Chinatown, the Northeast Waterfront, and South of Market, as well as surveys in the Inner Richmond District and the Dogpatch neighborhood. The earliest and most influential of these surveys was the Downtown Survey. Completed in 1977-1978 for Heritage by Michael Corbett and published in 1979 as the book *Splendid Survivors*, this survey serves as the intellectual foundation for much of the historical discussion in the Downtown Plan. The methodology improved upon earlier surveys inasmuch as it consists of both intensive field work and thorough archival research. Buildings were evaluated using the Kalman Methodology, a pioneering set of evaluative criteria based on both qualitative and quantitative factors. A team of outside reviewers analyzed the survey forms and assigned ratings to each of the pre-1945 buildings within the survey area. The ratings include “A” (highest importance), “B” (major importance), “C” (Contextual Importance), and “D” (minor or no importance). The Heritage surveys have not been formally adopted by the City, and thus a building listed by Heritage is not a historical resource under CEQA by virtue of Heritage listing alone; however, many Heritage-rated buildings have been otherwise determined to be historical resources. Approximately 265 buildings in the Plan Area and vicinity were assigned Heritage ratings. Of these, approximately 60 were given ratings of either A or B.

Unreinforced Masonry Building Survey, 1990

In response to the 1989 Loma Prieta earthquake, the San Francisco Landmarks Preservation Advisory Board (LPAB; precursor to the Historic Preservation Commission) initiated a survey of all known unreinforced masonry buildings in San Francisco. Anticipating that earthquake damage and risk remediation would likely result in the demolition or extensive alteration of many older masonry buildings, the LPAB sought to establish the relative significance of all unreinforced masonry buildings in San Francisco. The completed report, “A Context Statement and Architectural/Historical Survey of Unreinforced Masonry Building (UMB)

Construction in San Francisco from 1850 to 1940,” was completed in 1990. The UMB survey recapitulated previous ratings of the properties included but did not assign new ratings, although DPR 523 forms were completed for a number of properties. Approximately 160 buildings in the Plan Area and vicinity were included in the survey. The UMB survey has not been formally adopted by the City and is thus not considered a local register of historical resources for purposes of CEQA review.

Historic Architectural Evaluation Report for the Central Subway, 2007

The Historic Architectural Evaluation Report for the Central Subway, Phase 2 of the Third Street Light Rail Project, was completed in 2007 by Garcia and Associates. The study—a resource document not adopted by the City—examined properties in the Area of Potential Effect, which included the first row of buildings on either side of the proposed subway alignment—in the Plan Area, the east and west sides of Fourth Street. This included properties located along Fourth Street in the Central SoMa Plan Area, as well as properties located adjacent to an alternative proposed alignment along Third Street. The study found two buildings in the Central SoMa Plan Area to be individually eligible for the National Register: an industrial loft building at 601 Fourth Street (1916) and the Keystone Hotel at 54 Fourth Street (1914). It also concluded that the building at 166 South Park should be included as an eligible contributor to the South Park Historic District. These resources are considered to be historical resources for purposes of CEQA review. Each of these three buildings is identified as a historical resource in Table APX-C-1 in Appendix C.

Transit Center District Survey, 2008

The Transit Center District Survey was completed in 2008 by Kelley & VerPlanck Historical Resources Consulting, with an update undertaken by Carey & Co. in 2010. Through Motion No. 0149, the survey update was adopted by the Historic Preservation Commission in February 2012. The survey examined the Transit Center District Plan Area and surrounding blocks in an area roughly bounded by Market Street on the north, Folsom Street on the south, Main Street on the east, and Third Street on the west. As a result of this survey, the Historic Preservation Commission recommended, and the Board of Supervisors approved, expansion and renaming of the New Montgomery, Mission and Second Street Conservation District (which is north of the Plan Area), pursuant to Article 11 of the *Planning Code*. In addition, the Commission approved a finding of eligibility for the California Register of a small Tehama Street Historic District east of Third Street (outside the Plan Area). Resources listed in the Transit Center District Survey are considered to be historic resources for the purposes of CEQA review.

South of Market Historic Context Statement and Historic Resource Survey, 2009

The South of Market Historic Context Statement was commissioned by the San Francisco Planning Department and completed by Page & Turnbull. Completed in 2009, the historic context statement examined most of the South of Market area, roughly bounded by Market Street to the north, Mission Channel to the south, 13th Street to the west, and San Francisco Bay to the east. The historic context statement was used to inform a historic resource survey designed to provide specific information about the location and distribution of historical resources within the SoMa Area Plan and Western SoMa Community Plan Area. Through Motion No. 103, the SoMa Historic Resource Survey (“SoMa Survey”) was adopted by the Historic Preservation Commission in February 2011.

The SoMa Survey examined 2,141 properties. Department of Parks and Recreation 523A—Primary Record forms were produced for 1,241 properties, and DPR 523B—Building, Structure, Object forms were prepared for 128 properties.¹⁰¹ In addition, five DPR 523D—District Records were prepared. Five groupings of historically significant properties were identified as eligible for designation as historic districts:

- The **Western SoMa Light Industrial and Residential Historic District** was the largest identified historic district and encompasses a total of 721 properties. No part of the historic district is included within the Plan Area; however, the proposed street network changes would occur in this district. In general terms, the district boundaries encompass the area bounded by Mission Street to the north, Sixth Street to the east, Harrison Street and Bryant Street to the south, and 13th Street to the west. The district was determined to be significant for its association with industrial and residential reconstruction and has a period of significance from 1906 to 1936.
- The **Sixth Street Lodginghouse District** had been previously identified and recorded on a DPR 523D form in 1997. The Sixth Street Lodginghouse District consists of 43 total properties, including 33 SRO residential hotels, or lodginghouses, built from 1906 through 1913, along with a few low-rise commercial buildings. The district runs along Sixth Street stretching from a point near Market Street to buildings a short distance south of Howard Street. The district was proposed as eligible for the National Register of Historic Places for its association with the working life of laborers, sailors, and the elderly who inhabited the lodginghouses. The eastern edge of the historic district is located at the northwestern corridor of the Plan Area.
- The **South Park Historic District** encompasses 37 properties immediately adjoining South Park, and is wholly contained within the Plan Area. This district features a mix of industrial, commercial, and residential buildings constructed between 1906 and 1935 that are unified in terms of scale, materials, architectural styles, and relationship to the street and park. The district also has associations with both the Japanese and Filipino communities.
- The **South End Landmark District Addition** is composed of 19 properties located in the Plan Area, roughly bounded by Brannan Street to the north, Third Street to the east, Townsend Street to the south, and Lusk Street to the west. The district comprises an addition to the National Register-eligible South End Historic District and an eligible addition to the local (Article 10) South End Landmark District, significant for its associations with industrial development. (The addition has not been formally added through amendment of the *Planning Code*.) The additional contributing resources were identified as compatible with the “warehouse architectural form” theme of the South End Landmark District.
- The **Bluxome and Townsend Warehouse Historic District** is located entirely within the Plan Area and consists of 10 industrial warehouse buildings significant for their association with industrial development. The buildings display a cohesive relationship in terms of scale, style, and relationship to the street, and were all constructed between 1912 and 1936. The district is eligible for listing at the local (Article 10) and National Register levels.

By virtue of the Historic Preservation Commission’s 2011 adoption of the SoMa Survey, the historic districts noted above are considered historical resources for purposes of CEQA. As noted, in general, previously surveyed properties that were determined to be historical resources were not re-surveyed in the Central SoMa Survey.

¹⁰¹ A DPR 523A form provides basic information concerning a historical resource, while a DPR 523B form provides additional detail and is typically used for resources warranting added description. As noted above, a DPR 523D form concerns a historical resource in a district.

Central SoMa Historic Resource Survey, 2016

In October 2013, the San Francisco Planning Department prepared a historic resource survey and context statement, namely the Central SoMa Context Statement and Historic Resource Survey (Central SoMa Survey), to aid in the identification and evaluation of previously undocumented age-eligible buildings (more than 45 years old) located within the Plan Area and vicinity. The Central SoMa Survey area is bounded by Market Street on the north, 2nd Street on the east, Townsend Street on the south, and 6th Street on the west. The Plan Area is contained within the larger survey area; however, the historic resource survey information for the entire Central SoMa Survey area is presented here because the street network changes and open space improvements extend beyond the Plan Area. The Central SoMa Context Statement and Central SoMa Survey was updated in 2015 and serves as the latest resource for Plan Area historical resources. It includes a discussion of various property types, historic significance, and the integrity of potential historical resources. The context statement informed a historic survey that assigned historical resource status codes to Plan Area buildings not previously documented. The area surveyed includes the Yerba Buena Center redevelopment area, where few buildings more than 45 years old are located, as well as an area bounded by Fifth, Sixth, Market, and Natoma Streets, which had the greatest concentration of previously unsurveyed age-eligible buildings just outside of the Plan Area. Another small cluster of buildings included in the survey is located in the southwest portion of the Plan Area and confined to parcels bounded by Fifth, Sixth, Bryant, and Brannan Streets. The Central SoMa Survey was presented to the Historic Preservation Commission for review and adoption in March 2016, and then submitted to the California Office of Historic Preservation for inclusion in the California Historical Resources Information System, the statewide database of historical resources. The Historic Preservation Commission adopted the Central SoMa Historic Context Statement and Historic Resource Survey, per Motion No. 0277, on March 15, 2016. Therefore, the Central SoMa Survey is considered to be a qualified historic resource survey for the purposes of CEQA.

The Central SoMa Historic Resource Survey examined more than 130 parcels that had not been previously surveyed or for which prior survey information was incomplete. A number of previously un-surveyed sites were not documented, typically because the sites were vacant (i.e., did not contain a building) or the building was not age eligible (i.e., less than 45 years old). The remaining properties were documented in spreadsheet format to create a property information catalog. This catalog includes baseline information including the assessor's block and lot, address, and year built, as well as any previous historic documentation. A variety of architectural attributes were captured for each property, including the number of stories, architectural style, ornamental features, and apparent architectural integrity. Preliminary historical resource status codes were then assigned to each property.

Of the properties surveyed, a number of them were determined to be individually eligible for the local listing, California Register, and/or National Register (see Table APX-C-1 in Appendix C). The survey also identified three new California Register-eligible historic districts including: the Mint-Mission Historic District, St. Patrick's Church and Rectory Historic District, and the San Francisco Flower Mart Historic District.

In addition to identifying individual historical resources and potential historic districts, the survey also identified one property in the Plan Area that appears eligible for addition to the previously identified National Register-eligible Sixth Street Lodginghouse Historic District (see discussion, below). In addition, the survey also found one more property eligible as a contributor to the South End Landmark District Addition and one more property eligible as a contributor to the Bluxome and Townsend Warehouse Historic District.

Mint-Mission Historic District

The Central SoMa Survey identified the Mint-Mission Historic District, which includes buildings north, west, and southwest of the Old Mint, between Stevenson and Minna Streets in the northwestern portion of the Plan Area. The district contains 19 contributing buildings (see **Table IV.C-1, Mint-Mission Historic District**), all constructed between 1906 and 1930, and 2 non-contributing buildings or parcels. The Mint-Mission Historic District is composed of small- to mid-scale industrial, residential, and commercial buildings. These include several warehouses and industrial lofts, three residential hotels with commercial ground floors, and a former bank. The district is shown in Figure IV.C-2, p. IV.C-16.

TABLE IV.C-1 MINT-MISSION HISTORIC DISTRICT

Parcel(s)	Address	Year Built	Historic Name	District Contrib?	Survey Code ^a	Current Article 11 Status
3704/003	44–48 Fifth St	1907	Oakwood Hotel	Yes	3CB	V – Unrated
3704/010	12 Mint St	1919		No	6L	V – Unrated
3704/012	66 Mint St; 932 Mission St	1916	Remedial Loan Association	Yes	3CB	I – Significant
3704/013	936–940 Mission St	1915	Land Hotel / Chronicle Hotel	Yes	3CD	V – Unrated
3704/017	948–952 Mission St	1907	Piedmont Hotel / Alkain Hotel	Yes	3CB	V – Unrated
3704/018	956–960 Mission St	1910		No	6L	V – Unrated
3704/019	966 Mission St	1922		Yes	3CD	No rating
3704/020	968 Mission St	1930	Toledo Scale Co.	No ²	3CD	V – Unrated
3704/021	972–976 Mission St	1925	Dohrmann Hotel Supply Company	Yes	3CD	No rating
3704/022	980–984 Mission St	1924		Yes	3CD	No rating
3704/024	481 Jessie St	1907	Hulse Bradford Carpets & Draperies	Yes	3CD	No rating
3704/028	471 Jessie St	1912		Yes	3CD	V – Unrated
3704/029	431 Jessie St	1912		Yes	3CD	No rating
3704/034	14–16 Mint Plz.; 54 Mint Plz	1907		Yes	1S, 3CD	I – Significant
3704/035	440–444 Jessie St	1924	Wobber's Inc., Printing & Engraving	Yes	3CB	No rating
3704/059	443 Stevenson St	1914		Yes	3CD	No rating
3704/079	2–4 Mint Plaza	1926	Hale Brothers Warehouse & Offices	Yes	1D, 3CB	No rating
3704/113	10 Mint Plaza	1924		Yes	3CD	No rating
3704/144	6–8 Mint Plaza	1924		Yes	3CD	No rating
3725/087	959–965 Mission St	1906	California Casket Co.	Yes	3CB	II – Significant
3725/088	951–957 Mission St	1916	Ford Apartments	Yes	3CD	No rating

NOTES:

- See Table APX-C-2, in Appendix C, for a list and description of California Historical Resource status codes. In general, Status Code 1 indicates properties listed in the California Register; Status Code 3 indicates properties that appear eligible for listing in the California Register through survey evaluation; and Status Code 6 indicates properties not eligible for listing in the California Register.
- This building is not a contributor because it was constructed outside the district's period of significance; however, the survey found it appears individually eligible for the California Register.

The district appears eligible for the California Register under Criterion 1 (Events) for its association with post-Earthquake reconstruction and the evolution of land use patterns at the northern edge of the South of Market area. Specifically, this district embodies the historic function of the blocks immediately south of Market Street as a transition zone between the large-scale commercial uses along Market Street and the predominately industrial uses to the south. This land use pattern first evolved during the 19th century and was repeated during the rebuilding efforts which followed the 1906 earthquake and fire. With the exception of the New Montgomery-Mission-Second Street Conservation District, there are no other blocks north of Howard Street or east of Sixth Street that so strongly retain this historic mix of early 20th century industrial, residential, and commercial buildings. This district is also unusual in that most buildings are constructed on through-lots and have visible rear elevations.

The district also appears eligible for the California Register under Criterion 3 (Design/Construction), as it features an overall cohesive mix of reinforced concrete and brick masonry buildings featuring Classical Revival style design influences. The use of Classical design elements, more so than any other style, typified early 20th century architecture in San Francisco. Common examples of Classical Revival design include the use of corniced rooflines, frequently with brackets or modillions; dentil moldings; applied cast shield or swag ornaments; and arched openings. These design details are frequently strongest on residential and mixed-use buildings, and less pronounced on industrial buildings.

The Mint-Mission Historic District abuts the Neoclassical-style Old Mint, a National Historic Landmark. The Old Mint is not a contributor to the district, as its construction pre-dates the development of the district by decades. However, the Old Mint serves as an iconic visual backdrop for the east end of the district. Conversely, the district provides an architecturally cohesive setting for the Old Mint. The Historic Preservation Commission concurred in the eligibility of this district as part of its approval of the Central SoMa Survey.

St. Patrick's Church and Rectory Historic District

The Central SoMa Survey identified a California Register-eligible historic district consisting of St. Patrick's Church (City Landmark No. 4; listed on the National Register) and its adjacent rectory and supporting structures, on the north side of Mission Street between Third and Fourth Streets. The church itself is one of a handful of 1906 earthquake and fire survivors in the Plan Area vicinity. The Historic Preservation Commission concurred in the eligibility of this district as part of its approval of the Central SoMa Survey. The district is shown in Figure IV.C-2.

San Francisco Flower Mart Historic District

The Central SoMa Survey identified a California Register-eligible historic district consisting of five interconnected structures that comprise the San Francisco Flower Mart, located on the southern half of the block bounded by Bryant, Fifth, Brannan, and Sixth Streets. Four of the five buildings were completed in 1956 and at least three of those were designed by master architect Mario Ciampi; a fifth building was added in 1967. The Flower Mart appears eligible for the California Register under Criteria 1 and 3 for its associations with San Francisco's floral industry and inter-ethnic commercial cooperation, as well as its purpose-built design by Mario Ciampi. The Historic Preservation Commission concurred in the eligibility of this district as part of its approval of the Central SoMa Survey. This district is shown in Figure IV.C-2.

Potential Additions to the Kearny-Market-Mason-Sutter Conservation District

The Central SoMa Survey revealed the potential for two possible additions, along the northern edge of the Central SoMa Survey area, to the locally designated Kearny-Market-Mason-Sutter Conservation District (see **Table IV.C-2, Potential Additions to Kearny-Market-Mason-Sutter Conservation District**). These buildings relate to the established historical context and architectural character of the conservation district, and are located directly adjacent to the district's southern boundary, outside the Plan Area. Both are larger-scale hotels, and one has an existing Article 11 Category I rating: the Pickwick Hotel at 67-99 Fifth Street (1923). The Hotel Lankershim (now Hotel Zetta) at 55 Fifth Street is not currently designated under Article 11.

TABLE IV.C-2 POTENTIAL ADDITIONS TO KEARNY-MARKET-MASON-SUTTER CONSERVATION DISTRICT

Parcel(s)	Address	Year Built	Historic Name	Proposed Survey Code ^a	Current Article 11 Status
3725/021, 3725/023, 3725/054	67-99 Fifth St; 898 Mission St	1923	Pickwick Hotel	5B	I – Significant
3705/039	55 Fifth St	1913	Hotel Lankershim	5D3	No rating

NOTES:

- a. See Table APX-C-2, in Appendix C, for a list and description of California Historical Resource status codes. In general, Status Code 5 indicates properties recognized as historically significant by local government.

Additions to the Sixth Street Lodginghouse Historic District

One building was identified as an eligible addition to the previously identified Sixth Street Lodginghouse Historic District, identified in 2009 as eligible for the National Register as part of the South of Market Historic Resource Survey (also see discussion of this district below). This building, 481 Minna Street, is located one parcel east of the Plan Area boundary, directly adjacent to the eastern boundary of the Lodginghouse District. The building is shown as a residential hotel on the 1913 and 1950 Sanborn maps, and was constructed within the identified period of significance (1906-1913) for the Lodginghouse District. It was assigned a rating of 3D in the Central SoMa Survey, meaning that it appears eligible for the National Register as a contributor to a National Register district through survey evaluation; this would also make it eligible for the California Register.

Addition to the South End Landmark District Addition

The survey revealed an eligible addition to the previously identified South End Landmark District Addition, described on a DPR 523D (District) form in 2009, as part of the South of Market Historic Resource Survey.^{102, 103} This property, 434 Brannan Street, is a three-story, reinforced concrete industrial building constructed in 1929 for the Scoville Manufacturing Company and designed in the Art Deco style. The property directly faces the southwestern boundary of the South End Landmark District Addition, being located across the street from the

¹⁰² A DPR 523 form is a State of California and Natural Resources Agency Department of Parks and Recreation form used to record a historical resource. The "D" suffix indicates the resource is a District.

¹⁰³ The South End Landmark (formerly, Historic) District is identified in Article 10 of the *Planning Code*, having been originally adopted in 1990 (Ordinance 104-90).

contributing property at 435 Brannan Street. The building was previously assigned a 5S3 rating in the South of Market Historic Resource Survey. It was given a rating of 3D in the Central SoMa Survey, meaning that it is significant both individually and as a contributor to a district that is locally listed, designated, determined eligible, or appears eligible through survey evaluation.

Addition to the Bluxome and Townsend Warehouse Historic District

Survey efforts revealed an eligible addition to the previously identified Bluxome and Townsend Warehouse Historic District, identified in 2009 as locally eligible for listing or designation as part of the South of Market Historic Resource Survey. The subject property, 601 Brannan Street, was designed by architects Ashley & Evers and constructed in 1924 for Grinnell Company of the Pacific, successor firm to General Fire Extinguisher Company. It was photographed for the March 1935 issue of Architect & Engineer and was noted in the 1990 Unreinforced Masonry Building Survey (see description below) for its “robust red” brick. The building also features ornamental plaques at the roofline with the letter “G” and the image of a fire sprinkler. Its addition to the Bluxome and Townsend Warehouse Historic District corrects an apparent omission made during the South of Market Historic Resource Survey, which assigned a 6Z rating. The Central SoMa Survey proposed a 5D3 rating for the structure, meaning it appears to qualify as a contributor to the locally eligible Bluxome and Townsend Warehouse District.

Updated Individual Status Codes

Survey efforts and research conducted by Planning Department staff have determined that updated California Historical Resource Status Codes are warranted for three properties evaluated previously within the Plan Area and vicinity (see **Table IV.C-3, Updated Individually Eligible Resources from Central Soma Historic Resource Survey**). Each of the resources has been newly determined to be a historical resource, and each is considered a good example of its respective types and periods. The updated status codes reflect new information generated by the Central SoMa Historic Resource Survey, including new information about the architects and/or history of alterations.

TABLE IV.C-3 UPDATED INDIVIDUALLY ELIGIBLE RESOURCES FROM CENTRAL SOMA HISTORIC RESOURCE SURVEY IN THE PLAN AREA

	Parcel(s)	Address	Year Built	Historic Name	Prior Rating ^a	Updated Rating
1	3725/020	964 Howard St	1907		6L	3CS
3	3777/017	534–548 Fourth St	1919	Thiebaut Brothers Paper Box Co.	6Z	3CS
4	3725/007	194–198 Fifth St	1912	Hotel George	6L	3CS

NOTES:

- See Table APX-C-2, in Appendix C, for a list and description of California Historical Resource status codes. In general, Status Code 3 indicates properties that appear eligible for listing in the California Register through survey evaluation; and Status Code 6 indicates properties not eligible for listing in the California Register.

Historic Resources Worthy of Potential Future Landmark Status

Survey efforts and research conducted by Planning Department staff in conjunction with the preparation of the Plan identified 16 buildings in SoMa that appear eligible for designation under *Planning Code* Article 10 (City Landmark) (see **Table IV.C-4, Historic Resources with Potential of Future Landmark Status**). These buildings appear eligible for designation as Landmarks either for their architecture, their historical or cultural significance, or both.

TABLE IV.C-4 HISTORIC RESOURCES WITH POTENTIAL OF FUTURE LANDMARK STATUS

Parcel(s)	Address	Year Built	Historic Name	Current Historic Status Code ^a
3777/001	500–504 Fourth St	1908	Hotel Utah	3S
3775/058	104–106 South Park St	1907	Omiya Hotel/ Gran Oriente Filipino	5D3
3775/039	95 Jack London Alley	1951	Gran Oriente Filipino Masonic Temple	5D3
3776/041	539 Bryant St	1912	Shreve & Company Factory	3S
3760/012	480 Fifth St	1925		3CS
3776/008	566–586 Third St	1907	Central Hotel	3S
3786/015	340–350 Townsend St	1906	Paul Wood Warehouse	2S2
3763/105	645 Harrison St	1947	A. Carlisle & Company Building	3S
3752/010	360 Fourth St	1925	Southern Police Station	2S
3786/015	508–514 Fourth St	1925	Murschen & Hoelscher Building	5S3
3787/052	601 Fourth St	1916	Heublein Wine Distribution Warehouse	3S
3733/019,020	844–850 Folsom St	1923	Victor Equipment Company	5S3
3733/020A	854 Folsom St	1926		5S3
3775/084	461 Bryant St	1912		5S3
3788/024A	355 Brannan St	1928		5S3
3788/024	361–365 Brannan St	1928		5S3
3704/003	44–48 Fifth St	1907	Oakwood Hotel	3CB

NOTES:

- See Table APX-C-2, in Appendix C, for a list and description of California Historical Resource status codes. In general, Status Code 2 indicates properties determined eligible for listing in the California Register; Status Code 3 indicates properties that appear eligible for listing in the California Register through survey evaluation; and Status Code 5 indicates properties recognized as historically significant by local government.

Article 11 Reclassification

Survey efforts and research conducted by Planning Department staff have determined that Article 11 reclassification is warranted for eight properties within the Central SoMa Survey area (see **Table IV.C-5, Buildings Eligible for Article 11 Reclassification**). The current ratings were assigned approximately 30 years ago, and new information and/or comparisons with similar properties were used as the basis for these proposed ratings.

TABLE IV.C-5 BUILDINGS ELIGIBLE FOR ARTICLE 11 RECLASSIFICATION

Parcel(s)	Address	Year Built	Historic Name	Current Article 11 Rating	Proposed Article 11 Rating
3704/017	948 Mission St	1907	Alkain Hotel	V	III—Contributory
3275088	953–957 Mission St	1915	Ford Apartments	V	III—Contributory
3704/013	936–940 Mission St	1915	Land Hotel/Chronicle Hotel	V	III—Contributory
3733/137	357 Tehama St	1910	Spaulding Pioneer Carpet Cleaners	V	III—Contributory
3705/039	55 Fifth St	1913	Lankershim Hotel	V	IV—Contributory
3733/008	821 Howard St	1921	Bake Rite Oven Manufacturing / Southern Police Station	No rating	III—Contributory
3704/035	440–444 Jessie / 439-441 Stevenson St	1924	Wobbers Inc. Printing & Engraving	V	IV—Contributory

Archeological Setting

Archeological Context

This subsection, describing the archeological context, has been adapted from the Archeological Technical Memorandum for the *San Francisco General Plan Housing Element EIR*.¹⁰⁴

A sizable archeological literature exists for San Francisco and there has been a considerable amount of archeological field investigation. Most of this documentation has been more descriptive than analytical in its treatment of archeological resources and most field projects have been initiated as salvage archeological efforts rather than the implementation of research or area-wide preservation plans. Until recent years, archeologists in San Francisco have primarily concentrated on a small range of archeological resources, specifically prehistoric sites, Gold Rush-period structural remains and deposits, buried Gold Rush-period storehouses, structural remains associated with the Spanish/Mexican Presidio, the foundations of the former City Hall complex, and deposits associated with Chinese households or merchants. A number of archeological data recovery projects have also been conducted in former historical cemetery sites involving the removal of a large number of burials. With one exception,¹⁰⁵ little archeological analysis of cemetery features, human remains, or the burials themselves has resulted, in part because of inconsistencies in state laws regarding the status and appropriate treatment of discovered human remains and the failure to coordinate a plan of action among interested City departments.

A major research focus in recent archeological work in San Francisco has been comparative studies of domestic and commercial deposits during the historic period (after 1860 and before the 1906 earthquake and

¹⁰⁴ William Self Associates and Randall Dean, *Archeological Technical Memorandum for the San Francisco General Plan Housing Element EIR*, prepared for San Francisco Planning Department, 2009. Available at http://www.sf-planning.org/ftp/files/MEA/2007.1275E_SFHE_DEIR_AppxC.pdf, accessed August 29, 2012.

¹⁰⁵ Buzon, Michele, Philip Walker, Francine Verhagen, and Susan Kerr, "Health and Disease in Nineteenth-Century San Francisco: Skeletal Evidence from a Forgotten Cemetery" in *Historical Archaeology*. 39(2): 1–15, 2005

fire). Freeway projects conducted by Caltrans, initiated after the damage caused during the 1989 Loma Prieta earthquake, made possible several in-depth archeological studies of this period.^{106,107,108} Such studies have shown that archeological deposits of the late 19th century and early 20th century may have important research value independent of the existence of a good associated historical record. These studies have shown that the archeological record of the past 150 years has the potential to fill in the gaps and misrepresentations that characterize the written record, despite having been subject to differential preservation over time, subsequent disturbances, and the biases of the archeologists in choosing what is retrieved, recorded, and investigated.

Prehistoric Context of the Plan Area and Vicinity

The following discussion outlines the prehistoric context of the Plan Area and vicinity, which covers the period from 11,500 B.C. to A.D. 1780, including the most recent chronology for prehistoric archeological sites on the San Francisco peninsula and in the San Francisco Bay Area.

Since the late Pleistocene (approximately 11,500–9600 B.C.), when indigenous peoples may have first arrived in the Bay Area, the region has undergone dramatic environmental changes. To date, three Middle Holocene era prehistoric sites have been found in San Francisco, two of which consist of deeply buried human burials. During excavations for the Transbay Terminal project in 2014, an unusual human burial dating to approximately 7570 years BP (Before the Present) was discovered in former Bay mud deposits approximately 60 feet below grade. The other early human burial was discovered approximately 75 feet below the modern ground surface, during the construction of the Bay Area Rapid Transit (BART) tunnel near the Civic Center Station, at the western end of the Downtown district. A human skeleton estimated to have been buried more than 5,000 years ago was found in a clay matrix that was once part of marshlands associated with an inland creek (CA-SFR-28).¹⁰⁹ The majority of known prehistoric sites in San Francisco is no more than 2,000 years old and is found buried at depths of approximately 10 to 20 feet below ground surface. In most cases, the prehistoric sites lie within the dune sands that were blown eastward from the Pacific coast, across the peninsula (over the past 6,000 years or so).

Prehistoric resources and sites that have survived to be discovered during historic times represent only a portion of the past. The early Euro-American growth of San Francisco was characterized by filling of the shallow Bay waters and other low-lying lands, removal of hills of sand and rock, and the obscuring of original ground surfaces by fill, roadways, buildings, and structures. Nels C. Nelson conducted a systematic survey around the perimeter of the entire San Francisco Bay between 1906 and 1909, focusing on mounds of shell partially submerged in or adjacent to the Bay waters, and recorded 425 shellmounds.¹¹⁰ Shellmounds are large, mounded accumulations of shell and shell fragments, charcoal, artifacts, and other detritus associated with

¹⁰⁶ Praetzelis, Mary and Adrian Praetzelis (editors), *Tar Flat, Rincon Hill, and the Shore of Mission Bay: Archaeological Research Design and Treatment Plan for SF-480 Terminal Separation Rebuild*, 1992.

¹⁰⁷ Praetzelis, Mary and Grace Ziesing (editors), *San Francisco-Oakland Bay Bridge, West Bay Span Retrofit: Archaeological Research Design and Treatment Plan*. Prepared for Caltrans District 4, Oakland, CA, 1998.

¹⁰⁸ Ziesing, Grace H., *Replacement of the West Approach to the San Francisco-Oakland Bay Bridge: Archaeological Research Design and Treatment Plan*. Prepared for Toll Bridge Program, CALTRANS, District 4, 2000.

¹⁰⁹ The trinomial coding system for archeological resources includes the state ("CA"), county (three-letter county code, "SFR"), and an identifying number.

¹¹⁰ Nelson, Nels C., *Shellmounds of the San Francisco Bay area. University of California Publications in American Archaeology and Ethnology* 7 (4): 310–356. Berkeley, 1909.

long-term human occupation of a site. Shellmounds also frequently contain large numbers of human burials. Nelson's survey occurred well after Yerba Buena Cove had been filled and the area had been heavily developed and covered by the built environment. It is likely that the filling of the cove and subsequent development obscured any prehistoric occupations that may have existed there.

Periods of prehistory and discovered sites dating from these periods are discussed below.

Terminal Pleistocene (11,500–9600 B.C.)

No prehistoric sites dating from this period have as yet been discovered in the San Francisco Bay Area. The nearest Terminal Pleistocene site is the Borax Lake site (CA-LAK-36) near Clearlake, approximately 100 miles north of San Francisco. Presumably, populations were small and highly mobile. The archeological signature of such groups would be faint, geographically sparse, and easily disturbed by geological processes such as erosion, rising sea level, and alluvial burial.

Early Holocene (9600–5700 B.C.)

Early Holocene human populations are known from a few Bay Area sites, such as at Los Vaqueros Reservoir (CA-CCO-696) and Santa Clara Valley (CA-SCL-178). Communities from this period were semi-mobile hunter-gatherers who, in addition to tools, used some "site furniture" such as manos (stone hand tools) and milling slabs. Human burials from this period have also been investigated. There are no documented Early Holocene sites in San Francisco.

Middle Holocene (5700–1800 B.C.)

Middle Holocene sites are more widespread in the Bay Area and are evidenced by substantial settlements, isolated burials, distinct cemeteries, milling slabs, mortars and pestles, and the fabrication and use of shell beads and other ornaments. Differences in burial treatment such as differential distribution of shell beads and ornaments are interpreted as evidence of possible social stratification. The expansion of San Francisco Bay's estuaries and tidal wetlands seems to have resulted in a shift toward coastal and maritime resource exploitation. San Francisco has to date three known Middle Holocene sites, including CA-SFR-28—the remains of a young woman found during BART construction in marsh deposits 75 feet below grade. As noted, human remains from this period were also discovered in 2014 at the Transit Center site; however, full documentation of this find is pending. A third Middle Holocene prehistoric site was recently documented deeply buried within what was formerly the estuary of Islais Creek.

Late Holocene (1800 B.C.–A.D. 1780)

The Late Holocene has left the strongest archeological record of prehistoric populations in San Francisco. This period is marked by the establishment of large shellmounds. Artifact assemblages are characterized by bone awls (indicating the appearance of coiled basketry), net sinkers, mortars (probably indicating greater consumption of acorns), Olivella shell beads, the appearance of the bow and arrow, and diverse beads and ornaments, such as incised bird bone tubes. There is some indication of a greater exploitation of deer, sea otter, mussels, and clams. There is growing indication of shellmounds as planned, constructed landscapes on sites of ancestral, or at least mortuary, importance.

Prehistoric Archeological Investigations in San Francisco

Use of a systematic investigatory approach to prehistoric sites in the northern portion of the San Francisco peninsula began with Nelson's shellmound survey conducted between 1906 and 1909.¹¹¹ Nelson pursued his interest in San Francisco prehistory with excavations at CA-SFR-7 (the Crocker Mound) on the Bay's southeastern shoreline,¹¹² among other investigations. Nelson found that CA-SFR-7 contained a variety of flaked stone, worked bone, faunal remains, and 23 human burials. The constituents of this mound indicate long-term residential occupation. Two years later, L.L. Loud excavated another shellmound (CA-SFR-6), approximately 3 feet (1 meter) thick, near the Palace of Fine Arts.¹¹³ While interest in the prehistory of the northern San Francisco peninsula began in the early 1900s, the area generally received little attention until more recent times. This was partially a result of the destruction and/or burial of sites due to historic settlement and development.

Within the past 30 years or so, the body of work on the prehistoric northern San Francisco peninsula has expanded, as archeological sites are uncovered during construction or development activities within the City. Well over 50 prehistoric archeological sites have been documented within the northern San Francisco peninsula and Yerba Buena Island; the majority of these are within one-half mile or less from the historic margins of San Francisco Bay. The great majority of prehistoric sites are shell midden sites, which have their greatest concentrations in the South of Market area and the Hunters Point-Bayview-Candlestick Point-Visitation Valley area. Middens are accumulations or concentrations of objects crafted by people, as well as debris and objects left behind by human activities. Middens most commonly include some combination of flaked stone objects and debris from their manufacture, groundstone implements and fragments, burned and unburned faunal bone, ash, charcoal, and fire-affected rocks. Middens in San Francisco and the surrounding Bay Area are typically characterized by relatively high concentration of shells and shell fragments. Although midden sites in the latter area have been known since the 1870s and include some of the largest shellmound sites in San Francisco, they have been subject to little investigation and no hard dating. The South of Market area sites have, on the other hand, largely come to light only since the 1980s and have been subject to various analytical and absolute dating techniques. The South of Market area shell midden sites are also remarkable within Bay Area shellmound studies, in that many of them possess good physical integrity as a result of having been buried beneath natural sand dune deposits for hundreds of years following their abandonment.

In addition to the South of Market area and the Hunters Point-Bayview-Candlestick Point-Visitation Valley area, a third area of apparent intense prehistoric occupation was on the terraces of Islais and Precita Creeks (running roughly west-to-east across the central portion of the city, including what is now the Bernal Heights and Bayshore districts) just above their broad tidal estuary and included such sites as CA-SFR-3, -15, and -17, the Anderson Shellmound, the Alemany-Bayshore site, and the Portola Avenue mound. Prehistoric sites documented along the northern bay shore (CA-SFR-23, -26, -29, -30, and -129) and Lands End (CA-SFR-5, -20, and -21) appear to be smaller occupation sites or food processing camps. Shell midden sites in the Lake Merced area (CA-SFR-25 and -126, and the Lake Merced Site [no trinomial assigned]) have not been well investigated. One well-researched shellmound in San Francisco is CA-SFR-4 on Yerba Buena Island, which has

¹¹¹ *Ibid.*

¹¹² Moratto, M. J., *California Archaeology*, Academic Press, Orlando, Florida, 1984:233.

¹¹³ Ziesing, 2000 (see footnote 57, p. 13), p. 32.

been determined to have been first used exclusively as a cemetery site for around three hundred years by possibly Hokaan-speaking populations during the Late Holocene period. After a lapse of more than a thousand years, the site hosted a more intensive and diverse occupation between approximately A.D. 190 and 1780, resulting in a multi-component shellmound site. Based on contact era observations of interaction and travel between the mainland and the island, there may have been some relationship between CA-SFR-4 on the island and a prehistoric site in the South of Market area, CA-SFR-112.

Archeological Resources in the Plan Area and Vicinity

This subsection has been adapted from the ARDTP for this EIR and the archeological technical memorandum for the Housing Element EIR, including revisions and additions specific to the Plan Area and vicinity.¹¹⁴

Significance of San Francisco's Archeological Record

Archeological resources typically attain historical significance from their potential to address relevant research issues, through recognition at the state level (based on California Register listing or review under CEQA) and/or at the federal level (based on National Register listing or review under Section 106 of the National Historic Preservation Act). Resources from periods for which complementary documentary evidence is either rare or non-existent have a higher likelihood of significance. Such periods include prehistory, the Spanish and Mexican period, and the Gold Rush era. Archeological resources that can speak to categories of investigation for which documentary evidence tends to be biased, sparse, or silent also have a higher likelihood of significance. Such archeological resources include, but are not limited to, the artifact-filled hollow features (privies, wells, trash pits) or building infrastructural remains of the domestic, commercial, institutional, and industrial sites associated with specific ethnic, racial, religious, occupational, or lower economic and social status groups or communities (e.g., an African-American-owned general store, or a Chinese shrimp fishing village); hollow features such as privies, cisterns, wells, and trash pits that were filled during the course of the daily lives of working-class San Franciscans; or shipwrecks.

Archeological Resources from the Prehistoric Period

Recorded Prehistoric Archeological Sites in the Plan Area and Vicinity

A records search was conducted for the ARDTP study area, which includes a 250 meter radius around the area bounded by Market Street to the north, Second Street to the east, Sixth Street to the west, and Townsend Street to the south. Based on the results of a records search (File Nos.12-1322 and 13-0149) at the Northwest Information Center of the California Historical Resources Information System (CHRIS), the Plan Area and vicinity, is likely to contain significant prehistoric archeological resources. A total of seven prehistoric archeological sites (CA-SFR-2, -113, -114, -147, -155, and -175 and P-38-004499) have been formally recorded within the ARDTP study area through the Northwest Information Center, and one site with both prehistoric and historical components (CA-SFR-154/H) has been recorded.¹¹⁵ Two additional prehistoric archeological

¹¹⁴ See footnote 44, p. 1, and footnote 53, p. 3.

¹¹⁵ Site P-38-004499 has not been assigned a trinomial identification number, as have the other sites noted.

sites (CA-SFR-112 and -135), and one site with both prehistoric and historical components (CA-SFR-151/H), have been recorded within the ARDTP study area.¹¹⁶

All of these resources were encountered below the current urban land surface, typically during formal archeological investigations, and many of the prehistoric sites were also buried under natural dune sand. The 11 sites with prehistoric components within the records search area all appear to be Late Holocene shell middens situated within sand dunes near the edge of former Mission Bay or Yerba Buena Cove. The full extent of these prehistoric occupations is uncertain, since only the portions within the relevant construction areas were studied and additional portions may well extend beyond those limits. For example, the northern boundary of site CA-SFR-114 was well-defined during data recovery investigations for the Moscone Center North project.¹¹⁷ The site contained a thick occupation deposit, structural features, and human burials. The southern edge of the site was not documented, only defined by the limits of the construction area which extended to the northern edge of Howard Street. Recent archeological coring immediately to the south within Howard Street has revealed that even more southern portions of CA-SFR-114 remain preserved.^{118,119}

As part of recent work at CA-SFR-175, seven prehistoric sites within the Plan Area and vicinity (CA-SFR-2, -113, -114, -147, -154/H, -155, and -175) have been determined eligible for the National Register as a District, and therefore are also considered eligible for the California Register.¹²⁰ The sites were determined eligible under Criterion A, as “associated with events that have made a significant contribution to the broad patterns of our history.” They are also considered to be National Register-eligible under Criterion D as well. These sites are considered to represent elements of a multi-village community network that was clustered around the shore of Mission Bay.^{121 122} As such, a considerable portion of the Plan Area and vicinity is situated within a recently recognized National Register District.

Potential Prehistoric Archeological Property Types in the Plan Area and Vicinity

San Francisco prehistoric-period archeological research has identified two general categories of archeological resources: residential and non-residential sites.¹²³ These categories are general enough that they encompass evidence from the entire prehistoric period and allow for the study of change through time. Shellmounds are included as a separate site type because they are characteristic of San Francisco and the Bay Area. In addition, cemeteries, isolated human remains, and isolated artifacts are also discussed as separate property types.

¹¹⁶ Far Western Anthropological Research Group, Inc., 2014 (see footnote 44, p. 1), pp. 7–9.

¹¹⁷ Archeo-Tec, Moscone Center Expansion Project: Archaeological Data Recovery Program. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA, 1990.

¹¹⁸ Far Western Anthropological Research Group, Inc., 2014 (see footnote 44, p. 1).

¹¹⁹ Byrd, Brian F., Jack Meyer, Naomi Scher, Rebecca Allen, R. Scott Baxter, Bryan Larson, Chris McMorris, and Meta Bunse, *Archaeological Research Design and Treatment Plan for the Moscone Center Expansion, San Francisco, California*. Prepared for ESA and submitted to City of San Francisco Environmental Planning, 2013.

¹²⁰ Anthropological Studies Center (ASC), Site Specific Archaeological Research Design, Evaluation, and Data Recovery and Treatment Plan for Prehistoric Midden Deposits at Fourth and Howard Streets, San Francisco. Prepared for the San Francisco Municipal Transportation Agency, September 15, 2010: 45.

¹²¹ Ibid.

¹²² Luby, Edward M., Clayton D. Drescher, and Kent G. Lightfoot, Shell Mounds and Mounded Landscapes in the San Francisco Bay Area: An Integrated Approach. *The Journal of Island and Coastal Archaeology* 1(2): 191–214, 2006.

¹²³ (Ziesing, 2000 (see footnote 57, p. 13), pp. 131–132.

As discussed above, indigenous people lived by hunting and gathering, subsisting on the abundant fauna and flora available in the wooded hills, coastal, and estuarine habitats of the San Francisco peninsula. They hunted deer, trapped smaller animals and birds, caught fish and sea mammals, and ate shellfish. They also ate acorns, berries, and other plant foods that were available at different times throughout the year. In general they moved with the seasons, but also returned to favorite spots and group gathering places. As a result, the archeological record of San Francisco includes a variety of site types that housed different numbers of people for varying lengths of time (e.g., hunting group, small tribe, or larger gathering of tribes). The majority of prehistoric sites in San Francisco are shell middens that formed in coastal or estuarine habitats. Shell middens, described above, resulted from long-term or frequent occupation by people carrying out daily activities such as food preparation, eating, and tool-making, as well as the gathering and processing of massive quantities of shellfish. Extended occupation by large groups of people led to the accumulation of mounded shell middens, or shellmounds. Even among shellmounds, there were varying sizes and perhaps varying functions.

Residential sites contain evidence of permanent or semi-permanent occupation. In addition to middens, or soil containing concentrated debris from food processing, preparation, and eating, a residential site typically contains fire pits or hearths with ash, charcoal, and/or fire-affected rocks, circular or oval depressions of house floors, and often human graves. San Francisco archeologists further distinguish residential sites to indicate the apparent length and intensity of occupation. Large sites with very thick middens and multiple features such as hearths, house floors, and burials are inferred to have been villages.

Villages are characterized by large concentrations of a wide variety of artefactual materials, features, and often human burials, and represent long-term and/or frequent occupations by large groups of people. The deposits result from a wide variety of activities relating to daily life. Shellmounds have been found within San Francisco, and most of the larger, more complex shellmounds are thought to have been the sites of villages. These are identified by concentrations of shell and shell fragments from a variety of species of shellfish, and combinations of one or more of the following materials: charcoal, ash, faunal bone, fire-affected rock, shell ornaments, bone tools, groundstone implements, flaked stone tools (e.g., spear, knife, and arrow points and the debris from their manufacture), human remains, quartz crystals, mica, ocher, and filled pits or impressions. The upper layers of San Francisco Bay shellmounds are typically no longer present, and to some extent those layers beneath the present ground surface may have been damaged or destroyed, but in many cases, the deepest layers (at least 5 feet below the present ground surface) may remain intact. However, one of the distinguishing characteristics of many of the shell midden sites that have been found in the South of Market area is the fact that they have remarkable integrity, attributable to their having been buried under later sand dune deposits. Examples of village sites in the South of Market area are CA-SFR-112 and CA-SFR-135 (thought to be part of the same extensive site) and CA-SFR-114.

Sites CA-SFR-112 and CA-SFR-135 are characterized by shell midden deposits.^{124,125,126} The sites were found a little over 16 feet (5 meters) below present day ground surface, and averaged about 1 foot (40 centimeters) in

¹²⁴ Walsh, Michael R., Department of Parks and Recreation Site Record for CA-SFR-112. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA, 1986.

¹²⁵ William Self Associates, Inc. (WSA), Department of Parks and Recreation Site Records for CA-SFR-135. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA., 2001.

¹²⁶ William Self Associates, Inc. (WSA), Archaeological Monitoring, Testing, and Data Recovery Program. 560 Mission Street Project, San Francisco, CA. Unpublished report on file at the WSA office, Orinda, CA.

thickness. They appear to have been covered by drifting dune sands prior to the historic period.¹²⁷ Walsh inferred that CA-SFR-112 represented the easternmost toe of a substantial shellmound that extended beneath an adjacent building. CA-SFR-135 was thought to be the possible continuation of the same deposit.¹²⁸

Radiocarbon and obsidian hydration dates place CA-SFR-112 occupation between A.D. 250 and A.D. 850, while obsidian-hydration dates from CA-SFR-135 indicate that the site was intermittently inhabited between A.D. 400 and A.D. 1000. CA-SFR-112 may have been a sizeable village that had been occupied for a substantial period of time.^{129,130,131} If this is correct, then CA-SFR-135 would appear to be part of the same large shellmound, given the similarity in depth, date, and composition.

Archeological testing conducted by William Self Associates, Inc. (WSA) at 40 Jessie Street, east of the Plan Area, in 2006 encountered disturbed secondary prehistoric midden deposits from just over 10 feet (3.2 meters) to close to 15 feet (4.8 meters) below ground surface.¹³² Due to the proximity to CA-SFR-112, WSA concluded that the midden material represented disturbed components from that site that had been redeposited in the fill at 40 Jessie Street during historic-period construction activities (historic materials were intermixed with the midden sediments).

Like CA-SFR-112, CA-SFR-114 is a shell midden that is thought represented a large village site occupied for an extended period of time. The site was covered by dune sands and was located at depths of nearly 10 feet (3 meters) to over 20 feet (6.3 meters) below street level.¹³³ The midden contained various artifact types and faunal remains, a possible sweathouse feature, and a minimum of 11 human burials, some of which had associated grave goods such as *Olivella* beads and abalone pendants. Radiocarbon dates indicated that the site was occupied from approximately A.D. 350 to A.D. 950, while shell bead types and the depth of the deposit suggest dates of occupation between 550 B.C. and A.D. 950.¹³⁴

Recently, a series of five midden deposits (CA-SFR-175) was discovered during archeological monitoring of trenching on Fourth Street to relocate utilities from the path of the new Central Subway construction.¹³⁵ The site included relatively thick accumulations of midden soils containing a range of archeological indicators of residential property types, including evidence of food processing and consumption. The midden deposits are located approximately 700 feet southwest of CA-SFR-114, and while further assessment is necessary to

¹²⁷ Pastron, Allen G., *Archival Cultural Resources Evaluation of the Proposed First and Howard Development Project*, City and County of San Francisco, California. Prepared by Archeo-Tec Inc., Oakland, CA, for EIP Associates, San Francisco, CA, 2005.

¹²⁸ Walsh, 1986 (see footnote 87, p. 37).

¹²⁹ Archeo-Tec, Inc., 1990, Moscone Center Expansion Project: Archaeological Data Recovery Program. Oakland, California. Report on file, Northwest Information Center, Sonoma State University, Rohnert Park, California.

¹³⁰ Ibid.

¹³¹ Ziesing, 2000 (see footnote 57, p. 13), p. 43.

¹³² William Self Associates, Inc. (WSA), *Report on Archaeological Testing Program and Data Recovery at 40 Jessie Street*, San Francisco, CA. Prepared by William Self Associates, Inc., Orinda, CA, for San Francisco City and County, Major Environmental Analysis, City Planning Department, San Francisco, CA, 2006.

¹³³ Archeo-Tec, 1990:21.

¹³⁴ Martin, Thomas, *Archaeological Testing/Data Recovery Investigations at the Prehistoric Deposit of CA-SFR-154/H, San Francisco-Oakland Bay Bridge West Approach Replacement Project*, San Francisco, California. Prepared for California Department of Transportation, District 4, Oakland, CA, 2006, p. 18.

¹³⁵ ASC, 2010.

determine if they represent the same occupation episode, the thickness of the deposits indicate they could be contemporaneous.

Occupation sites, like village sites, exhibit a concentration of artifacts and materials gathered and/or produced by humans while conducting the range of activities typically carried out at a campsite, when the site was occupied long enough to leave behind features, such as hearths (a concentration of fire-affected rock, charcoal, ash, and perhaps, faunal bone or flaked stone debris); housepits or house floor impressions (hardened earth, sometimes lined with fired clay); and burials (cremations with concentrations of burned human remains, ash, charcoal; or flexed interments with human remains and associated artifacts). Occupation sites are smaller than village sites as they housed smaller groups of people, likely for shorter periods of time. Occupation sites include smaller shellmounds as well as other midden sites with varying concentrations of shell.

Examples of occupation sites include CA-SFR-147 and CA-SFR-155, two relatively small and sparse midden deposits uncovered in 2003. The deposits range from around 12 feet (3.7 meters) to 18 feet (5.5 meters) below ground surface. The sites consisted of intact deposits of shell-flecked, dark, sandy soil within the dune sand that once covered much of San Francisco, overlain by fill sand and disturbed midden intermixed with historic and modern materials. Material within the deposits included shellfish remains; avian, mammal and fish bone; flakes of obsidian, chert and other raw materials; a sandstone charmstone or pipe fragment; two modified chert flakes; and an obsidian biface. Large mammal bones were absent at CA-SFR-147 and small to medium-sized mammal bones were dominant at CA-SFR-155. Both sites contained evidence of processing and consumption of locally obtained resources in the form of burned and calcined shell and bone, and evidence of on-site seed and nut processing was found at CA-SFR-155. Radiocarbon dates indicate that CA-SFR-147 was occupied about 2,000 years ago, and CA-SFR-155 was occupied around A.D. 200 to 300. The excavators of the sites inferred a major shift in shellfish consumption patterns from mussel to clam approximately 1,800 years ago.¹³⁶

Non-residential sites represent activities that were carried out away from the residential base, such as temporary hunting or shellfish gathering camps, or isolated burials, and are also referred to as special purpose sites. These sites typically contain a concentration of artifacts and materials gathered or produced by indigenous peoples in pursuit of a limited range of activities or a single activity, such as deer hunting, shellfish gathering, butchering, or flaked stone implement or shell bead manufacture.

Testing and data recovery at CA-SFR-154/H revealed a 16-inch (40-centimeter) thick deposit of intact remnant shell midden yielding shell and mammal, avian, and fish remains, a bone tool, fire-cracked rock, groundstone, and chert and obsidian debitage. Samples of the obsidian debitage were sourced to Napa Valley and dated from 960 to 345 years ago.¹³⁷ A shell was radiocarbon dated to A.D. 1480 and a bone to A.D. 1850. The shell collection was overwhelmingly dominated by clams, indicating that the site was likely occupied primarily during the Late Holocene and may have extended into the historic period.¹³⁸ Martin observed that the site appeared “geographically, functionally, and temporally distinct” from surrounding prehistoric sites.¹³⁹ He

¹³⁶ Martin, 2006, 18–19.

¹³⁷ Meyer, Michael D. and Thomas Martin, Department of Parks and Recreation Site Record for CA-SFR-154/H. On file at the Northwest Information Center, Sonoma State University, CA, 2003.

¹³⁸ Martin, 2006.

¹³⁹ Ibid., iii.

inferred that the site was “a small temporary camp or special-use location oriented primarily to the harvesting and consumption of shallow-water or estuarine species—including mollusks, fish, and waterfowl—and at least some terrestrial and marine mammals.”

CA-SFR-113 is another shell midden site believed to have been a transient hunting camp.^{140,141} Like CA-SFR-112, the site had been covered by dune sands prior to the historic period and was located nearly 15 feet (4.5 meters) below street level. The site contained shellfish remains (predominately mussel), small to large mammal bones, avian bones, flaked-stone and groundstone tools and debitage, ocher, asphaltum, baked clay, and several features. Obsidian sourcing studies indicate that the obsidian recovered from the site came from at least three sources: Napa Valley, Annadel, and Casa Diablo. Pastron’s analyses determined that the site was occupied between 100 B.C. and A.D. 100.¹⁴²

Additional prehistoric deposits were found near CA-SFR-113 and at a comparable depth. Concentrations of shell midden material containing faunal bone, shellfish remains, stone tools and debitage, and abundant charcoal were recovered. Radiocarbon dates obtained from charcoal samples indicate that the site was occupied between 250 B.C. and A.D. 30 representing “the oldest dated occupation site in San Francisco, so far.”¹⁴³ In addition, a non-midden deposit of burnt material containing small Napa Valley obsidian flakes, which were inferred to represent a single knapping event, was unearthed. Obsidian hydration analyses of material from this concentration produced dates of A.D. 750 and 850. Archeo-Tec determined that this material was part of CA-SFR-113 and extended the boundaries of CA-SFR-113 to include these deposits.¹⁴⁴

Shellmounds, some representing residential, and others non-residential sites, are typical of the bay shore and have been interpreted not only as locations of occupation, ritual, and burial but also as symbolic landscapes. Coastal and bay shoreline shellmounds would have been highly visible in prehistoric times, and their relative size and locations could have had symbolic, social, political, and historical significance.

The function of shellmounds in the greater San Francisco Bay has always been a topic of interest to archeologists but has never been satisfactorily explained. Despite considerable research, archeologists have not reached consensus on why hunter-gatherer populations constructed the shellmounds.^{145,146} The role of shellmounds in the subsistence-settlement system most likely changed over time, as evidenced by the variation in location, characteristics, and interrelationships of the shellmounds. The shellmounds have been proposed as residential bases, refuse accumulations, garbage dumps, or specialized ceremonial sites. Because

¹⁴⁰ Ibid., 19.

¹⁴¹ Pastron, 1999, 20, 21.

¹⁴² Ibid., 20–21.

¹⁴³ Pastron, Allen G. and Richard D. Ambro, *The Prehistoric Archaeology of the Westfield San Francisco Centre Project at 835 Market Street, San Francisco, California, and Incidentally, an Expansion of the Boundaries of Site CA-SFR-113*. Prepared for Westfield, San Francisco, CA, 2005.

¹⁴⁴ Richard Ambro, personal communication, 2007.

¹⁴⁵ Lightfoot, Kent G., Cultural Construction of Coastal Landscapes: A Middle Holocene Perspective from San Francisco Bay. In *Archaeology of the California Coast during the Middle Holocene*, Jon M. Erlandson and Michael A. Glassow, editors, pp. 129–141. Perspectives in California Archaeology Vol. 6, Cotsen Institute of Archaeology, University of California, Los Angeles, 1997.

¹⁴⁶ Lightfoot, Kent G., and Edward M. Luby, Late Holocene in the San Francisco Bay Area: Temporal Trends in the Use and Abandonment of Shell Mounds in the East Bay. In *Catalysts to Complexity: Late Holocene Societies of the California Coast*, Jon M. Erlandson and Terry L. Jones, editors, pp. 263–281. Perspectives in California Archaeology, Vol. 6, Cotsen Institute of Archaeology, University of California, Los Angeles, 2002.

many of the mounds contain abundant and intermixed evidence of food remains, hearths, house floors, and burials, it is difficult to devise a simple, comprehensive and satisfying explanation for their function. Lightfoot and Luby argue for the ceremonial significance of the mounds, partly because the mounds they examined once rose above the landscape—some as high as three-story buildings—providing impressive visual markers that they argue must have had symbolic value.¹⁴⁷

Due to the intensive industrialization and urban development of the greater San Francisco Bay, most of the 425 mounds that Nelson documented in 1906 may have been either completely destroyed or severely compromised and are no longer visible on the landscape. Archeological methods have become more sophisticated, and the understanding of the construction and chronology of shellmounds, as well as the cultural history of the surrounding countryside, has grown considerably since the mass excavations and destruction of shellmounds in the first half of the 20th century. Today, most analysis and interpretation of the function of shellmounds relies upon existing data that were excavated from the shellmounds with outdated techniques and incomplete understanding of the complexities of chronology and structure. Recent construction projects have rediscovered intact portions of some shellmounds once thought to be completely destroyed. Examples include the Emeryville Shellmound, CA-ALA-309, and its neighbor, CA-ALA-310, which were encountered during the development of a large tract in Emeryville;¹⁴⁸ and CA-ALA-17, which was first identified in 1876 and more recently rediscovered in West Oakland.^{149,150} New discoveries are possible, as evidenced by the discovery of a small shell-rich cultural deposit buried beneath the streets of West Oakland, CA-ALA-604.¹⁵¹ This small find (less than 20 meters in diameter) is of particular significance as the deposit lies approximately 3 feet below modern ground surface and is limited to several species of shell, charcoal, some broken and burned faunal remains, and some fire-affected rock. A few thousand years ago, this concentration of shell and debris from cooking must have appeared as a very small mound or bump on the landscape. With no evidence of burials and such a relatively small profile, this site is a reminder of the variations in shellmound size, form, and function.

Observable patterns in the current Bay Area archeological data indicate that people settled near marshes adjacent to the Bay shoreline and, at the very least, fished, collected shellfish, and hunted sea mammals from the Pacific Ocean and the bay. Local occupants had access to imported materials and shared various regional cultural traits. The level of involvement in exchange of goods and ideas, however, has not been determined. Evidence of the various activities undertaken at shellmounds, such as flaked-stone tool manufacture, food processing and cooking, hide, shell, and bone working, storage, long- or short-term occupation, and burial, contribute to the understanding of prehistoric adaptation to San Francisco and the Bay Area. In order to

¹⁴⁷ Ibid.

¹⁴⁸ Price, Heather, Eric Strother, Jennifer Price, Aimee Arrigoni, Marin Pilloud, Lisa Valkenier, James Allan, and William Self, *Report on the Madison Marquette Bay Street Project, Burial Removal and Construction Monitoring, CA-ALA-309 and CA-ALA-310, Emeryville, Alameda County, California*, 2004.

¹⁴⁹ Hylkema, Mark G., *Archaeological Report of a Prehistoric Burial Find at CA-ALA-17 in the City of Oakland, Alameda County, California. 4-ALA-880 Cypress Reconstruction Project*. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA, 1997.

¹⁵⁰ Van Bueren, Thad, Jack Meyer, and Brian Ramos, *Report on Archaeological Testing for the Broadway-Jackson Interchange Improvement Project in the City of Oakland, California*. Prepared for the Office of Environmental Planning South, District 4, California Department of Transportation, Oakland, CA, 2002.

¹⁵¹ Pastron, Allen G., and Andrew Gottsfeld, *Final Archaeological Report: East Block of the Mandela Gateway Project, City of Oakland, Alameda County, California*. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA, 2003.

achieve a more sophisticated and satisfying explanation for variation in shellmounds, Bay Area archeologists must conduct more comprehensive evaluations of existing shellmound finds, incorporate new data from investigations at sites other than shellmounds, and take full advantage of any newly discovered intact shellmound deposits, whether from previously known shellmounds or from new discoveries.

Cemeteries or indigenous burials, including interments and cremations, are most often found in association with occupation sites, but occasionally concentrations of burials were placed in a cemetery with no evidence of occupation. There is reportedly a Native American cemetery at the highest point on Yerba Buena Island dating to the 1800s when indigenous peoples' descendants lived and worked on the island. They worked as laborers in the goat herding and wood cutting enterprise that provisioned ships with meat and wood for their journeys.¹⁵² Missions typically dedicated a cemetery or a small area of a cemetery to indigenous peoples, and there is a cemetery associated with Mission Dolores.^{153,154}

Isolated human remains are occasionally found with no apparent associations. These are important and protected resources. Two examples are known in San Francisco to date. The first is CA-SFR-28, discovered in 1969 during construction of the Bay Area Rapid Transit (BART) Station at Civic Center. An isolated human skeleton was located at 75 feet (22.9 meters) below street level. A radiocarbon date of 3690 ± 250 B.C. was obtained from organic clay that surrounded the skeleton's pelvis, representing the oldest date for human skeletal material within the San Francisco peninsula. Analysts suggest that the skeleton was placed within a brackish marsh, in or near a freshwater channel. The marsh deposits were then overlain by approximately 20 feet (6 meters) of dune sand blown across the peninsula from Ocean Beach and Baker Beach.^{155,156,157} More recently, an intact human skeleton was found during construction of the Transbay Transit Center in February 2014. The human remains were encountered at a depth of 58 feet below surface within Bay mud deposits, and are estimated to be between 5,000–7,000 years old.¹⁵⁸

Isolated artifacts such as a broken flaked stone spear point, or a groundstone pestle, are occasionally found with no apparent associations. An obsidian scraper was found at the corner of Third and Folsom Streets with no other objects in association. Such finds may represent objects lost during their use, or more likely, secondary deposits, resulting from construction work, or work such as geotechnical boring, that may bring isolated artifacts up from below the surface, removing them from their context. Isolated artifacts have very limited information potential.

¹⁵² Boyes, Marcia, *The Legend of Yerba Buena Island*. The Professional Press, Berkeley, CA, 1936.

¹⁵³ Pastron and Ambro, 2008: 31-32.

¹⁵⁴ Saunders, Charles Francis, and Joseph Smeaton Chase, *The California Padres and Their Missions*. Houghton Mifflin Company, Boston, MA, 1915: 383.

¹⁵⁵ Martin, 2006, 20.

¹⁵⁶ Pastron, 1999, 18.

¹⁵⁷ Ziesing, 2000 (see footnote 57, p. 13), p. 42.

¹⁵⁸ Jack Meyer, personal communication, 2014.

Archeological Resources from the Historic Period

Recorded Historical Archeological Sites in the Plan Area and Vicinity

A records search at the Northwest Information Center indicates that six historical archeological sites (CA-SFR-128H, -137H, -138H, -153H, -162H, and P-38-004357), and one site with both prehistoric and historical components (CA-SFR-154/H), have been recorded within the Plan Area and vicinity. Six additional historical sites (CA-SFR-94H, -130H, -133H, -152H, -161H, P-38-004294), and one site with both prehistoric and historical components (CA-SFR-151/H), have been recorded within the ARDTP study area. The 14 sites with historical components within the records search area vary widely in size and character. Their boundaries are most often reported as either city blocks or the entire area under construction, rather than defined by the extent of actual deposits within these areas. They include one nineteenth-century whaling ship remnant (CA-SFR-94H), and 13 sites with late nineteenth-century or early twentieth-century remains (CA-SFR-128H, -130H, -133H, -137H, -138H, -151/H, -152H, -153H, -154/H, -161H, -162H, P-38-004294, and P-38-004357). Building foundations and floors, earlier ground surfaces, trash pits, and privies are common, and the age of these deposits varies from the 1860s to the 1920s.¹⁵⁹

There are also a number of instances of archeological remains within the records search area that have been noted/documentated but not formally recorded by archeologists.¹⁶⁰ These include eight sites with historical remains and one site with both prehistoric and historical archeological remains that were encountered during a variety of projects, but were not formally recorded. Such remains include Chinese laundry businesses (Fat Yuen Laundry Site and the Wing Lee Laundry Site), architectural remains with associated artifacts (Third and Mission Site Southeast), refuse deposits (Third and Mission Site Northeast, AT&T Park Site), a historical refuse deposit with butchered animal bones (888 Howard Street Site), structural feature remnants associated with an electric company and sewer access (Jessie Square Historic Features); late nineteenth-century hotel remnants (Crystal Hotel Site), and San Francisco's earliest known refuse dump (Dumpville). In addition, archeological investigations during various phases of the Moscone Center construction project, north of the Plan Area and vicinity, have reported upon historical cultural material (Archeo-Tec 1988, 1990; Pastron 1997, 2002). None of these discoveries, although some of the sites are of archeological importance, have been formally recorded at the Northwest Information Center.¹⁶¹

Potential Historical Archeological Property Types in the Plan Area

Based on previous research, analysis of historic maps (including, but not limited to, U.S. Coast Survey and Sanborn fire insurance maps), as well as the location and constituents of other historic-period archeological sites in the greater SoMa vicinity, the Plan Area could contain significant historic-period archeological resources. Historic-period archeological resources include individual objects, features consisting of spatially and historically associated objects, and sites – historically and spatially meaningful associations of objects, features, structural remains, and elements of landscape. Although features by themselves are often significant, it is their association with something else, such as a person, house, or business, that gives them historical meaning. Therefore individual features are included within the more general categories of archeological

¹⁵⁹ Far Western Anthropological Research Group, Inc., 2014 (see footnote 44, p. 1).

¹⁶⁰ Ibid.

¹⁶¹ Ibid.

resources presented herein. These categories, developed over the past 20 years primarily in the context of the large transportation projects resulting from the Loma Prieta earthquake,^{162,163,164} provide a basis for comparison and consistency among archeological research efforts, with no intention of confining or stereotyping that research. General categories of resources include domestic occupation sites, domestic architecture, commercial sites, institutional sites, industrial sites, storage yards and warehouses, and landfills. Resources from either the Gold Rush era or the Spanish/Mexican period could have relevance to some of the general resource categories; however, archeological resources from these periods are rare, supporting documentary evidence is sparse, and therefore their potential significance to San Francisco history is great and merits individual treatment.

Domestic sites are places where people lived in the past. Associated archeological resources include hollow features such as wells, cisterns, basements, outhouse pits (privies), and garbage pits that were used as receptacles for the remains from everyday living. Once garbage collection was organized and mandated by the City, and water and sewage removal was provided by pipes installed and maintained by the City, such hollow features were much less frequently used, if at all. Sheet refuse or imported fill accumulated across a larger area and acted as a seal for caches of artifacts, and can provide evidence for change over time.

Domestic architectural remains of residences and domestic outbuildings such as footings or post holes are unlikely to have significance if the buildings are known from the historical record, such as maps, photographs, or drawings and they are less likely to have research potential. Domestic architectural remains from the Gold Rush era and earlier, before neighborhoods were documented systematically by the Sanborn Map Company, for example, are assumed to have historical importance, as they represent a rare resource from time periods with importance to the development of San Francisco.

Commercial sites include the locations of businesses such as retail stores, hotels, saloons, and laundries. They are likely to have similar features, both hollow features and sheet refuse, as domestic occupation sites, but the artifacts associated with each feature are expected to reflect the nature of the particular business.

Institutional sites include organizations for social services, such as churches, schools, and hospitals. Institutional sites also encompass civic sites such as public parks and amenities. The same hollow features and sheet refuse found in domestic occupation sites and commercial sites have the potential for meaningful analysis. Institutional architectural and structural remains are unlikely to have historical significance unless they represent elements of buildings that were not recorded in documentary sources such as maps or photographs.

Industrial sites include the archeological remains of buildings and structures that housed industries, as well as evidence of individual industrial processes themselves, or features. The details of industrial architecture, building plans, and in-depth descriptions of industrial processes and machinery are largely available through resources other than the archeological record. However, occasionally archeological resources related to industry are recovered that have the potential to address research questions that could not otherwise be addressed by existing documentary evidence, and in that case, they would have potential significance. Such

¹⁶² Praetzellis, 1994.

¹⁶³ Praetzellis and Praetzellis, 1992.

¹⁶⁴ Ziesing, 2000 (see footnote 57, p. 13).

resources might include innovative modifications of technology, industrial methods, or structures, and evidence from the daily lives of industrial workers.

Storage sites, such as storage yards and warehouses, do not typically hold research potential in and of themselves; however they represent an expansive floor area that may have covered and protected older, deeper resources of value from disturbance. Storage yards rarely contain information beyond what was stored. Warehouses may have been used for several types of commercial purposes over their lifetime. Only if the architectural remains yield details not available from other sources would they have potential significance.

Landfills include purposeful fill events and unintentional accumulations of unwanted materials. In San Francisco, the low-lying areas have been filled since the 1850s as a way to create a more useful urban landscape. Unintentional fill occurs through everyday living as a function of ad hoc refuse disposal in backyards and vacant lots. The contents of purposeful fill may have no relevance to the location in question as it was often hauled in from unrelated contexts off-site. The potential significance of purposeful fill is as a stratigraphic marker, and as a physical seal protecting underlying resources. Like purposeful, or imported fill, unintentional fill may have more innate information potential as lot-specific refuse with associations to the location at a particular point in time. Unintentional fill could also serve as a stratigraphic marker and as a physical seal protecting underlying resources. The fill associated with the 1906 earthquake and fire that created tons of rubble and fire debris is widespread and common in San Francisco and as such may not be considered to have much information value. As a time marker, it can be useful for archeological investigations, but a context has not yet been encountered in which earthquake and fire fill has significance for its research potential.

Spanish and Mexican period sites include a wide range of archeological resources associated with the time period that predates the Gold Rush, from 1776 through 1848. Very few historical documents or detailed maps exist from that earliest period of settlement, and archeological sites from this period are rare. Privies, refuse dumps, hearths, ovens, and other features, as well as any architectural remains, would be treated as potentially significant due to their rarity, lack of documentary sources of evidence, and the importance of the period to the history of San Francisco.

Gold Rush period sites include a wide range of archeological resources associated with the time period from 1849 through 1853, the height of the Gold Rush, and with the period from 1853 to 1859 during the subsequent depression. The early Gold Rush settlement in former Yerba Buena was a hodgepodge of tents and other temporary shelters for residences, businesses, and institutions. Surviving privy deposits and the remains of refuse dumps and temporary structures would all be treated as potentially significant due to their rarity, lack of documentary sources of evidence, and the importance of the period to the history of San Francisco.

Tribal Cultural Setting

Tribal Cultural Context

San Francisco is part of the coastal region occupied by the Ohlone or Costanoan group of Native Americans at the time of historic contact with Europeans.¹⁶⁵ Although the term Costanoan is derived from the Spanish word *costaños*, or “coast people,” its application as a means of identifying this population is based in linguistics. The Costanoans spoke a language now considered one of the major subdivisions of Miwok-Costanoan, which belonged to the Utian family within the Penutian language stock.¹⁶⁶ Costanoan designates a family of eight languages.

Costanoan-speaking tribal groups occupied the area from the Pacific Coast to the Diablo Range and from San Francisco to Point Sur. Modern descendants of the Costanoan prefer to be known as Ohlone. The name Ohlone is derived from the Oljon group, which occupied the San Gregorio watershed in San Mateo County.¹⁶⁷ The two terms (Costanoan and Ohlone) are used interchangeably in much of the ethnographic literature.

The Ohlone tribe that occupied the northern end of the San Francisco peninsula in the late 18th century is known under the general term Yelamu. The Yelamu were divided into three semi-sedentary village groups and occupied at least five settlements located within present-day San Francisco. Yelamu may have also been the name of an additional settlement within the vicinity of Mission Dolores.

The arrival of the Spanish in the San Francisco Bay Area in 1775 led to a rapid and major reduction in native California populations. Diseases, declining birth rates, and the effects of the mission system served to disrupt aboriginal life ways (which are currently experiencing resurgence among Ohlone descendants). Brought into the missions (the Yelamu inhabitants joined Mission San Francisco from 1777 to 1787¹⁶⁸), the surviving Ohlone, along with the Esselen, Yokuts, and Miwok, were transformed from hunters and gatherers into agricultural laborers.^{169,170} With Mexican independence in 1821 and the subsequent abandonment of the mission system, numerous ranchos were established, generally on land deeded to former Mexican soldiers, who became the rancho proprietors. Generally, the few Indians who remained were then forced by necessity to work on the ranchos.

¹⁶⁵ Kroeber, Alfred, *Handbook of the Indians of California*. *Bureau of American Ethnology Bulletin* 78. Washington, DC, 1925: 462–473.

¹⁶⁶ Shipley, William F. “Native Languages of California.” *Handbook of North Americans*. Vo.8 California. Smithsonian Institution Press. 1978: 82–84.

¹⁶⁷ Bocek, Barbara, *Hunter-Gatherer Ecology and Settlement Mobility along San Francisquito Creek*. Doctoral Dissertation, Stanford University, Stanford, CA, 1986:8.

¹⁶⁸ Milliken, Randall, *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area 1769-1810*. Ballena Press Anthropological Papers No. 43, Menlo Park, CA, 1995:260.

¹⁶⁹ Levy, Richard, Costanoan. In *Handbook of North American Indians*, Volume 8, California, Robert F. Heizer, ed. Smithsonian Institution, Washington D.C., 1978.

¹⁷⁰ Shoup, Laurence, with Randall Milliken and Alan Brown, *Inigo of Ranchero Posolmi: The Life and Times of a Mission Indian and his Land*. Oakland: Archaeological/Historical Consultants. May 1995.

Tribal Cultural Resources in the Plan Area and Vicinity

Tribal cultural resources are those resources that meet the definitions in *Public Resources Code* Section 21074. Tribal cultural resources are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are also either (a) included or determined to be eligible for inclusion in the California Register or (b) included in a local register of historical resources as defined in *Public Resources Code* Section 5020.1(k). In 2015, the Planning Department undertook discussions with legally-recognized¹⁷¹ Native Americans for San Francisco regarding Tribal Cultural Resources as part of implementation of recent changes in CEQA. From those discussions there resulted an agreement on a tribal cultural resource notification list, procedural requirements for notification, tribal consultation procedures, types of sites that would be treated as prima facie tribal cultural resources and appropriate migratory strategies for the treatment of identified tribal cultural resources that may be potentially adversely affected by a project. Such strategies may include, for instance, preservation-in-place or an interpretive product developed in consultation with the consulting Native American tribal group. Based on discussions with Native American tribal representatives in San Francisco noted above, prehistoric archeological resources are presumed to be potential tribal cultural resources, and there are no other known or potential tribal cultural resources in San Francisco.

Paleontological Setting

Fossil discoveries provide paleontologists with valuable evidence to help them reconstruct biological and geological histories. In order for an organism to be preserved, it must be buried and mineralized, which requires a specific set of favorable geologic conditions and a good deal of time. The fossil yielding potential of a particular area is highly dependent on the geologic age and origin of the underlying rocks. In general, older sedimentary rocks (more than 10,000 years old) are considered most likely to yield vertebrate fossils of scientific interest. When fossils are discovered at the earth's surface, it is because the material in which the organism was fossilized has been eroded away by natural processes or exhumed by humans.

San Francisco, including the Plan Area, is primarily underlain by Franciscan Complex bedrock and surficial deposits such as dune sand and artificial fill. Surficial sedimentary deposits found in the city are primarily Holocene and Pleistocene artificial fill, dune sand, slope and ravine fill, and undifferentiated Quaternary sedimentary deposits. Fossils are typically found in river, lake, and bog deposits, although they may occur in nearly any type of sedimentary sequence. Although uncommon in the low-grade metamorphic Franciscan rocks, fossils from widely scattered localities have been important in sorting out the depositional history of the Franciscan Complex. A Cretaceous ammonite was found in Franciscan shale in northeastern San Francisco, as were fossil plant remains (usually reported as carbonaceous matter or carbonaceous particles and layers), and thin shells resembling parts of arthropods. Tiny shark's teeth are the only known vertebrate fossils reported from the Franciscan Complex.

Undifferentiated surficial deposits found in the city include beach sand, marine deposits, artificial fill, alluvium, landslides, and, in the South San Francisco quadrangle, some Colma Formation. Colma Formation

¹⁷¹ "Legally-recognized Native Americans" means a Native American tribe on the Native American Heritage Commission list for the County of San Francisco as required by State Law (CEQA Guidelines Section 21073).

contains marine and terrestrial fossils including bones and teeth of mammoth and extinct bison and ground sloth, as well as plant remains of juniper and red cedar. Holocene pollen, plant, and shell fossils have been reported in the Bay mud. Remains of land mammals (extinct mammoth, bison, and horse) have been reported from localities in younger alluvium along the bay margin south of the main anchorage of the San Francisco Bay Bridge. No fossils have been reported from artificial fill in the San Francisco Bay area. Overall, the potential for paleontological resources to exist in the Plan Area is considered to be low.

IV.C.3 Regulatory Setting

Historic and Archeological Resources

As described above in the Introduction to this section, CEQA defines a “historical resource” as a resource that is listed in, or determined eligible for listing in, the California Register. A resource is presumed a historical resource, absent evidence to the contrary, if it is identified as significant in a local register of historical resources or identified in a historical resources survey meeting state requirements. Finally, a lead agency may determine that a resource is a historical resource based on other information. *California Public Resources Code* Section 5024.1(c) states that resources are listed in (or determined eligible for listing in) the California Register if they meet one of four criteria and also retain sufficient integrity. The four criteria are as follows: 1 – Event (resource is associated with important historical events); 2 – Person (resource is associated with the lives of historically important persons); 3 – Architecture (resource embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic value); and 4 – Informational Potential (resource has yielded, or has the potential to yield, information important to prehistory or history). Criteria for the National Register of Historic Places specified in the *Code of Federal Regulations* (CFR) are similar to the California Register, but are lettered A–D (36 CFR Part 60.4). Integrity entails the survival of characteristics or historic fabric that existed during the resource’s period of significance; that is, the time it gained its historical importance. Integrity encompasses seven aspects: location, design, materials, workmanship, setting, feeling, and association (*Public Resources Code* Section 5024.1[b]; 36 CFR Part 60.4).

Public Resources Code Section 5024.1(g) sets forth guidelines for historical resource surveys, including, among other things, preparation of the survey according to State Office of Historic Preservation (OHP) procedures and listing the results in the State Historic Resources Inventory. In general, project-specific historical resource surveys performed as part of CEQA review in San Francisco will meet these guidelines and, therefore, resources identified as having California Historical Resource Status Codes 1 through 5 (denoting properties listed in, determined eligible for, or that appear eligible for listing in the California Register; or properties recognized as historically significant by a local government) on such surveys will normally be determined to be historical resources for CEQA purposes (see Table APX-C-2, in Appendix C, for a list and description of California Historical Resource Status Codes)¹⁷². San Francisco contains approximately 175 properties listed in the National Register of Historic Places (National Register), well over a thousand buildings and structures

¹⁷² California State Office of Historic Preservation, *User’s Guide to the California Historical Resource Status Codes and Historic Resources Inventory Directory*, Technical Assistance Bulletin #8, Department of Parks and Recreation, 2004. Available at <http://ohp.parks.ca.gov/pages/1069/files/tab8.pdf>, accessed July 26, 2016.

listed in or eligible for listing in the California Register, approximately 50 California State Historical Landmarks, approximately 266 locally designated historical landmarks, and 14 locally designated historic districts.

In addition to buildings (historic architectural resources), archeological sites may be listed in the California Register or otherwise qualify as historical resources for purposes of CEQA analysis. Generally, an archeological resource is determined to be an “historical resource” due to its eligibility for listing on the California Register under Criterion 4 (potential to yield information important in prehistory or history).¹⁷³ An archeological resource may sometimes be California Register-eligible under the other three criteria noted above. In addition, an archeological resource, like a historic architectural resource, may be listed in a local register of historical resources or identified in a historical resources survey that meets requirements of *Public Resources Code* Section 5024.1(g). Appropriate treatment for archeological properties that are California Register-eligible under criteria other than Criterion 4 may be different from that for a resource that is significant exclusively for its scientific value. As with historic architectural resources, a lead agency may determine that an archeological resource is an “historical resource,” even if it is not listed on the California Register or one of the other qualified inventories identified in CEQA Guidelines Section 15064.5.

As noted above, integrity is an essential criterion in determining whether a potential resource is a historical resource. In terms of CEQA, “integrity” can, in part, be expressed in the requirement that the resource must retain “the physical characteristics that convey its historical significance” (CEQA Guidelines Section 15064.5 (b)). For an archeological resource evaluated under Criterion 4, “integrity” is conceptually different from the term as it is usually applied to the built environment. For a historic building, possessing integrity means that the building retains the defining characteristics from the period of significance of the building. The integrity test for an archeological resource is whether the resource can yield sufficient data (in type, quantity, quality, diagnosticity) to address important research questions. An archeological deposit or feature may have undergone substantial physical change from the time of its deposition but it may yet have sufficient integrity to qualify as a historical resource. Thus, in archeology, “integrity” is often closely associated with the development of a research design that identifies the types of physical characteristics (“data needs”) that must be present in the archeological resource and its physical context to adequately address research questions appropriate to the archeological resource.

Cultural Heritage Assets

The Planning Department defines cultural heritage as:

Tangible properties or intangible assets that express the ways of living developed by a community and passed on from generation to generation, including customs, practices, places, objects, artistic expressions and values.

¹⁷³ In requiring that an archeological resource be evaluated as a historical resource (i.e., an archeological site of sufficient scientific value to be California Register-eligible), CEQA presupposes that the published guidance of the California Office of Historic Preservation (OHP) serves as the methodological standard by which the scientific significance, and thus, California Register eligibility, of an archeological resource is to be evaluated. OHP has issued two guidance documents: *Archaeological Resource Management Reports* (1989) and the *Guidelines for Archaeological Research Designs* (1991).

Cultural heritage can be categorized as either “tangible” or “intangible,” each requiring different approaches for identification, protection, and management.

1. Tangible Cultural Heritage:

Tangible cultural heritage includes objects significant to the archaeology, architecture, science or technology of a specific culture. Tangible heritage can be *movable objects*, such as works of art, artifacts, books, archival material and other objects of natural, historical or archaeological origin, or *immovable objects* such as buildings, sites, structures, cultural landscapes, or districts.

Tangible cultural heritage properties should generally be more than 50 years old, or less if sufficient time has passed for an objective evaluation of the object’s historical, cultural, or archeological value.

Tangible cultural heritage properties that are historically or archaeologically significant, or significant in architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of San Francisco, the state of California or the nation may be eligible for listing on the California Register of Historical Resources. Historical resources are actively surveyed by the Planning Department, and they are eligible for designation to local, state, and national historic resource registries.¹⁷⁴

2. Intangible Cultural Heritage:

Intangible cultural heritage includes the practices, representations, expressions, knowledge, skills that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. Intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity.

Intangible cultural heritage assets generally should be “longstanding” activities, traditions, or organizations that have proven to bridge more than one generation, or approximately 25 years. The continuous engagement of a community with a heritage resource is a defining feature of intangible assets.

Intangible cultural heritage assets are not actively surveyed by the Planning Department, and are not eligible for designation to local, state, and national historical resource registries. Rather, survey and management of these assets should be undertaken by the stakeholder community, with or without the guidance of the Planning Department.

Tangible cultural heritage *properties* may be eligible for listing on local, state, and federal registries of historic properties and, if so, are regulated as historical resources under CEQA. Tangible cultural heritage properties have physical character-defining features and defined geographical boundaries.

Intangible cultural heritage *assets* may be associated with a physical property, but they are immaterial elements that are not eligible for listing on local, state, and federal registries of historic properties. Intangible assets would not be regulated as historical resources by CEQA. They do not have physical character-defining features or defined geographical boundaries.

¹⁷⁴ Movable resources are not generally eligible for designation in either Article 10 or 11 of the Planning Code or in state and national historic resource designations, but they are afforded protection under CEQA and NEPA.

While information pertaining to intangible cultural heritage assets may inform the evaluation of historic resources for the purposes of CEQA review, the City must determine that a property conveys historical significance as defined in the California Register Criteria for designation in order to be considered a historical resource under CEQA. Associations with important events or cultural traditions (Criterion A/1) or persons (Criterion B/2) are intangible qualities of historic resources, but a property must have physical qualities that convey this historic association. Moreover, properties may have significance under Criterion A/1 if they are associated with events, or series of events, significant to the cultural traditions of a community. Traditional cultural significance is derived from the role a property plays in a community's historically rooted beliefs, customs, and practices. For example, an urban neighborhood can be eligible as the traditional home of a particular cultural group and as a reflection of its beliefs and practices.¹⁷⁵ In this case, the built environment of the neighborhood and its character-defining features are those tangible attributes that express the neighborhood's historical or cultural significance, such as a social hall. Alternatively, the Cherry Blossom Festival historically held in San Francisco's Japantown is a culturally significant event that would maintain its significance if moved to another geographic area. In this example, it is the practice itself that holds meaning rather than the place.

The Secretary of the Interior's Standards for the Treatment of Historic Properties (Standards) are a set of principles developed by the National Park Service to promote historic preservation best practices that will help to protect our nation's irreplaceable cultural resources. These Standards are utilized by federal agencies, by State Historic Preservation Offices, and by local governments, organizations and individuals in making decisions about the appropriate treatment of historic properties. Moreover, projects that comply with the Standards can be exempted from CEQA review as they are considered to have no significant adverse impact to historic resources. Safeguarding principles and tools have been developed by UNESCO for intangible assets, but these are not codified in local, state, or federal laws regulating cultural resources.

Tribal Cultural Resources

Tribal cultural resources are those resources that meet the definitions in *California Public Resources Code* Section 21074. Tribal cultural resources are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are also either (a) included or determined to be eligible for inclusion in the California Register or (b) included in a local register of historical resources as defined in *Public Resources Code* Section 5020.1(k). Based on discussions with Native American tribal representatives, in San Francisco, prehistoric archeological resources are presumed to be potential tribal cultural resources. A tribal cultural resource is adversely affected when a project impacts its significance.

Human Remains

Under state law, human remains and associated burial items may be significant resources in two ways: they may be significant to descendant communities for patrimonial, cultural, lineage, and religious reasons; and they may also be important to the scientific community, such as prehistorians, epidemiologists, and physical anthropologists. The specific interest of some descendant groups in ancestral burials is a matter of law f, such

¹⁷⁵ U.S. Department of the Interior, National Parks Service, *Guidelines for Evaluating and Documenting Traditional Cultural Properties*, revised 1998. Available at <http://www.nps.gov/nr/publications/bulletins/nrb38/index.htm>, accessed August 29, 2016.

as for Native Americans (CEQA Guidelines Section 15064.5(d), *Public Resources Code* Section 5097.98). In other cases, the concerns of the associated descendant group regarding appropriate treatment and disposition of discovered human burials may become known only through outreach. Beliefs concerning appropriate treatment, study, and disposition of human remains and associated burial items may be inconsistent or in conflict between descendant and scientific communities.

Paleontological Resources

Section 5097.5 of the *California Public Resources Code* prohibits “knowing and willful” excavation, removal, destruction, injury, and defacement of any paleontological feature on public lands (lands under state, county, city, district, or public authority jurisdiction, or the jurisdiction of a public corporation), except where the agency with jurisdiction has granted permission.

IV.C.4 Impacts and Mitigation Measures

Significance Criteria

For purposes of this EIR, implementation of the proposed Plan, including the proposed open space improvements and street network changes, would have a significant impact with respect to cultural and paleontological resources if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5, including those resources listed in Article 10 or Article 11 of the *San Francisco Planning Code*;
- Cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature;
- Disturb any human remains, including those interred outside of formal cemeteries; or
- Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in *Public Resources Code* Section 21074.

A “substantial adverse change” is defined by CEQA Guidelines Section 15064.5 as “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired.” The significance of a historical resource is “materially impaired,” according to CEQA Guidelines Section 15064.5(b)(2), when a project “demolishes or materially alters in an adverse manner those physical characteristics” of the resource that:

- (A) Convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or
- (B) Account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the *Public Resources Code* or its identification in a historical resources survey meeting the requirements of section 5024.1(g) of the *Public Resources Code*, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

- (C) Convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

In general, a project that would comply with the Secretary of the Interior's Standards for the Treatment of Historic Properties, including the Standards for Rehabilitation (Secretary's Standards) is considered to have mitigated its impact to a less-than-significant level (CEQA Guidelines Section 15064.5(b)(3)).

CEQA Guidelines Section 15126.4(b)(2) states that, "In some circumstances, documentation of a historical resource, by way of historic narrative, photographs or architectural drawings, as mitigation for the effects of demolition of the resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur." In such cases, the demolition or substantial alteration of a historical resource would remain a significant and unavoidable impact on the environment even after the historical documentation has been completed.

Approach to Analysis

The Plan is a regulatory program and would result in new planning policies and controls for land use to accommodate additional jobs and housing. The Plan itself would not result in direct physical changes to existing historical resources. Any physical effects on historical resource would be the result of subsequent individual development projects allowed under the Plan. Street network changes and open space improvements, for which this EIR serves as a project-level environmental review document, could also have physical effects. The analysis considers direct and indirect impacts on both known cultural (historical resources of the built environment, historical and prehistoric archeological resources, and tribal cultural resources) and paleontological resources as well as inadvertent discoveries within the Plan Area, based on the definitions set forth in CEQA Guidelines Section 15064.5.

Approach to Analysis of Historic Architectural Resources

Potential impacts on architectural resources are assessed by determining whether the proposed project would affect any such resources that have been defined as historical resources for the purposes of CEQA. Once a resource has been identified as significant, it must be determined whether the project would cause a "substantial adverse change" such that the significance of the resource is materially impaired, meaning that demolition or alteration of the resource's physical characteristics that convey its historical significance and that justify its inclusion in the California Register or other applicable listing is materially impaired. Mitigation for effects on historic architectural resources may involve avoidance of the resource, revision of a proposed project to minimize the effect, or, where avoidance or minimization is not feasible, documentation of the resource. As noted above, documentation may not reduce effects on a historic architectural resource to a less-than-significant level.

Approach to Analysis of Archeological Resources

Likewise, determining whether an effect on an archeological resource is significant depends on the effect a particular project will have on those characteristics of the archeological resource that make it important. For an archeological resource that is a historical resource due of its prehistoric or historical information value, that is, its scientific data potential (Criterion 4), a significant effect would be the impairment of the potential

information value of the resource. The depositional context of an archeological resource, especially soils stratigraphy, can be important to the resource in terms of dating the resource and reconstructing characteristics of the resource at time of deposition, as well as interpreting the impacts of later deposition events on the resource. Thus, with respect to eligibility under Criterion 4, a significant adverse effect may not be limited to impacts on specific artifacts, but may include effects on the soils matrix in which such objects or materials are situated. Preservation in place is the preferred treatment of an archeological resource (CEQA Section 21083.2(b) and CEQA Guidelines Section 15126.4(b)(3)(a)). When preservation in place is not feasible, data recovery, in accordance with a data recovery plan prepared and adopted by the lead agency prior to any soils disturbance, is generally the appropriate mitigation approach. In addition to data recovery, the mitigation of effects on an archeological resource that is significant for its scientific value requires curation of the recovered scientifically significant data in an appropriate curation facility, including the California Historical Resources Regional Information Center.

Approach to Analysis of Tribal Cultural Resources

Under Assembly Bill 52, consultation with Native American tribal groups regarding identification, potential to affect, or appropriate mitigation occurs at the request of the tribal group for projects within the Plan Area that require a Mitigated Negative Declaration or Environmental Impact Report. Mitigation measures may include avoidance, protection, or preservation of the tribal cultural resources and development of interpretation and public education and artistic programs.

Approach to Analysis of Human Remains

As noted in the Regulatory Setting, human remains and associated burial items may be significant to descendant communities and/or may be scientifically important for their information value. CEQA and other state regulations concerning Native American human remains provide the following procedural requirements to assist in avoiding potential adverse effects on human remains within the contexts of their value to both descendant communities and the scientific community:

- When an initial study identifies the existence or probable likelihood that a project would affect Native American human remains, the Lead Agency is to contact and work with the appropriate Native American representatives identified through the Native American Heritage Commission (NAHC) to develop an agreement for the treatment and disposal of the human remains and any associated burial items (CEQA Guidelines Section 15064.5(d), *Public Resources Code* Section 5097.98).
- If human remains are accidentally discovered, the county coroner must be contacted. If the county coroner determines that the human remains are Native American, the coroner must contact the NAHC within 24 hours. The NAHC must identify the Most Likely Descendant (MLD) to provide for the opportunity to make recommendations for the treatment and disposal of the human remains and associated burial items. If the MLD fails to make recommendations within 48 hours of notification or the project applicant rejects the recommendations of the MLD, the Native American human remains and associated burial items must be reburied in a location not subject to future disturbance within the project site (*Public Resources Code* Section 5097.98).
- If potentially affected human remains/burial may have scientific significance, whether or not having significance to Native Americans or other descendant communities, then under CEQA, the appropriate mitigation of effect may require the recovery of the scientific information of the

remains/burial through identification, evaluation, data recovery, analysis, and interpretation (CEQA Guidelines Section 15064.5(c)(2)).

Consultation with Descendant Communities

The cosmopolitan nature and history of San Francisco necessitates cultural management sensitivity to archeological remains associated with local indigenous, ethnic, cultural, and religious communities consistent with professional archeological ethical standards. On discovery of an archeological site¹⁷⁶ associated with descendant Native Americans, the Overseas Chinese or, as appropriate, any other community, Environmental Planning's Environmental Review Officer (ERO) should seek consultation with an appropriate representative¹⁷⁷ of the descendant group with respect to appropriate archeological treatment of the site, of recovered data from the site, and, if applicable, any interpretative treatment of the associated archeological site. Documentary products resulting from archeological research of the descendant community associated with the site should be made available to the community.

CEQA mandates California public agencies to consider the effects of projects on historical (including archeological) resources. The ERO concluded that preparation of an Archeological Research Design and Treatment Plan (ARDTP) was required for the project, to ensure that important archeological remains that may be present are identified, evaluated, and appropriately treated. The results of the ARDTP are discussed below.¹⁷⁸

Approach to Analysis of Paleontological Resources

The impact analysis for paleontological resources is based on the paleontological potential of the rock units to be disturbed by excavations for subsequent individual development projects that may occur under the Plan. As discussed under Paleontological Setting, no fossils have been reported from artificial fill in the San Francisco Bay area and the potential for paleontological resources to exist in the Plan Area is considered to be low.

Effects on Historic Architectural Resources

Implementation of the Proposed Plan

The proposed project, which is the adoption of the Plan, would not directly result in demolition or alteration of historical resources. The Plan is fundamentally a strategy to support employment growth that is important to the city as a whole, while also creating an urban form that recognizes the Plan Area's neighborhood context, maintaining the area's economic and physical diversity, improving streets and enhancing open space, and

¹⁷⁶ By the term "archeological site" is intended here to minimally include any archeological deposit, feature, burial, or evidence of burial.

¹⁷⁷ An "appropriate representative" of the descendant group is here defined to mean, in the case of Native Americans, any individual listed in the current Native American Contact List for the City and County of San Francisco maintained by the California Native American Heritage Commission and in the case of the Overseas Chinese, the Chinese Historical Society of America.

¹⁷⁸ Far Western Anthropological Research Group, Inc., and Environmental Science Associates, *Archaeological Research Design and Treatment Plan for the Central SoMa Plan Area*, April, 2014.

moving towards sustainability. Because the Plan would accommodate substantial growth, it can be anticipated that some existing buildings, including historical resources, would be demolished during the Plan's lifetime to accommodate new and/or larger-scale development. Demolition of a building identified as a historical resource would be considered a significant impact. In other cases, historic buildings may be adaptively reused, but in certain cases the alterations required to implement such a project might result in the loss of a building's character-defining features to a degree that the building would no longer be considered to possess sufficient integrity to convey its historic significance. This, too, would be considered a significant adverse impact. It is important to note that not all alterations of historical resources would result in a significant impact under CEQA. For example, as stated above under Significance Criteria, a project that complies with the Secretary's Standards would normally be considered to result in a less-than-significant impact.

However, the Plan, if implemented, would not preclude the loss or substantial demolition of historical resources in the Plan Area, and rezoning to increase height limits and allow more flexibility in land uses would encourage redevelopment. Potential future development under the plan affecting individual resources and those in groupings (districts) are discussed in the following impacts discussion.

Effects on Individual Resources and Historic/Conservation Districts

Impact CP-1: Development under the Plan would result in the demolition or substantial alteration of individually identified historic architectural resources and/or contributors to a historic district or conservation district located in the Plan Area, including as-yet unidentified resources, a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5. (Significant and Unavoidable with Mitigation)

The proposed Plan seeks to encourage and accommodate housing and employment growth within the Plan Area through amendments to the *Planning Code's* zoning districts and height/bulk limits. On the other hand, the Plan also includes goals to respect and enhance neighborhood character, which is in part defined by a neighborhood's history. For example, one of the goals of the Plan (Goal 8) is to "Ensure that new buildings enhance the character of the neighborhood and the City." Objective 8.6 states, "Promote high quality architecture that enhances the neighborhood;" accompanying that objective are the following Implementation Measures: Implementation Measure 8.6.2.2, "Harmonize new building designs with existing neighborhood materials but in a contemporary or reinterpreted way, and Implementation Measure 8.6.2.3, "Recognize and enhance existing local form material and geometry variations to support neighborhood-specific architecture.

While the Plan includes a number of policies to protect historic resources, and neighborhood character, which could protect individual resources or historic/conservation districts, one of the Plan's primary goals is to increase the capacity for jobs and housing (Goal 1). The Plan would accomplish this by increasing height limits and replacing exiting zoning districts that restrict the capacity for office and residential development with zoning that supports office and residential development. These policies could affect individual historic resources and/or historic/conservation districts as discussed below.

Effects on Individual Historic Architectural Resources

Where the Plan proposes the greatest increases in permitted building heights, individually identified historic architectural resources could be particularly vulnerable to demolition or substantial alteration. This would

most likely occur south of Harrison Street. Listed, designated, and eligible individual historic architectural resources that could be affected by an allowable increase in permitted building height from 85 feet or less to 130 to 160 feet include the following properties: 36 Bluxome Street, 53 Bluxome Street, 350 Townsend Street, 525 Fourth Street, 401 Fourth Street, 428 Third Street, 665 Harrison Street, 177 Stillman Street, and 539 Bryant Street. Listed, designated, and eligible individual historic architectural resources that could be affected by an allowable increase in permitted building height from 85 feet or less to over 160 feet include the following properties: 530 5th Street, 400 2nd Street, and 645 Harrison Street (see Figure IV.C-2, Historical Resources in the Plan Area and Vicinity, and Table APX-C-1 in Appendix C). In addition to proposed height changes, modifications to use districts could encourage site redevelopment, also contributing to the potential for historic resources to be altered substantially or demolished. As discussed in Chapter II, Project Description, proposed zoning district changes would, generally, remove land use restrictions (such as allowing residential and office in areas where these uses are limited or only allowed with certain restrictions) to support a greater mix of uses while also emphasizing office uses in the southern portion of the Plan Area (see Figure II-4 in Chapter II, Project Description). These proposed changes in allowable building heights and land uses could encourage redevelopment of a particular site, leading to material impairment to individual historic resources through demolition or substantial alterations, which would be a significant impact.

Effects on Historic Districts/Conservation Districts

New construction has the potential to affect the integrity of the historic districts by altering their design, setting, and feeling. For a district to retain integrity as a whole, the majority of its components must possess integrity and the relationship between those components must be substantially unchanged since the period of significance. A district is not eligible if it contains so many alterations or new intrusions that it no longer retains the integrity of the setting or conveys the sense of a historic environment. Likewise, contributors to historic districts that are located within the Plan Area may undergo major alterations, such as construction of additions in accordance with new height allowances or alterations to accommodate new uses. These changes may affect the appearance of the historic districts such that their character-defining features would be materially impaired.

As shown in Figures II-6 and II-7 in Chapter II, *Project Description*, no increases in height limits or changes in permitted uses are proposed in most of the designated historic and conservation districts in the Plan Area: including in the Sixth Street Lodginghouse Historic District, which appears eligible for listing in the National Register; or in the South Park Historic District, which appears eligible for listing in the California Register, thereby reducing the Plan's indirect impacts on districts. Demolition or substantial alteration of a contributing resource in any of these historic districts could materially impair the ability of the historic district to convey its significance. In addition, the Plan could indirectly contribute to this adverse effect by increasing the potential for development activity in the Plan Area.

The Plan would have a greater potential to affect the Bluxome and Townsend Warehouse Historic District, the western portion of the South End Landmark District, and the San Francisco Flower Mart Historic District. The Planning Department's Central SoMa Survey identifies the Bluxome and Townsend Warehouse Historic District, which occupies most of the sub-block bounded by Fifth, Sixth, Bluxome, and Townsend Streets, to be eligible for the National Register under Criterion A, association with important events, as an extant grouping of buildings erected during the post-earthquake and fire industrial rebuilding of the South of Market area in the early 20th century. The Plan proposes to increase the permitted building heights in the eastern portion of

this sub-block to 160 feet and change the use district underlying this historic district from Western SoMa's Service/Arts/Light Industrial (SALI) to Mixed-Use Office (MUO). This change would permit residential uses not currently allowed and office uses that are permitted only in historic buildings or related to the Hall of Justice. These changes could encourage redevelopment of particular sites and could therefore materially impair this district through alteration or demolition of contributors to the district including: two buildings that are contributing resources at 410 Townsend Street and 650 Fourth Street, other contributors at 444, 460, and 466 Townsend Street, and two contributors on Bluxome Street (149 and 157 Bluxome). Demolition or substantial alteration such that the district would be materially impaired would be considered a significant impact to the Bluxome Townsend Warehouse Historic District.

In the western portion of the South End Landmark District and the Plan's proposed westerly extension thereto, there would modest changes in allowable height limits (from 55 feet to 85 feet on one parcel), but the use district would change from SLI, where office and market-rate residential uses are not allowed, to MUO, where development of these uses would be allowed. The change to a less restrictive use district could result in an increase in development pressure and thus indirectly play a role in a significant impact related to demolition or substantial alteration of contributors to this historic district.

As described in above, the California Register-eligible San Francisco Flower Mart Historic District consists of five interconnected structures on the block bounded by Bryant, Fifth, Brannan, and Sixth Streets. It is significant for the California Register under Criteria 1 and 3 for its associations with San Francisco's floral industry and inter-ethnic commercial cooperation, as well as its purpose-built design by master architect Mario Ciampi. Under the Plan, the height limits on this site would be increased from 40 feet to 270 feet, which would potentially allow for approval of a currently proposed project at the site that would demolish the existing Flower Mart buildings and reconstruct the Flower Mart as part of a mixed-use project that would contain about 2 million square feet of office space, about 89,000 square feet of retail/restaurant space, a new 125,000 square foot Flower Mart, along with publicly accessible open space. The project would include three towers, ranging up to 270 feet in height, as well as mid-rise buildings. This subsequent development project, were it to be approved, would result in the loss of all of the contributors to this California Register-eligible San Francisco Flower Mart Historic District, which would be a significant and unavoidable impact.

Impact Evaluation for Individual Historic Architectural Resources and Historic Districts/Conservation Districts

When an Environmental Evaluation Application is filed with the Environmental Planning Division of the Planning Department for a project that would result in demolition or alteration of an individual historic architectural resource or a contributor to a historic district or conservation district, or would result in new construction within or immediately adjacent to such a district, Preservation staff will conduct an initial evaluation of the building and of the proposed project. Should staff determine that there is potential for the project to materially alter an individual resource or an important historic characteristic of the district, the project sponsor will be required to contract for preparation of an Historic Resource Evaluation (HRE) by a qualified professional consultant who meets the Secretary of the Interior's Professional Qualification Standards in Historic Architecture, Architectural History, History, or Preservation Planning. The HRE will be reviewed by Preservation staff within the Current Planning Division. If, through this process, a significant impact on a resource or a district is identified and concurred with by Preservation staff and the Environmental

Review Officer, mitigation measures and alternatives will be required to avoid or reduce the impact on the resource or the district to a less-than-significant level, if feasible.

Nevertheless, the possibility exists that one or more projects could result in demolition or substantial alteration of an individual resource, which would be considered a significant impact. In addition, one or more projects could result in demolition or substantial alteration of contributors to a historic district or conservation district, such that the district would sustain material alteration, which could be considered a significant impact.

As noted in CEQA Guidelines Section 15064.5(b)(3), a project that is consistent with the Secretary of the Interior's Standards "shall be considered as mitigated to a less-than-significant impact." Nevertheless, it is likely that not all significant impacts on individual resources, as well as historic districts and their contributing resources, can be avoided within the Plan Area. In summary, it is likely that the implementation of the Plan would result in a significant adverse impact on identified historical resources.

The likelihood of such impacts would increase as newer buildings become historical resources once they age, with 45 years generally being the minimum age for historic consideration. Additionally, new information may come to light that results in a re-evaluation of a building, regardless of age, that was previously determined not to be a historical resource, particularly with regard to forthcoming information that may come to light in the African American Citywide Historic Context Statement currently under review by the City, as well as the first citywide Latino Historic Context Statement currently underway, entitled *Nuestra Historia: Documenting the Chicano, Latino, and Indígena Contribution to the Development of San Francisco*. Additionally, new categories of resources may emerge from ongoing research; as described in the setting, the Planning Department has developed social heritage inventory forms for evaluation of resources that may not be formally identified as cultural resources under CEQA. Some such social heritage resources, however, may also qualify as cultural resources for the purposes of CEQA evaluation and may be so recognized in the future. As with historic architectural resources, at the time that a subsequent development project is proposed that would demolish or alter such a cultural resource, the Planning Department's Preservation staff may require additional research to conclusively determine whether the building is a historical resource under CEQA. If, through this process, a building is identified as an individual resource or a district contributor, alternatives and mitigation measures may be identified that avoid or reduce the impact to a less-than-significant level, if feasible. However, in cases where a building is proposed for demolition or substantial alteration, impacts to individual resources and/or historic/conservation districts could be significant.

To reduce the above impacts on individual historical resources and historic districts, which are themselves historical resources, **Mitigation Measures M-CP-1a to M-CP-1e**, as outlined below, would be required within the Plan Area; these measures would be applied to individual and contributing resources through a step-wise approach, in which the preferred measure, M-CP-1a, Avoidance or Minimization of Effects on Historical Resources, would be required of subsequent development projects unless shown to be infeasible, in which case Mitigation Measures M-CP-1b and, if determined appropriate, M-CP-1c, M-CP-1d, and M-CP-1e could also apply. Mitigation Measures M-CP-1a through M-CP-1e would also apply in circumstances when a determination is made by the Planning Department during the environmental review process for a subsequent development project that an individual resource or a historic district or conservation district would be significantly affected by such a project. Although this would reduce impacts on the historical resources, this impact would not be reduced to a less-than-significant level because demolition that could occur as an indirect

result of the Plan would be considered a significant impact and it is uncertain whether those alterations could be reduced to less than significant. Therefore, the impact would remain *significant and unavoidable*.

Mitigation Measures

Mitigation Measure M-CP-1a: Avoidance or Minimization of Effects on Identified Historical Resources. The project sponsor of a subsequent development project in the Plan Area shall consult with the Planning Department's Preservation staff to determine whether there are feasible means to redesign or otherwise revise the project to avoid significant adverse effects on historic architectural resource(s) (including historic districts), whether previously identified or identified as part of the project's historical resources analysis. If avoidance is not feasible, the project sponsor shall seek feasible means to reduce effects on historic architectural resource(s) to a less-than-significant level, with the significance of the impact to be judged based on whether the proposed project would materially impair the resource as defined in CEQA Guidelines Section 15064.5(b).

Should Mitigation Measure M-CP-1a be determined to be infeasible, the following measures shall be applicable, based on the specific circumstances of the project in question. CEQA Guidelines Section 15364 defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." The applicability of each factor would vary from project to project, and would be determined by staff on a case-by-case basis.

Mitigation Measure M-CP-1b: Documentation of Historical Resource(s). Where avoidance of effects to a less-than-significant level is not feasible, as described in M-CP-1a, the project sponsor of a subsequent development project in the Plan Area shall undertake historical documentation prior to the issuance of demolition or site permits. To document the buildings more effectively, the sponsor shall prepare Historic American Buildings Survey (HABS)-level photographs and an accompanying HABS Historical Report, which shall be maintained on-site, as well as in the appropriate repositories, including but not limited to, the San Francisco Planning Department, San Francisco Architectural Heritage, the San Francisco Public Library, and the Northwest Information Center. The contents of the report shall include an architectural description, historical context, and statement of significance, per HABS reporting standards. The documentation shall be undertaken by a qualified professional who meets the standards for history, architectural history, or architecture (as appropriate), as set forth by the *Secretary of the Interior's Professional Qualification Standards* (36 Code of Federal Regulations, Part 61). HABS documentation shall provide the appropriate level of visual documentation and written narrative based on the importance of the resource (types of visual documentation typically range from producing a sketch plan to developing measured drawings and view camera (4x5) black and white photographs). The appropriate level of HABS documentation and written narrative shall be determined by the Planning Department's Preservation staff. The report shall be reviewed by the Planning Department's Preservation staff for completeness. In certain instances, Department Preservation staff may request HABS-level photography, a historical report, and/or measured architectural drawings of the existing building(s).

This mitigation measure would create a collection of preservation materials that would be available to the public and inform future research. In this way, documentation of the affected properties and presentation of the findings to the community could reduce the impact on historical resources. Although implementation of this mitigation measure may reduce impacts on historical resources, it would not reduce the impact to a less-than-significant level because only avoidance of substantial adverse changes would reduce impacts to less-than-significant levels.

Mitigation Measure M-CP-1c: Oral Histories. For projects that would demolish a historical resource or contributor to a historic district for which Planning Department preservation staff determined that such a measure would be effective and feasible, the project sponsor shall undertake an oral history project that includes interviews of people such as residents, past owners, or former employees. The project shall be conducted by a professional historian in conformance with the Oral History Association's Principles and Standards (http://alpha.dickinson.edu/oha/pub_eg.html). In addition to transcripts of the interviews, the oral history project shall include a narrative project summary report containing an introduction to the project, a methodology description, and brief summaries of each conducted interview. Copies of the completed oral history project shall be submitted to the San Francisco Public Library, Planning Department, or other interested historical institutions.

Although implementation of this mitigation measure may reduce impacts on historical resources, it is not expected to reduce impacts to less-than-significant levels because only avoidance of substantial adverse changes to historical resources would reduce impacts to less-than-significant levels.

Mitigation Measure M-CP-1d: Interpretive Program. For projects that would demolish a historical resource or contributor to a historic district for which Preservation Planning staff determined that such a measure would be effective and feasible, the project sponsor shall work with Department Preservation staff or other qualified professional to institute an interpretive program on-site that references the property's history and the contribution of the historical resource to the broader neighborhood or historic district. An example of an interpretive program is the creation of historical exhibits, incorporating a display featuring historic photos of the affected resource and a description of its historical significance, in a publicly accessible location on the project site. This may include a website or publically-accessible display. The contents of the interpretative program shall be determined by the Planning Department Preservation staff. The development of the interpretive displays should be overseen by a qualified professional who meets the standards for history, architectural history, or architecture (as appropriate) set forth by the *Secretary of the Interior's Professional Qualification Standards* (36 Code of Federal Regulations, Part 61). An outline of the format, location and content of the interpretive displays shall be reviewed and approved by the San Francisco Planning Department's Preservation staff prior to issuance of a demolition permit or site permit. The format, location and content of the interpretive displays must be finalized prior to issuance of any Building Permits for the project.

Although implementation of this mitigation measure may reduce impacts on historical resources, it is not expected to reduce impacts to less-than-significant levels because only avoidance of substantial adverse changes to historical resources would reduce impacts to less-than-significant levels.

Mitigation Measure M-CP-1e: Video Recordation. For projects that would demolish a historical resource or contributor to a historic district for which Preservation Planning staff determined that such a measure would be effective and feasible, the project sponsor shall work with Department Preservation staff or other qualified professional, to undertake video documentation of the affected historical resource and its setting. The documentation shall be conducted by a professional videographer, preferably one with experience recording architectural resources. The documentation shall be narrated by a qualified professional who meets the standards for history, architectural history, or architecture (as appropriate), as set forth by the *Secretary of the Interior's Professional Qualification Standards* (36 Code of Federal Regulations, Part 61). The documentation shall include as much information as possible—using visuals in combination with narration—about the materials, construction methods, current condition, historic use, and historic context of the historical resource.

Archival copies of the video documentation shall be submitted to the Planning Department, and to repositories including but not limited to: the San Francisco Public Library, Northwest Information Center and the California Historical Society. This mitigation measure would supplement the traditional HABS documentation, and would enhance the collection of reference materials that would be available to the public and inform future research.

The video documentation shall be reviewed and approved by the San Francisco Planning Department's Preservation staff prior to issuance of a demolition permit or site permit or issuance of any Building Permits for the project.

Implementation of this mitigation measure would assist in reducing project-specific impacts, but would not reduce impacts to a less-than-significant level because only avoidance of substantial adverse changes to historical resources would reduce impacts to less-than-significant levels.

Significance after Mitigation: Although in certain cases it may be possible to modify a project to avoid or reduce impacts on historic architectural resources to a less-than-significant level, where such modification is not feasible, demolition or substantial modification of historic architectural resources that cannot be avoided or minimized would be considered a *significant and unavoidable*.

Effects of the Street Network Changes and Open Space Improvements

Impact CP-2: Neither the proposed open space improvements nor street network changes would adversely affect historic architectural resources in a way that would result in a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5. (Less than Significant)

Proposed Street Network Changes

Integrity of setting is an important facet of a historic district. The Plan Area is characterized by its large 100-vara blocks, wide thoroughfares, small mid-block alleys, nearly solid street faces without building setbacks, standard width (12-foot) sidewalks, and some street trees. These features characterize the neighborhood's insular and higher-density residential enclaves and lower-density light industrial nature.

The project proposes to alter the street system to improve circulation while providing a safe and attractive pedestrian environment. In order to guide these alterations, the project includes upgraded sidewalks and crosswalks, including new corner sidewalk extensions (bulb-outs), creating a network of safe bicycle routes, new dedicated transit lanes proposed on Fourth, Harrison, Bryant, and Folsom Streets, as well as One-Way and Two-Way Options along Howard and Folsom Streets.

The implementation of these aspects of the Plan would have no direct impacts on historical resources, as they would occur within the public rights-of-way, but they do have the potential to affect the integrity of setting of the existing and potential historic districts within the Plan Area (for example, a building's relationship to the street could be altered if the sidewalk is widened), albeit in a limited manner, in that buildings themselves would not be altered by the street network changes, nor would the widths of rights-of-way change.

The transportation improvements would occur within the South End Landmark District, listed in Article 10 of the *Planning Code*; the California Register-eligible Sixth Street Lodginghouse District; and—outside the Plan

Area—within the Western SoMa Light Industrial Historic District. However, while the South of Market area's wide streets are characteristic of the large Western SoMa Light Industrial Historic District, the width of sidewalks, the number of travel lanes, and the direction of traffic flow are not character-defining features of any of these historic districts; thus, changes in those aspects of the transportation network would have no effect on any of the historic districts and the impact would be *less than significant*.

Proposed Open Space Improvements

Like the proposed Street Network Changes, the Plan's proposed new open spaces, including both parks and landscaped streets and alleys, would result in some loss of integrity of the Plan Area, given that the neighborhood's historically industrial character would be softened somewhat by the introduction of landscaping and potential amenities such as playground equipment. No historic resources would be altered as a result of the development of new open spaces, nor would the widths of rights-of-way change. As a result, impacts of the proposed open space improvements on historical resources would be *less than significant*.

Mitigation: None required.

Construction Impacts

Impact CP-3: Construction activities in the Plan Area would result in a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5, through indirect construction damage to historic architectural resources. (Less than Significant with Mitigation)

As described in Section IV.E, Noise and Vibration, construction activity can generate vibration that can cause structural damage in nearby buildings. In general, even pile driving, which causes the greatest vibration levels during construction, is sufficiently attenuated by distance such that the peak particle velocity (PPV) at 100 feet from pile driving is less than 0.2 inch per second (0.2 PPV), the standard established by the Federal Transit Administration for potential damage to non-engineered timber and masonry buildings. At closer distances, pile driving, and possibly other construction activity, could damage historical resources, particularly unreinforced masonry structures. Should such damage materially impair an historic resource, this would be a significant impact. Implementation of **Mitigation Measures M-CP-3a, Protect Historical Resources from Adjacent Construction Activities**, and **M-CP-3b, Construction Monitoring Program for Historical Resources**, would reduce potential construction impacts to historic architectural resources to less-than-significant levels. These mitigation measures would be applicable to all construction projects within the Plan Area.

Mitigation Measures

Mitigation Measure M-CP-3a: Protect Historical Resources from Adjacent Construction Activities.

The project sponsor of a development project in the Plan Area shall consult with Planning Department Environmental Planning/Preservation staff to determine whether adjacent or nearby buildings constitute historical resources that could be adversely affected by construction-generated vibration. For purposes of this measure, nearby historic buildings shall include those within 100 feet of a construction site for a subsequent development project if pile driving would be used at that site; otherwise, it shall include historic buildings within 25 feet if vibratory and vibration-generating

construction equipment, such as jackhammers, drill rigs, bulldozers, and vibratory rollers would be used. If one or more historical resources is identified that could be adversely affected, the project sponsor shall incorporate into construction specifications for the proposed project a requirement that the construction contractor(s) use all feasible means to avoid damage to adjacent and nearby historic buildings. Such methods may include maintaining a safe distance between the construction site and the historic buildings (as identified by the Planning Department Preservation staff), using construction techniques that reduce vibration (such as using concrete saws instead of jackhammers or hoe-rams to open excavation trenches, the use of non-vibratory rollers, and hand excavation), appropriate excavation shoring methods to prevent movement of adjacent structures, and providing adequate security to minimize risks of vandalism and fire. No measures need be applied if no vibratory equipment would be employed or if there are no historic buildings within 100 feet of the project site.

Mitigation Measure M-CP-3b: Construction Monitoring Program for Historical Resources. For those historical resources identified in Mitigation Measure M-CP-3a, and where heavy equipment would be used on a subsequent development project, the project sponsor of such a project shall undertake a monitoring program to minimize damage to adjacent historic buildings and to ensure that any such damage is documented and repaired. The monitoring program, which shall apply within 100 feet where pile driving would be used and within 25 feet otherwise, shall include the following components. Prior to the start of any ground-disturbing activity, the project sponsor shall engage a historic architect or qualified historic preservation professional to undertake a pre-construction survey of historical resource(s) identified by the San Francisco Planning Department within 125 feet of planned construction to document and photograph the buildings' existing conditions. Based on the construction and condition of the resource(s), the consultant shall also establish a standard maximum vibration level that shall not be exceeded at each building, based on existing condition, character-defining features, soils conditions, and anticipated construction practices (a common standard is 0.2 inch per second, peak particle velocity). To ensure that vibration levels do not exceed the established standard, the project sponsor shall monitor vibration levels at each structure and shall prohibit vibratory construction activities that generate vibration levels in excess of the standard.

Should vibration levels be observed in excess of the standard, construction shall be halted and alternative construction techniques put in practice, to the extent feasible. (For example, pre-drilled piles could be substituted for driven piles, if feasible based on soils conditions; smaller, lighter equipment might be able to be used in some cases.) The consultant shall conduct regular periodic inspections of each building during ground-disturbing activity on the project site. Should damage to either building occur, the building(s) shall be remediated to its pre-construction condition at the conclusion of ground-disturbing activity on the site.

Significance after Mitigation: With implementation of **Mitigation Measure M-CP-3a: Protect Historical Resources from Adjacent Construction Activities** and **Mitigation Measure M-CP-3b: Construction Monitoring Program for Historical Resources**, impacts would be *less than significant*.

Effects on Archeological Resources

Impact CP-4: Development under the Plan, including the proposed open space improvements and street network changes, would cause a substantial adverse change in the significance of an archeological resource pursuant to CEQA Guidelines Section 15064.5. (Less than Significant with Mitigation)

Previous archeological research, including geoarcheological analysis and the location and constituents of known prehistoric and historic-period archeological resources, shows that legally significant resources, including archeologically-significant human remains and associated or unassociated funerary objects, are present, or likely present, in the Plan Area and vicinity and that currently unknown resources are also likely to be in the Plan Area and vicinity.

Based on the results of a records search at the Northwest Information Center, the Plan Area and vicinity, as a whole, is likely to contain significant prehistoric archeological resources. A total of seven prehistoric archeological sites (CA-SFR-2, -113, -114, -147, -155, and -175 and P-38-004499) have been formally recorded within the Plan Area and vicinity through the Northwest Information Center, and one site with both prehistoric and historical components (CA-SFR-154/H) has been recorded.¹⁷⁹ Two additional prehistoric archeological sites (CA-SFR-112 and -135), and one site with both prehistoric and historical components (CA-SFR-151/H), have been recorded within the Plan Area and vicinity.¹⁸⁰

Prehistoric archeological sites in the South of Market area have largely only come to light since the 1980s and are thought to possess good physical integrity as a result of having been buried beneath natural sand dune deposits for hundreds of years following their abandonment. The majority of known prehistoric sites in the South of Market area are no more than 2,000 years old and are found buried at depths of approximately 10 to 20 feet below ground surface. All of these resources were encountered below the current urban land surface, typically during formal archeological investigations, and many of the prehistoric sites were also buried under natural dune sands that were blown eastward from the Pacific coast, across the peninsula (over the past 6,000 years or so). The 11 sites with prehistoric components within the records search area all appear to be Late Holocene shell middens situated within sand dunes near the edge of former Mission Bay or Yerba Buena Cove. The full extent of these prehistoric occupations is uncertain, since only the portions within the relevant construction areas were studied and additional portions may well extend beyond those limits.

Legally significant prehistoric and historic-period archeological resources could be damaged or destroyed through earthwork, ground stabilization, or other subsurface construction activities that would be undertaken by subsequent individual development projects allowed under the Plan, including open space and streetscape improvements, particularly projects that would require deeper foundations due to poor underlying soils and/or taller structures being proposed. Because the entire Plan Area and vicinity is within the part of San Francisco that burned following the 1906 earthquake, the area is generally covered by up to 5 feet of artificial fill consisting of earthquake debris. In general, any project-related ground disturbance deeper than 5 feet has the potential to affect archeological resources.

¹⁷⁹ Site P-38-004499 has not been assigned a trinomial identification number, as have the other sites noted.

¹⁸⁰ Far Western Anthropological Research Group, Inc., 2014 (see footnote 44, p. 1), pp. 7-9.

Impacts to archeological resources can only be understood once a specific project has been proposed because the effects are highly dependent on both the individual project site conditions and the characteristics of the proposed ground-disturbing activity. However, implementation of the Plan and proposed open space improvements and street network changes have the potential to result in *significant impacts* on archeological resources as new buildings and infrastructure are gradually constructed throughout the Plan Area, and as the street and circulation system is modified.

The procedures in Mitigation Measure M-CP-4a would apply to subsequent development projects in the Plan Area, and would reduce impacts to less-than-significant levels. In most cases, if an archeological resource that is a historical resource due of its prehistoric or historical information value, that is, its scientific data potential (Criterion 4) is present, a significant effect would be the impairment of the potential information value of the resource. Although preservation of an archeological resource in place is always the preferred option, when preservation in place is not feasible, data recovery, in accordance with a data recovery plan prepared and adopted by the lead agency prior to any soils disturbance, is generally the appropriate mitigation approach. Mitigation Measure M-CP-4a would ensure appropriate identification efforts are conducted before soils-disturbing or soils-improving activities take place, and if archeological resources are identified, would ensure appropriate data recovery is conducted to reduce impacts to a less-than-significant level.

Mitigation Measures

Mitigation Measure M-CP-4a: Project-Specific Preliminary Archeological Assessment. This archeological mitigation measure shall apply to any project involving any soils-disturbing or soils-improving activities including excavation, utilities installation, grading, soils remediation, compaction/chemical grouting to a depth of five (5) feet or greater below ground surface, for which no archeological assessment report has been prepared.

Projects to which this mitigation measure applies shall be subject to Preliminary Archeology Review (PAR) by the San Francisco Planning Department archeologist.

Based on the PAR, the Environmental Review Officer (ERO) shall determine if there is a potential for effect to an archeological resource, including human remains, and, if so, what further actions are warranted to reduce the potential effect of the project on archeological resources to a less-than-significant level. Such actions may include project redesign to avoid the potential to affect an archeological resource; or further investigations by an archeological consultant, such as preparation of a project-specific Archeological Research Design and Treatment Plan (ARDTP) or the undertaking of an archeological monitoring or testing program based on an archeological monitoring or testing plan. The scope of the ARDTP, archeological testing or archeological monitoring plan shall be determined in consultation with the ERO and consistent with the standards for archeological documentation established by the Office of Historic Preservation (OHP) for purposes of compliance with CEQA (OHP Preservation Planning Bulletin No. 5). Avoidance of effect to an archeological resource is always the preferred option.

Additionally, excavation, grading, and installation of building foundations as part of future construction activities within the Plan Area could expose and cause impacts on unknown archeological resources, which would be a significant impact. Implementation of **Mitigation Measure M-CP-4b, Procedures for Accidental Discovery of Archeological Resources**, would reduce those impacts to less-than-significant levels.

Mitigation Measure M-CP-4b: Procedures for Accidental Discovery of Archeological Resources. This mitigation measure is required for projects that would result in soil disturbance and are not subject to Mitigation Measure M-CP-4a.

Should any indication of an archeological resource, including human remains, be encountered during any soils-disturbing activity of the project, the project head foreman and/or project sponsor shall immediately notify the ERO and shall immediately suspend any soils-disturbing activities in the vicinity of the discovery until the ERO has determined what additional measures should be undertaken.

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

Measures might include preservation in situ of the archeological resource, an archeological monitoring program, an archeological testing program, or an archeological treatment program. If an archeological treatment program, archeological monitoring program or archeological testing program is required, it shall be consistent with the Planning Department's Environmental Planning (EP) division guidelines for such programs. The ERO may also require that the project sponsor immediately implement a site security program if the archeological resource is at risk from vandalism, looting, or other damaging actions. If human remains are found all applicable state laws will be followed as outlined in Impact CP-7 and an archeological treatment program would be implemented in consultation with appropriate descendant groups and approved by the ERO.

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

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

Significance after Mitigation: With implementation of **Mitigation Measure M-CP-4a: Project-Specific Preliminary Archeological Assessment** and **Mitigation Measure M-CP-4b: Procedures for Accidental Discovery of Archeological Resources**, impacts to archeological resources would be *less than significant*.

Effects on Tribal Cultural Resources

Impact CP-5: Development under the Plan, including the proposed open space improvements and street network changes, could cause a substantial adverse change in the significance of a tribal cultural resource pursuant to CEQA Guidelines Section 21084.3. (Less than Significant with Mitigation)

As noted above, to date, only prehistoric archeological sites have been identified as potential tribal cultural resource sites in San Francisco. These resources could be damaged or destroyed through earthwork, ground stabilization, or other subsurface construction activities associated with development in the Plan Area or vicinity, resulting in a *significant impact*. This potential would exist for subsequent individual development projects allowed under the Plan, including streetscape improvements and open space improvements, and particularly so for projects that would require deeper foundations due to poor underlying soils and/or when taller structures are proposed. Effects on tribal cultural resources (as with archeological resources) are only knowable once a specific project has been proposed, because the effects are highly dependent on both the individual project site conditions and the characteristics of the proposed ground-disturbing activity.

Mitigation Measures

Mitigation Measure M-CP-5: Project-Specific Tribal Cultural Resource Assessment. This tribal cultural resource mitigation measure shall apply to any project involving any soils-disturbing or soils-improving activities including excavation, utilities installation, grading, soils remediation, compaction/chemical grouting to a depth of five (5) feet or greater below ground surface.

Projects to which this mitigation measure applies shall be reviewed for the potential to affect a tribal cultural resource in tandem with Preliminary Archeology Review (PAR) of the project by the San Francisco Planning Department archeologist. For projects requiring a Mitigated Negative Declaration or Environmental Impact Report, the Department “Notification Regarding Tribal Cultural Resources and CEQA” shall be distributed to the Department tribal distribution list. Consultation with California Native American tribes regarding the potential of the project to affect a tribal cultural resource will occur at the request of any notified tribe. For all projects subject to this mitigation measure, if staff determines that the proposed project may have a potential significant adverse effect on a tribal cultural resource, then the following shall be required as determined warranted by the ERO.

If staff determines that preservation-in-place of the tribal cultural resource is both feasible and effective, based on information provided by the applicant regarding feasibility and other available information, then the project archeological consultant shall prepare an archeological resource preservation plan (ARPP). Implementation of the approved ARPP by the archeological consultant shall be required when feasible. If staff determines that preservation-in-place of the TCR is not a sufficient or feasible option, then the project sponsor shall implement an interpretive program of the TCR in coordination with affiliated Native American tribal representatives. An interpretive plan produced in coordination with affiliated Native American tribal representatives, at a minimum, and approved by the ERO shall be required to guide the interpretive program. The plan shall identify proposed locations for installations or displays, the proposed content and materials of those displays or installation, the producers or artists of the displays or installation, and a long-term maintenance program. The interpretive program may include artist installations, preferably by local Native American artists, oral histories with local Native Americans, artifacts displays and interpretation, and educational panels or other informational displays.

Significance after Mitigation: Under Assembly Bill 52, consultation with Native American tribal groups regarding identification, potential to affect, or appropriate mitigation occurs at the request of the tribal group for projects that require a Mitigated Negative Declaration or Environmental Impact Report. Mitigation measures may include avoidance, protection, or preservation of the tribal cultural resources and development of interpretation and public education and artistic programs. Implementation of **Mitigation Measure M-CP-5: Project-Specific Tribal Cultural Resource Assessment**, would reduce potential impacts to tribal cultural resources to *less-than-significant* levels.

Effects on Paleontological Resources

Impact CP-6: Development under the Plan, including the proposed open space improvements and street network changes, would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature. (Less than Significant)

Based on the information presented under “Environmental Setting,” above, there is a low potential for project activities to uncover unique or significant fossils within the Plan Area or vicinity. Construction excavations, depending on location, could encounter undisturbed dune sands, the Colma Formation, or artificial fills associated with previous development (e.g., road bases, foundations, and previous backfills for underground utilities). Due to their age and origin, these geological materials have little to no likelihood of containing unique or significant fossils. Therefore, the potential for subsequent development projects that could occur as a result of the Plan to effect paleontological resources would be *less than significant*, and no mitigation would be required.

Mitigation: None required.

Effects on Human Remains

Impact CP-7: Development under the Plan, including the proposed open space improvements and street network changes, would not disturb human remains, including those interred outside of formal cemeteries. (Less than Significant)

Archeological materials, including human burials, have been found in San Francisco. Human burials outside of formal cemeteries often occur both in prehistoric and historic-period archeological contexts. Excavation associated with new construction activities in the Plan Area may have the potential to disturb these resources, including Native American burials. Project-specific ground-disturbing activity could result in direct impacts on previously undiscovered human remains. Impacts to archeologically significant human remains are addressed and mitigated under Impact CP-4, and Mitigation Measures CP-4a and CP-4b.

The treatment of human remains and of associated or unassociated funerary objects discovered during any soil-disturbing activities must comply with applicable state laws. This includes immediate notification of the county coroner and, in the event of the coroner’s determination that the human remains are Native American, notification of the California Native American Heritage Commission, which shall appoint a Most Likely Descendant (MLD) (*California Public Resources Code* Section 5097.98). In the event of such discovery, the

archeological consultant, the San Francisco Planning Department, and MLD would make all reasonable efforts to develop an agreement for the treatment, with appropriate dignity, of human remains and associated or unassociated funerary objects, in accordance with CEQA Guidelines Section 15064.5(d). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. Nothing in existing state regulations compels the project sponsor and the ERO to accept recommendations of an MLD. If the MLD and the other parties do not agree on the reburial method, the project sponsor must comply with Section 5097.98(e) of the *Public Resources Code*, which states that “the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance.” Therefore, impacts to human remains would be *less than significant*.

Mitigation: None required.

IV.C.5 Cumulative Impacts

Impact C-CP-1: Development under the Plan, in combination with past, present, and reasonably foreseeable future projects in the vicinity, could result in demolition and/or alteration of historical resources, thereby contributing considerably to significant cumulative historical resources impacts. (Significant and Unavoidable with Mitigation)

Development under the Plan may contribute to the loss of individual historic resources and contributors to historic districts by encouraging demolition and alteration of such resources in the Plan Area. These impacts could combine with similar impacts in areas outside the Plan Area to result in significant cumulative impacts in the number of individually eligible historic resources within the SoMa neighborhood and cumulative effects to historic districts that overlap within the Plan area and adjacent areas. For example, the historic character of SoMa is generally defined by the numerous industrial and utilitarian buildings located in the Plan Area. Demolition of those buildings could combine with the demolition and/or alteration of similar buildings throughout the SoMa neighborhood, resulting in significant cumulative impacts. The proposed Plan could contribute considerably to this impact, and several mitigation measures have been identified that could mitigate this impact to less than significant. However, because it is uncertain whether or not these mitigation measures could reduce impacts to less than significant, this impact is determined to be *significant and unavoidable*.

Additionally, the demolition and/or substantial alteration of buildings in the Plan Area, combined with the demolition or substantial alteration of historical resources in other parts of Western SoMa and/or East SoMa, could affect the cohesiveness of historic districts that extend beyond the Plan Area, including the 6th Street Lodging House Historic District and the South End Landmark District. As a higher percentage of contributing resources is beneficial to the integrity of a historic district, a reduction in the proportion of contributors over time could diminish the viability of these districts, resulting in a significant cumulative impact to historic/conservation districts.

Therefore, the potential exists that the increased heights and densities allowable under the Plan, combined with past, present, and reasonable foreseeable projects that could demolish or substantially alter historic district contributors and could contribute to a significant cumulative impact on historical resources. Overall,

while **Mitigation Measures M-CP-1a through M-CP-1e** would reduce the cumulative impacts of the Plan on historical resources, such impacts would remain *significant and unavoidable*.

Mitigation: Implement **Mitigation Measures M-CP-1a, Avoidance or Minimization of Effects on Historical Resources, M-CP-1b, Documentation of Historical Resource(s); M-CP-1c, Oral Histories; M-CP-1d, Interpretive Program; and M-CP-1e, Video Recordation.**

Significance after Mitigation: Significant and Unavoidable.

Impact C-CP-2: The proposed open space improvements and street network changes within the Plan Area, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute considerably to significant cumulative historical resources impacts. (Less than Significant)

As stated above, implementation of the proposed street network changes would have no direct impacts on historical resources, as they would occur within the public rights-of-way. No buildings would be altered as a result of the development of new open spaces, nor would the widths of rights-of-way change. Therefore, neither the proposed street network changes nor development of new open space(s) would contribute considerably to a cumulative impact related to historical resources.

Mitigation: None required.

Impact C-CP-3: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable future projects in the vicinity, could cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5 or a tribal cultural resource pursuant to CEQA Guidelines Section 21084.3. (Less than Significant with Mitigation)

The cumulative context for archeological and tribal cultural resources is the Plan Area and vicinity. Ground-disturbing activities in the Plan Area could encounter previously recorded and unrecorded archeological resources, which may also be considered tribal cultural resources. Projects allowed under the Plan, in combination with past, present, and reasonably foreseeable projects in the Plan Area that also involve ground disturbance and could also encounter previously recorded and unrecorded archeological resources or human remains, could result in a significant cumulative impact on archeological resources.

Implementation of **Mitigation Measures M-CP-4a, M-CP-4b, and M-CP-5** would reduce the Plan's contribution to cumulative archeological and tribal cultural impacts to a less-than-significant level. Impacts to archeological resources, which may also be considered tribal cultural resources, are only knowable once a specific project has been proposed because the effects are highly dependent on both the individual project site conditions and the characteristics of the proposed ground-disturbing activity. Subsequent development project-related impacts on archeological or tribal cultural resources would be site-specific and limited to the project construction areas, and would be reduced to less-than-significant levels with implementation of project-specific measures in Mitigation Measures M-CP-4a, M-CP-4b, and M-CP-5. Therefore, the Plan's contribution would be reduced to a *less-than-significant* level by implementing Mitigation Measures M-CP-4a, M-CP-4b, and M-CP-5.

Mitigation: Implement Mitigation Measures M-CP-4a, Project-Specific Preliminary Archeological Assessment; M-CP-4b, Procedures for Accidental Discovery of Archeological Resources; and M-CP-5: Project-Specific Tribal Cultural Resource Assessment.

Significance after Mitigation: Less than Significant.

Impact C-CP-4: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature, and would not disturb human remains, including those interred outside of formal cemeteries. (Less than Significant)

The cumulative context for archeological resources is the Plan Area and vicinity. Construction excavation, in combination with past, present, and reasonably foreseeable projects in the Plan Area and vicinity that also involve ground disturbance, depending on location, could encounter undisturbed dune sands, the Colma Formation, or artificial fills associated with previous development (e.g., road bases, foundations, and previous backfills for underground utilities). Due to their age and origin, these geological materials have little to no likelihood of containing unique or significant fossils. Therefore, the cumulative impact related to direct or indirect effects on paleontological resources would be less than significant, and no mitigation would be required.

Construction excavations, in combination with past, present, and reasonably foreseeable projects in the Plan Area that also involve ground disturbance, may have the potential to disturb previously undiscovered human remains, including Native American burials. Because the potential disturbance to human remains is governed by state laws and regulations, as described above, compliance with these laws and regulations would avoid any potentially significant impacts related to such disturbance within the Plan Area. Therefore, the cumulative impact related to the potential to disturb human remains would be less than significant, and no mitigation would be required.

Mitigation: None required.

IV.D Transportation and Circulation

IV.D.1 Introduction

Section IV.D, Transportation and Circulation, summarizes and incorporates by reference the results of the Transportation Impact Study (TIS) prepared by the transportation consultants for the Central SoMa Plan (Plan or proposed project) in accordance with the San Francisco Planning Department's 2002 *Transportation Impact Analysis Guidelines for Environmental Review (SF Guidelines)*.¹⁸¹ The transportation analysis examines project impacts on vehicle miles traveled (VMT), traffic hazards, transit, pedestrians, bicycles, loading, emergency vehicle access, parking, as well as the impacts of construction activities on the transportation network. All of these transportation subtopics are considered in the discussions of existing conditions; existing plus Plan; and year 2040 cumulative conditions.

IV.D.2 Environmental Setting

The transportation study area is generally bounded by Market, Second, King, and Sixth Streets (see **Figure IV.D-1, Transportation Study Area**). However, because some of the proposed streetscape improvements extend beyond the area of proposed land use changes, and because some transportation effects of the proposed land use program may extend beyond the area to be rezoned, the transportation study area also includes:

- A western extension bounded by Mission, 12th, and Bryant Streets;
- An eastern extension bounded by Folsom Street, The Embarcadero, and Bryant Street; and
- A northern extension bounded by Market, Second, and Sixth Streets.

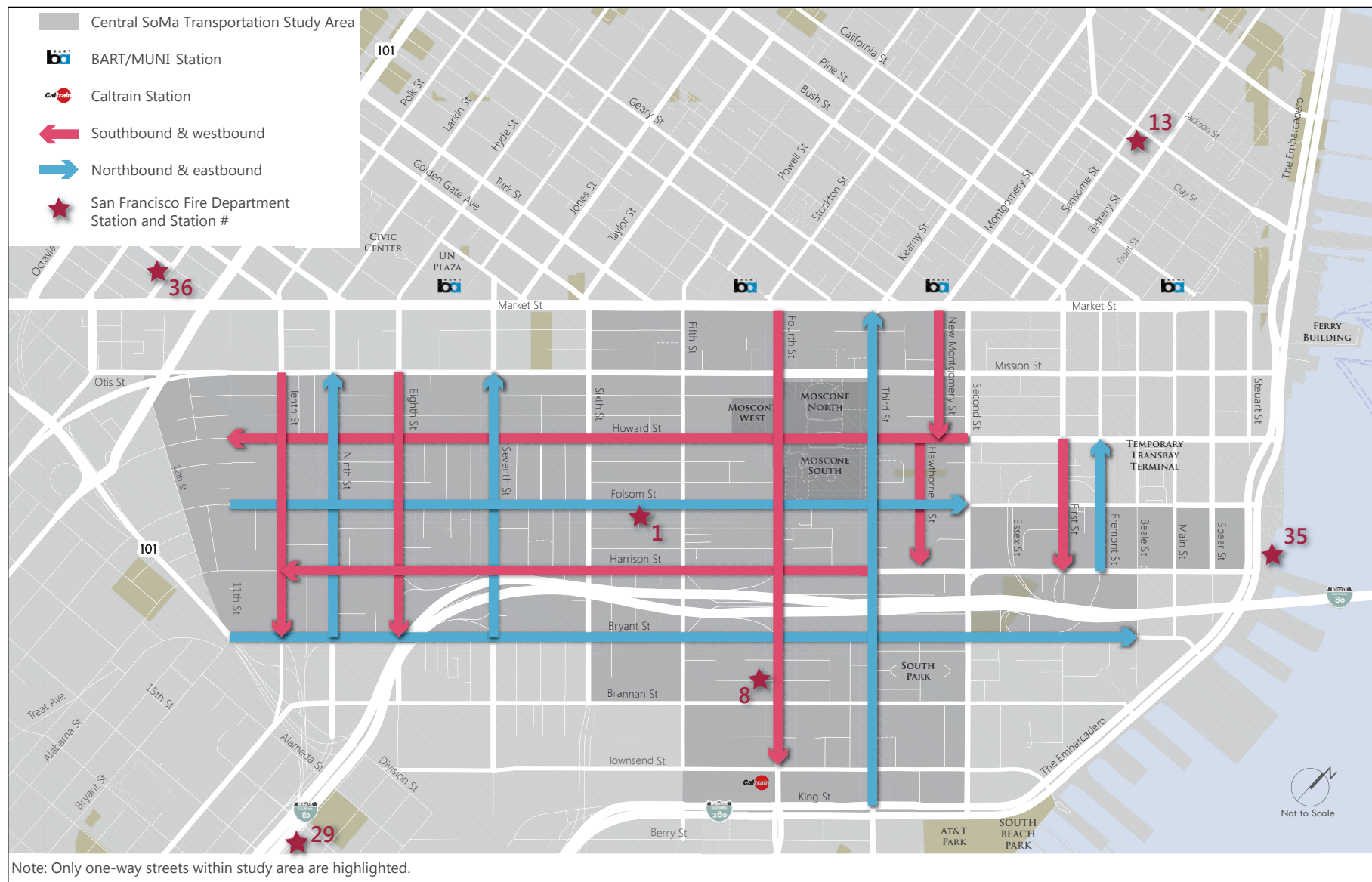
Regional and Local Roadways

Regional Access

Interstate 80 (I-80) provides the primary regional access to the transportation study area. I-80 runs through the southern portion of the transportation study area and connects San Francisco to the East Bay and other points east via the San Francisco-Oakland Bay Bridge. There are multiple on-ramps and off-ramps throughout the transportation study area that provide access to and from I-80 (i.e., at Ninth and 10th Streets at Bryant Street). Within the transportation study area, I-80 generally has eight travel lanes (four lanes in each direction).

U.S. Highway 101 (U.S. 101) provides access to the north and south of the transportation study area. I-80 joins U.S. 101 to the southwest of the transportation study area and provides access to the Peninsula and South Bay. U.S. 101 connects San Francisco and the North Bay via the Golden Gate Bridge. There is one on-ramp and one off-ramp in the transportation study area that provide access to U.S. 101. Within the northern part of

¹⁸¹ Adavant Consulting/Fehr & Peers/LCW Consulting, *Central SoMa Plan Transportation Impact Study, Case No. 2011.1356E*, December, 2016 (hereinafter referred to as "TIS").



SOURCE: Fehr & Peers

Case No. 2011.1356E: Central SoMa Plan

Figure IV.D-1
Transportation Study Area

San Francisco, U.S. 101 operates on surface streets (i.e., Van Ness Avenue and Lombard Street). Van Ness Avenue and Lombard Street are part of the Citywide Pedestrian Network outlined in the Transportation Element of the San Francisco General Plan.

Interstate 280 (I-280) provides regional access from the South Bay and the Peninsula. I-280 and U.S. 101 have an interchange to the south of the transportation study area, and I-280 terminates just south of the study area at the intersection of King/Fifth. Access points to I-280 are located on Sixth Street at Brannan Street, and on King Street at Fifth Street. I-280 is generally a six-lane freeway in the vicinity of the transportation study area.

Local Access

Central SoMa streets are aligned on a grid system, and streets that run in the northwest/southeast direction are generally considered north/south streets, whereas streets that run in the southwest/northeast direction are generally considered east/west streets. The grid offers multiple route options for getting from place to place, with numerous one-way streets, as shown in Figure IV.D-1, and with multiple travel lanes. A number of north/south streets within Central SoMa serve as access routes to and from the regional highway network (e.g., Third, Fourth, Fifth, Sixth, Seventh, Eighth, Ninth, and 10th Streets). The San Francisco General Plan contains definitions and regulatory requirements for a variety of roadway classifications that make up the City's street network, and designation of streets.¹⁸² Howard, Folsom, Harrison and Bryant Streets are identified as Major Arterials. Third, Fourth, 11th, Market, Mission, and portions of Harrison, Bryant, and King Streets are identified as Transit Preferential Streets. Market, Mission, Bryant, Harrison, Third, and Fourth Streets, and all north/south streets between Market and Mission Streets are identified as Neighborhood Pedestrian Streets.

Vehicle Miles Traveled

The San Francisco County Transportation Authority's (Transportation Authority) San Francisco Chained Activity Modeling Process (SF-CHAMP) travel demand model was used to estimate existing average daily VMT per capita for the traffic analysis zones (TAZs) that comprise the Central SoMa area. VMT per capita is used to measure the amount and distance that a resident, employee, or visitor drives, accounting for the number of passengers within a vehicle. **Table IV.D-1, Daily VMT per Capita—Existing Conditions**, presents the existing average daily VMT per capita for residents, employees, and visitors for the nine-county San Francisco Bay Area and for the 28 TAZs that comprise the Central SoMa area included in the VMT analysis (i.e., the area bounded by Market, Second, Townsend and Sixth Streets). As shown on Table IV.D-1, within Central SoMa, the current average daily VMT per capita is less than the citywide and regional Bay Area averages for the nine-county San Francisco Bay Area.

¹⁸² City roadway designations include (listed in the order of potential vehicle capacity) Freeways, Major Arterials, Transit Conflict Streets, Secondary Arterials, Recreational Streets, Collector Streets, and Local Streets. Each of these roadways has a different potential capacity for mixed-flow traffic and for changes that might alter traffic patterns on the given roadway. The General Plan also identifies certain Transit Preferential Streets from among the city's various roadways, each of which is identified as a Primary Transit Street—Transit Oriented, Primary Transit Street—Transit Important, or Secondary Transit Street. The Pedestrian Network is a classification of streets throughout the city used to identify streets developed to be primarily oriented to pedestrian use, and includes Citywide Pedestrian Network Streets and Neighborhood Pedestrian Streets. City and County of San Francisco, San Francisco General Plan, 2007 Transportation Element. Available at http://www.sf-planning.org/ftp/General_Plan/14_Transportation.htm.

TABLE IV.D-1 DAILY VMT PER CAPITA — EXISTING CONDITIONS

Trip Type (Land Use)	Bay Area Regional Average	San Francisco County	Central SoMa Area ^a
Households (residential)	17.2	7.9	2.1
Employment (office)	19.1	8.8	8.2
Visitors (retail)	14.9	5.4	4.4

SOURCE: San Francisco Transportation Authority SF-CHAMP model, Fehr & Peers, 2016.

NOTE:

- a. Average daily VMT per capita for the 28 Traffic Analysis Zones (TAZs) within the Central SoMa area bounded by Market, Second, Townsend, and Sixth Streets.

Transit Service

The Central SoMa transportation study area is well served by public transit, both local and regional. 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), AC Transit 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 SamTrans, BART, and Caltrain.

Local Muni Service

Figure IV.D-2, Existing Transit Network, presents the transit routes traveling within and through the Central SoMa transportation study area. Assessment of transit conditions is typically conducted by calculating the existing capacity utilization (riders as a percentage of capacity) at the maximum load point (MLP) (the point of greatest demand), and is referred to as capacity utilization. The MLPs for routes serving the Central SoMa area are generally located north or south of the transportation study area, and capacity utilization is generally lower at stops within the transportation study area than at the MLP. Of the 37 routes that serve Central SoMa, ten Muni routes currently have passenger loads that exceed Muni’s 85 percent capacity utilization standard at the MLP during the a.m. and/or p.m. peak periods (i.e., the 5 Fulton, 7/7R Haight-Noriega, 10 Townsend, 30X Marina Express, 38R Geary Rapid bus routes, and the K, T, N, J, and M light rail lines), but the MLPs for these routes are not within the transportation study area. The MLPs for other routes (8AX Bayshore Express, 9 San Bruno, 12 Folsom-Pacific, 14X Mission Express, 19 Polk, 27 Bryant, and 81X Caltrain Express) in either the inbound or outbound direction during the a.m. and/or p.m. peak hour are within the transportation study area, but the capacity utilization does not exceed Muni’s 85 percent capacity utilization standard.

Transit operating conditions were observed during field surveys conducted in June 2013.¹⁸³ Operational conflicts at times occurred between buses and other vehicles along the roadways within the transportation study area. Private vehicles often enter the transit-only lanes that run eastbound and westbound on Mission Street and that run northbound on Third Street, occasionally delaying bus routes that operate along Mission

¹⁸³ Field surveys of transit operating conditions were conducted in June 2013, and it is expected that conditions at that time remain representative of current transit operating conditions, given that service levels have been adjusted to meet changing ridership demand consistent with Muni Forward projects.



and Third Streets through the transportation study area. Long bridge-bound vehicle queues of trucks, buses, and private automobiles were observed during the p.m. peak period in the transportation study area on Folsom and Bryant Streets eastbound, as well as on Fifth Street southbound. These vehicle queues affect transit operations because buses and private vehicles travel in mixed-flow travel lanes on these streets.

Central Subway Project. The Central Subway Project is the second phase of the Third Street light rail line (i.e., T Third), which opened in 2007. Construction is currently underway, and the Central Subway will extend the T Third light rail line northward from its current terminus at Fourth and King Streets to a new surface station south of Bryant Street and go underground at a portal under I-80. From there it will continue north to new stations at Moscone Center and Union Square—where it will provide passenger connections to other Muni light rail lines and to BART at the Powell station—and to a new station in Chinatown, where the line will terminate at Stockton and Clay Streets. Construction of the Central Subway is scheduled to be completed in 2017, and revenue service is scheduled for 2019.

Muni Forward. The following Muni Forward changes are either planned or have been implemented by the SFMTA for routes in the transportation study area.

- Minor frequency increases are planned for the F Market & Wharves, J Church, K Ingleside, L Taraval, M Ocean View, and N Judah.
- The 8AX/8BX Bayshore Express frequencies were increased during the peak periods, and a route alignment change was made on the 8BX Bayshore Express.
- The 10 Townsend route will be rerouted, with a new alignment through Mission Bay and Potrero Hill. The 10 Townsend will be renamed the 10 Sansome.
- The new 11 Downtown Connector is planned to run on North Point, Powell, Columbus, Sansome, Second, Folsom/Harrison Streets, and then extend into the Mission via the current 12 Folsom routing. As part of the Rincon Hill Transit Study, San Francisco Municipal Transportation Agency (SFMTA) staff has proposed an alternative route for the 11 Downtown Connector into Mission Bay. They are also evaluating community input to extend the route further into Potrero Hill.
- The 12 Folsom-Pacific will be discontinued.
- Service frequency on the 14X Mission Express was increased during the peak periods.
- The downtown terminus of the 7X Noriega Express has been extended from Fourth Street to Market Street at Spear Street.
- Modification of the 19 Polk in the Civic Center area. The 19 Polk will run from Seventh and McAllister Streets to Polk Street, and from Polk, McAllister, to Hyde Street. With these changes, the 19 Polk would no longer run on Market Street (between Seventh and Ninth Streets), Larkin, Eddy or Hyde (between Eddy and McAllister) Streets, or on Geary Boulevard (between Larkin and Polk Streets).
- The 30 Stockton will provide service with articulated buses to reduce crowding and improve reliability. The 30X Stockton Express will have increased frequencies.

Regional Service Providers

East Bay: Transit service to and from the East Bay is provided by BART, AC Transit, and by the ferries of the San Francisco Bay Area Water Emergency Transportation Authority (WETA). BART operates regional rail transit service between the East Bay (from Pittsburg/Bay Point, Richmond, Dublin/Pleasanton and Fremont)

and San Francisco, and between San Mateo County (Millbrae and San Francisco Airport) and San Francisco. The BART stations that serve Central SoMa include the Powell and Montgomery stations. 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 (temporary) Transbay Terminal. WETA ferries provide service between San Francisco and Alameda and between San Francisco and Oakland from the Ferry Building.

South Bay: Transit service to and from the South Bay is provided by BART, SamTrans, Caltrain, and WETA. SamTrans provides bus service between San Mateo County and San Francisco, including 14 bus lines that serve San Francisco (12 routes serve the downtown area). In general, SamTrans service to downtown San Francisco operates along South Van Ness Avenue, Potrero Avenue, and Mission Street to the Transbay Terminal. SamTrans cannot pick up northbound passengers at San Francisco stops. Similarly, passengers boarding in San Francisco (and destined to San Mateo) may not disembark in San Francisco. SamTrans routes stop at the eastbound and westbound bus stops on Mission Street at Fifth Street. WETA ferries provide service between South San Francisco and the San Francisco Ferry Building.

Caltrain provides commuter heavy-rail passenger service between Santa Clara County and San Francisco. Caltrain currently operates 38 trains each weekday, with a combination of express and local service. The Caltrain terminus station in San Francisco is located at Fourth and King Streets.

North Bay: Transit service to and from the North Bay is provided by Golden Gate Transit buses and ferries, and WETA ferries. 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, most of which serve the Van Ness Avenue corridor or the Financial District; Golden Gate Transit bus service to downtown San Francisco operates along Mission, Howard and Folsom Streets. Golden Gate Transit routes stop at the westbound bus stop on Mission Street at Fifth Street. Golden Gate Transit also operates ferry service between the North Bay and San Francisco. During the morning and evening peak periods, ferries run between Larkspur and San Francisco and between Sausalito and San Francisco. WETA ferries provide service between Vallejo and San Francisco.

Local and Regional Transit Capacity Utilization Analysis

The assessments of existing and future transit conditions for proposed projects in San Francisco is typically performed through the analysis of local transit (Muni) and regional transit (BART, AC Transit, Golden Gate Transit, SamTrans, Caltrain, and ferry service) screenlines.¹⁸⁴ Each screenline is further subdivided into major transit corridors (Muni) or service provider (regional transit). Screenline values represent service capacity, ridership and capacity utilization at the maximum load point (MLP) according to the direction of travel for each of the routes that comprise the transit corridor. The general location of the Muni downtown screenlines, regional screenlines, and the Central SoMa cordons are presented on **Figure IV.D-3, Downtown and Regional Screenlines**.

¹⁸⁴ The concept of screenlines is used to describe the magnitude of travel to or from the greater downtown area, and to compare estimated transit ridership 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.

Muni Downtown Screenlines: Four screenlines have been established in San Francisco to analyze potential impacts of projects on Muni service: Northeast, Northwest, Southwest, and Southeast, with subcorridors within each screenline (see Table IV.D-8). The analysis of Muni downtown screenlines assesses the effect of project-generated transit-trips on transit capacity in the inbound direction (i.e., towards downtown) during the a.m. peak hour, and in the outbound direction (i.e., away from downtown) during the p.m. peak hour. Under existing conditions, the Muni downtown screenlines operate below the 85 percent capacity utilization standard, with the exception of the Southwest screenline during the a.m. peak hour that operates at 93.6 percent. In addition, a number of corridors, such as the Subway Lines (a.m. peak hour), Fulton/Hayes (p.m. peak hour), and Third Street (p.m. peak hour) corridors operate above the 85 percent capacity standard.

Muni Central SoMa Cordons: The local Muni analysis also examined transit conditions on cordons specifically serving the Central SoMa area. The Central SoMa cordons were developed to describe travel to or from the Central SoMa transportation study area. The Muni routes serving the Central SoMa Plan transportation study area were grouped into four cordons. See page IV.D-29 for a more detailed description of the Central SoMa cordon analysis and list of Muni routes included in each cordon. The four Central SoMa cordons currently operate below the 85 percent capacity utilization standard, with the exception of the Southwest cordon during the a.m. peak hour (see Table IV.D-9). In addition, a number of corridors within the cordons currently exceed the standard during the a.m. and p.m. peak hours (e.g., the Southern corridor of the Northwest cordon, the Eastern corridor of the Southeast cordon).

Regional Screenlines: Three regional screenlines have been established around San Francisco to analyze potential impacts on the regional transit agencies: East Bay (BART, AC Transit, ferries), North Bay (Golden Gate Transit buses and ferries), and the South Bay (BART, Caltrain, SamTrans) (see Table IV.D-10). For all regional transit operators, the capacity is based on the number of seated passengers per vehicle. All of the regional transit operators have a one-hour load factor standard of 100 percent, which would indicate that all seats are full. As indicated on Table IV.D-10, with the exception of BART, all regional transit providers operate at less than their load factor standards during the a.m. and p.m. peak hours, which indicates that seats are generally available. BART ridership capacity utilization in the inbound direction from the East Bay during the a.m. peak hour (i.e., towards downtown San Francisco) and in the outbound direction to the East Bay during the p.m. peak hour (i.e., leaving downtown San Francisco) exceed the 100 percent capacity utilization standard, which indicates that all seats are full and many passengers are standing. In addition, the overall East Bay screenline during the a.m. peak hour also exceeds the 100 percent capacity utilization standard.

Pedestrian Conditions

Pedestrian Facilities

Table IV.D-2, Existing Sidewalk Width Compared to Better Streets Plan (BSP) Minimum and Recommended Widths, presents the comparison of the sidewalk widths within the transportation study area to the minimum and recommended widths within the *Better Streets Plan*. Sidewalk widths on streets in much of the study area are less than the recommended widths in the *Better Street Plan*, but meet the minimum width.

**TABLE IV.D-2 EXISTING SIDEWALK WIDTH COMPARED TO BETTER STREETS PLAN (BSP)
MINIMUM AND RECOMMENDED WIDTHS**

Street	Average Existing Sidewalk Width ^a	BSP Minimum Width	BSP Recommended Width
Second Street	10'-14'	12'	15'
New Montgomery Street	14'-16'	12'	15'
Third Street	10'-13'	12'	15'
Fourth Street	11'-16'	12'	15'
Fifth Street	10'-16'	12'	15'
Sixth Street	8'-12'	12'	15'
Seventh Street	9'-12'	12'	15'
Eighth Street	10'-14'	12'	15'
Ninth Street	9'-10'	12'	15'
10th Street	9'-12'	12'	15'
11th Street	10'-12'	12'	15'
12th Street	12'-18'	12'	15'
Townsend Street	9'-20'	12'	15'
Brannan Street	9'-11'	12'	15'
Bryant Street	10'	12'	15'
Harrison Street	10'	12'	15'
Folsom Street	11'-12'	12'	15'
Hawthorne Street	7'	12'	15'
Howard Street	12'-17'	12'	15'
Mission Street	7'-17'	12'	15'
Market Street	25'	12'	15'

SOURCE: San Francisco, *Better Streets Plan*, January 2011; Fehr & Peers, 2016.

NOTE:

a. Where average sidewalk width varies along a street, a range of widths is provided.

A qualitative evaluation of existing pedestrian conditions was conducted during field visits to the transportation study area in June 2013. A total of 80 study intersections were visited. Any lack of pedestrian facilities was noted at the 80 study intersections, including sidewalks, crosswalks, Americans with Disabilities Act (ADA) curb ramps, and pedestrian countdown signals. Pedestrian facilities generally are most complete in the area bounded by Market, Howard, Third and Sixth Streets. The majority of intersections in this area have no missing curb ramps, closed crosswalks or multiple turning lanes. Around three quarters of the sidewalks in this area meet or exceed the *Better Streets Plan* minimum or recommended sidewalk widths. Sidewalks on many streets in the transportation study area that are located south of Howard Street do not meet the *Better Streets Plan* minimum sidewalk widths. General pedestrian impediments observed across the transportation study area include:

- Narrow sidewalks;
- Temporary construction zones that reduce sidewalk width or close crosswalks;

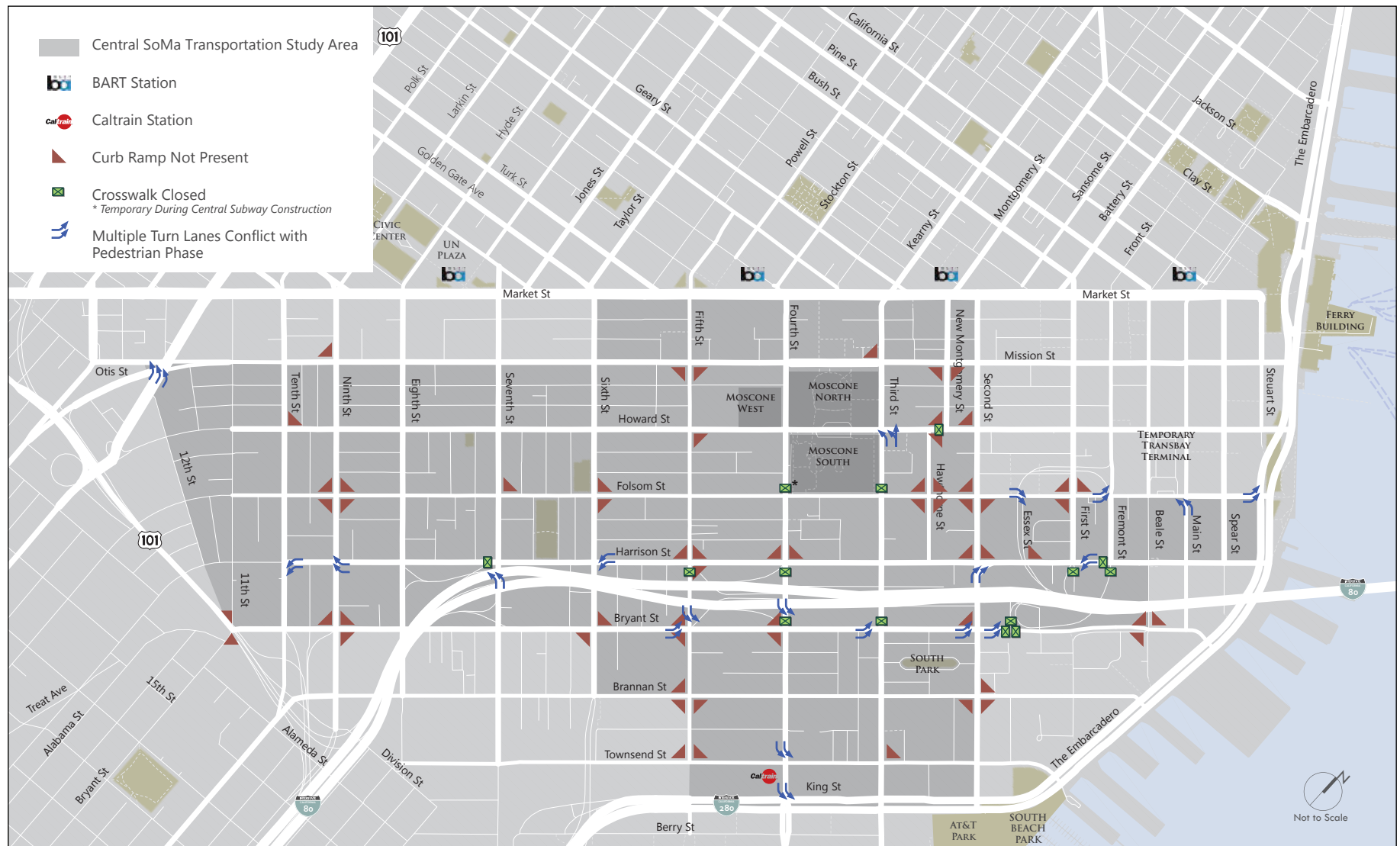
- Lack of ADA curb ramps or use of shared diagonal curb ramps at intersection corners;
- Missing or closed crosswalks;
- Freeway on- and off-ramps with short pedestrian crossing phases and/or high vehicle volumes and speeds turning into crosswalks across multiple travel lanes; and
- Long distances between intersections limiting crossing opportunities, and higher vehicle speeds particularly in the southern and western portions of the transportation study area.

These pedestrian impediments are most prevalent along particular corridors, including (north/south) Second, New Montgomery, Hawthorne, Fourth and Ninth Streets, as well as (east/west) Folsom, Harrison and Bryant Streets. These corridors contain 70 percent of all transportation study area intersections but over 90 percent of the intersections with multiple pedestrian impediments (i.e., missing or closed crosswalks, missing or diagonal curb ramps, and multiple turning lanes). See **Figure IV.D-4, Missing Curb Ramps, Closed Crosswalks, and Multiple Turning Lanes**. Harrison and Bryant Streets present particularly unfavorable pedestrian environments, with numerous freeway on-ramps and off-ramps, very narrow sidewalks, and largely industrial or auto-centric land uses. In particular, a large number of conflicts between vehicles and pedestrians were observed along Folsom Street at Second Street and at Third Street. Eastbound vehicle queues bound for the Bay Bridge often block the intersection and its east side crosswalk during the p.m. peak period. Eastbound drivers attempt to clear the intersection when downstream traffic clears along Folsom Street, proceeding through the east leg crosswalk while pedestrians cross during the walk phase. At times pedestrians cannot cross at all during the walk phase due to vehicle queues blocking the crosswalk. Eastbound through vehicle queues also delay the southbound left and northbound right turning movements, resulting in drivers making aggressive turns into the east crosswalk during the shared signal phase. In addition, the intersection of Folsom/Third lacks a crosswalk on the north leg (i.e., pedestrians crossing Third Street are directed to cross at the south leg of the intersection).

The slip lane¹⁸⁵ at the intersection of Harrison/Second presents another conflict point, as northbound drivers on Second Street turning right onto Harrison Street often fail to yield to pedestrians crossing within the slip lane crosswalk or block the slip lane crosswalk as they wait for downstream traffic on Harrison Street to clear. Harrison Street has a number of intersections with closed crosswalks, including at Fremont, First, Fourth, Fifth and Seventh Streets. Bryant Street also has closed crosswalks at Sterling, Third and Fourth Streets.

In addition to the narrow sidewalks, missing curb ramps, closed crosswalks, multiple turn lanes, freeway ramps and limited crossing opportunities discussed above, the wide roadways and higher vehicle speeds during non-peak periods throughout the transportation study area, further challenge pedestrians. Pedestrians are required to cross multiple travel lanes at intersections, increasing their exposure to pedestrian-vehicle conflicts. Wide turning radii at the intersection corners enable drivers to make turns at higher speeds, reducing their ability to recognize and yield to pedestrians in the crosswalk. Higher vehicle speeds during non-peak periods generally increase the frequency of pedestrian collisions by reducing the time available for driver reaction, and increase the severity of pedestrian injuries.

¹⁸⁵ A slip lane is a travel lane provided at an intersection to allow vehicles to turn at the intersection without actually entering it and interfering with through traffic.



SOURCE: Fehr & Peers

Case No. 2011.1356E: Central SoMa Plan
Figure IV.D-4
 Missing Curb Ramps, Closed Crosswalks,
 and Multiple Turning Lanes

Within Central SoMa, in the vicinity of Moscone Center, there are a number of senior housing complexes, and therefore, a number of the pedestrians at the transportation study area locations are seniors and persons with disabilities. Senior pedestrians and pedestrians with disabilities can have special safety considerations that affect their walking experience including reduction in vision, agility, balance, speed, concentration and strength, difficulties hearing vehicles approaching from behind, and reduced ability under low light/night conditions.¹⁸⁶ Seniors are more prone to suffer a fatality if involved in a crash when compared to the general population.¹⁸⁷ A number of senior residents of the housing complexes within Central SoMa have expressed concerns regarding difficulty crossing Howard, Folsom, Fourth, and Third Streets all of which are one-way arterial streets with multiple travel lanes and higher travel speeds during non-peak periods, as well as difficulty walking along sidewalks during Moscone Center events with high attendance levels. In response to residents' concerns, over the years SFMTA has implemented pedestrian safety measures aimed at reducing pedestrian-vehicle conflicts and reducing vehicle speeds within the South of Market neighborhood, such as all-pedestrian phases (e.g., Fourth/Howard) and leading pedestrian intervals (e.g., Third/Howard) at intersections, corner bulbouts (e.g., southwest corner of Fourth/Howard), sidewalk widening (e.g., adjacent to Moscone West), the pedestrian bridge across Howard Street, and new midblock traffic signals (e.g., Sixth/Minna), among other measures.

Pedestrian Crosswalk, Sidewalk, and Corner Level of Service (LOS)

Existing pedestrian operating conditions were quantitatively analyzed at the crosswalks at 10 study intersections, at five sidewalk locations, and at corner locations at 10 intersections during the midday and p.m. peak periods (i.e., 11:00 a.m. to 1:00 p.m. and 4:00 to 6:00 p.m., respectively). Pedestrian counts at the study locations were done in April and July 2013, and May 2014, and are representative of current conditions in the transportation study area. The quantitative analysis of pedestrian conditions focused on the Fourth Street corridor, which serves as the main pedestrian spine of the Plan Area. The sidewalks, crosswalks and corners are quite crowded around major destinations such as the Moscone Center, the SFMTA Fifth & Mission/Yerba Buena Garage, and the Caltrain station. The study crosswalks, sidewalks, and corners currently operate at acceptable LOS conditions (i.e., at LOS D or better) during both the weekday midday and p.m. peak hours, with the exception of the west crosswalk at the intersection of Fourth/Townsend which operates at LOS E during the p.m. peak hour (the west crosswalk operates at LOS D during the midday peak hour).

Bicycle Conditions

Figure IV.D-5, Existing Bicycle Route Network and AM and PM Peak Hour Bicycle Volumes, p. IV.D-14, presents the bicycle route network within the Central SoMa transportation study area; the majority of the transportation study area is flat, with limited changes in grade. Bikeways are typically classified as Class I, Class II, Class III, or Class IV facilities.¹⁸⁸ Class I bikeways are bike paths with exclusive right-of-way for use by bicyclists or pedestrians. Class II bikeways are bike lanes striped within the paved areas of roadways and

¹⁸⁶ Federal Highway Association, *FHWA University Course on Bicycle and Pedestrian Transportation*, Publication No. FHWA-HRT-05-100, slide 10.

¹⁸⁷ Loukaitou-Sideris, Anastasia, "Is it Safe to Walk? Neighborhood Safety and Security Considerations and Their Effects on Walking," *Journal of Planning Literature*, Vol. 20, No. 3, February 2006, p. 226.

¹⁸⁸ State of California, *California Streets and Highway Code* Section, 890.4. Available at <http://www.leginfo.ca.gov/cgi-bin/displaycode?section=shc&group=00001-01000&file=890-892>, accessed September 1, 2016.



SOURCE: Fehr & Peers

Case No. 2011.1356E: Central SoMa Plan
Figure IV.D-5
 Existing Bicycle Route Network and
 AM and PM Peak Hour Bicycle Volumes

established for the preferential use of bicycles, while Class III bikeways are signed bike routes that allow bicycles to share streets with vehicles. A Class IV bikeway is an exclusive bicycle facility that is separated from vehicular traffic and parked cars by a buffer zone. Class II or Class IV bicycle lanes are provided on The Embarcadero, and Seventh, 10th, Howard, Folsom, and Townsends Streets. Class II bicycle lanes are provided on Second Street between Market and Howard Streets, and a Class III signed-route only is located south of Howard Street. A Class III signed route is provided on Fifth Street.

The 2009 *San Francisco Bicycle Plan (Bicycle Plan)* includes planned improvements to Bicycle Route 11 on Second Street, Bicycle Route 19 on Fifth Street, and on Fremont Street. Second Street improvements include the construction of Class IV separated bicycle lanes in both directions between Market and Townsend Streets, and these will be implemented as part of San Francisco Public Works' Second Street Improvement Project. Fifth Street improvements include the construction of Class II bicycle lanes and Class III bicycle routes in both directions between Market and Townsend Streets. These planned improvements would reduce the number of travel lanes and prohibit northbound and southbound left turns, as well as implement other minor changes to lane geometry and on-street parking. Fremont Street improvements include the construction of a Class II bicycle lane between Harrison and Howard Streets.

Bicycle volume counts were conducted during the weekday a.m. and p.m. peak periods (7:00–9:00 a.m. and 4:00–6:00 p.m., respectively) in April and August 2013 at six intersections on Howard, Folsom and Townsend Streets and are representative of current conditions in the transportation study area. Peak hour bicycle volumes ranged between 50 and 450 bicyclists per hour traveling through the intersections. The highest approach volumes during the a.m. peak hour were observed on Folsom and Townsend Streets (eastbound), while during the p.m. peak hour the highest approach volumes were observed on Howard and Townsend Streets (westbound). Folsom and Howard Streets are popular bicycle commute routes for people working in SoMa and Townsend Street is a popular route for commuters headed to and from the Caltrain station on Fourth and King Streets. While some improved bicycle facilities are provided along Central SoMa streets, as described above, bicyclists face similar conflicts to those discussed under the Pedestrian Conditions subheading above.

On-street bicycle racks are provided throughout the study area. Additionally, there are a number of Bay Area Bike Share stations in the study area: at The Embarcadero and Folsom Street, at Third and Howard Streets, at Fifth and Howard Streets, at Spear and Folsom Streets, at Second and Folsom Streets, at Second Street and South Park, at Second and Townsend Streets, at Fourth and Townsend Streets, and at 330 Townsend Street. The nine stations can accommodate 175 bicycles.

Loading Conditions

Freight delivery and service vehicle demand in the Central SoMa area is served via off-street facilities within buildings, as well as at on-street commercial loading spaces (i.e., yellow curb). On-street commercial loading spaces are provided to allow commercial vehicles (typically trucks and service vehicles) to park along the curb to unload or load goods. These spaces are frequently used by building service vehicles, contractors, and delivery vehicles for buildings with no supply of off-street parking. Commercial loading spaces are generally regulated by meters with 30-minute to 1-hour time limits in effect Monday through Friday (or Saturday) with various start and end times. In general, on-street commercial loading spaces are typically well utilized throughout the day, with periods of higher usage during the early mornings (primarily deliveries to restaurants and stores) and during the midday period (primarily package and mail deliveries).

Of the approximately 3,850 on-street parking spaces within the transportation study area, about 10 percent (i.e., 380 spaces) are commercial vehicle loading spaces. **Figure IV.D-6, Existing On-Street Parking Spaces**, presents the number of existing on-street parking spaces for three Central SoMa subareas, and the distribution of commercial vehicle loading spaces within the subareas.

Most larger buildings in the Plan Area provide off-street loading docks that can accommodate most of the daily delivery/service vehicle demands of each building. The demand for on-street loading zones tends to be from smaller buildings or uses that do not have off-street facilities, or by deliveries that only require a short stop (such as a package delivery).

Violations of the on-street commercial loading spaces are routine, including usage of the spaces for non-delivery vehicles (such as passenger pick-ups/drop-offs, short-term parking, or expired meters), resulting in occasional shortages of available commercial loading spaces in areas and periods of high demand. When commercial loading spaces are not available or not convenient to the delivery location, delivery/service vehicles have been observed to double-park in the adjacent travel lane. During these times, minor congestion occurs, causing adverse effects on vehicle, transit, and bicycle conditions. In addition, delivery/service vehicles also stop within red zones (such as near intersections or fire hydrants) or at bus stops, affecting bus operations and resulting in additional delays and decreasing safety at intersections.

Passenger loading/unloading zones (i.e., white zones) provide a place to load and unload passengers for adjacent businesses and residences, and are intended for quick passenger drop-off and pick-up. These zones require a permit to be issued by SFMTA and are renewed annually. Passenger loading/unloading is also permitted in commercial loading spaces as long as it is active loading/unloading and does not exceed two minutes. There are a number of passenger loading/unloading zones within the Central SoMa transportation study area. The majority of the passenger loading/unloading zones serve the hotel, convention center, and cultural uses, although there are a number of zones that serve residential, office, and educational uses.

Parking Conditions

Existing off-street and on-street parking supply were examined within a parking study area bounded by Market Street (north), 11th Street (west), King Street (south), and Essex Street (east). Information on off-street and metered on-street parking is available from the SFMTA through *SFpark*.¹⁸⁹ The remaining parking data were collected through surveys of the parking study area conducted in spring 2013 for this analysis.

¹⁸⁹ *SFpark* is a SFMTA and U.S. Department of Transportation pilot program to test adjustable meter and garage pricing to achieve a balance between available parking spaces and demand. Data collection of real-time space availability and rates ended in December 2013. Additional information about the program is available at <http://sfpark.org>.



SOURCE: Fehr & Peers

Case No. 2011.1356E: Central SoMa Plan
Figure IV.D-6
 Existing On-Street Parking Spaces

Off-Street Parking

As shown on **Figure IV.D-7, Existing Off-Street Parking Spaces**, the majority of the parking garages within the parking study area are concentrated between Second and Fifth Streets, while the majority of the surface parking lots are dispersed west of Fifth Street. There are 151 off-street parking facilities within the parking study area, which provide a combined total of over 17,000 parking spaces and almost 50 motorcycle spaces. Most larger public parking facilities in the parking study area currently have availability throughout the day. For example, the Fifth & Mission/Yerba Buena Garage contains 2,585 parking spaces, and is about 52 percent occupied during weekday midday. Other public garages with space availability in the area include the Moscone Garage (732 parking spaces and about 70 percent occupied during the midday), the SFMOMA Garage (410 parking spaces and about 80 percent occupied during the midday), and the Jessie Square Garage (372 parking spaces and about 75 percent occupied during the midday).

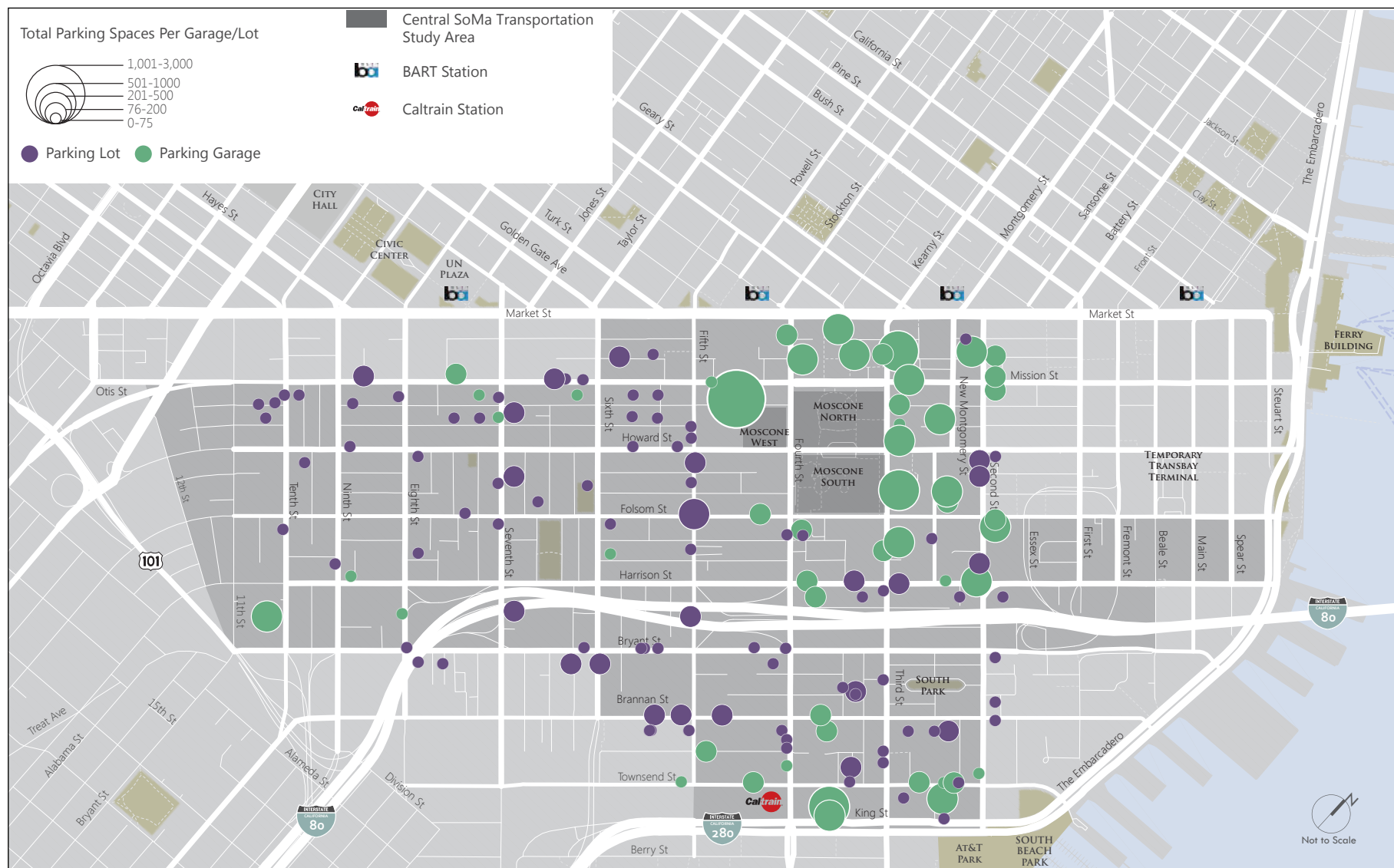
On-Street Parking

On-street parking within the parking study area generally consists of metered or time-limited spaces. Based on information from SFMTA's *SFpark* data, there are about 3,840 on-street metered parking spaces within the parking study area (i.e., area bounded by Market, 11th, King, and Essex Streets). More than 70 percent of these spaces are general metered parking spaces, about 13 percent are commercial loading spaces, and about 10 percent are motorcycle parking spaces. The remaining spaces are disabled parking (i.e., ADA-accessible blue zones)¹⁹⁰, passenger loading/unloading zones, and unrestricted spaces. During the weekday morning and evening peak commute periods (i.e., generally 7:00 to 9:00 a.m. and 3:00 to 6:00 p.m.), on-street parking is prohibited on one or both sides of a number of transit-oriented or arterial streets (e.g., Mission, Third, and Sixth Streets).

There are some streets within the parking study area that are subject to SFMTA's Residential Permit Parking (RPP) program.¹⁹¹ Within these areas, residents that have a residential parking permit are able to park throughout the day, whereas vehicles without permits are subject to time restrictions. There are around 1,050 RPP spaces in the parking study area, almost all of which fall under RPP Area U. A few RPP spaces in the eastern end of the parking study area are located in RPP Area Y. RPP regulations generally restrict weekday on-street parking to a one-hour or two-hour period, except for residents with permits. Additional parking regulations within the parking study area include two-hour (about 560 spaces), one-hour (about 450 spaces), and free (about 90 spaces) parking.

¹⁹⁰ A blue zone designates vehicle parking spaces for persons with a valid disabled parking permit. The SFMTA normally locates blue zones in areas with high public uses, such as in dense commercial areas and near public parks and playgrounds, where the blue zones can serve a large number of individuals.

¹⁹¹ The preferential residential parking system (i.e., the Residential Permit Parking program) was established in 1976. The main goal of the program is to provide more parking spaces for residents by discouraging long-term parking by people who do not live in the area. Local regulations regarding the establishment of permit areas and requirements for permits can be found in the *San Francisco Transportation Code*, Division II, Article 900. Available at <https://law.resource.org/pub/us/code/city/ca/SanFrancisco/0-snapshots/S-44/Transportation.html>, accessed September 1, 2016.



Existing on-street parking conditions were qualitatively assessed during field observations conducted during the weekday midday period, which is representative of the peak parking demand period for most non-residential land uses in the parking study area. Overall, the on-street parking spaces are well utilized throughout the day, with availability during the overnight hours at the commercial loading spaces. There are higher parking occupancy rates closer to Market Street and within the eastern portion of the parking study area, and lower occupancies towards the western and southern portions of the parking study area.

Emergency Vehicle Access Conditions

The existing roadway network enables emergency vehicle access to all buildings within the transportation study area. Emergency vehicles typically use major arterials¹⁹² through the transportation study area when heading to and from incidents. Arterial roadways allow emergency vehicles to travel at higher speeds and provide enough clearance space to allow other traffic to maneuver out of the path of the emergency vehicle and yield the right of way.¹⁹³ While the turning radius and maneuverability is somewhat restricted on some roadways, including alleyways such as Jessie, Stevenson, Minna, and Natoma Streets, emergency vehicles can still access these streets and buildings. There are two San Francisco Fire Department fire stations in the transportation study area: Station 1 located on Folsom Street between Fifth and Sixth Streets, and Station 8 on Bluxome Street at Fourth Street. Other stations nearby include Station 36 on Oak Street at Franklin Street, Station 35 on The Embarcadero at Harrison Street, Station 4 on Mission Rock Street at Third Street, and Station 29 on Vermont Street at Sixteenth Street. The locations of the San Francisco Fire Department stations are presented on Figure IV.D-1, Transportation Study Area. Many traffic signals in the Central SoMa transportation study area are fire preemption equipped signals, and Fire Department Stations 1, 4, 8, and 36 currently have fire trucks equipped with preemption equipment; meaning that the intersection signal gives preference to emergency vehicles.

IV.D.3 Regulatory Framework

Federal and State Regulations

There are no federal regulations that address transportation impacts associated with the project.

The Sustainable Communities and Climate Protection Act of 2008 (Senate Bill 375)

Senate Bill 375 (SB 375, The Sustainable Communities and Climate Protection Act of 2008) requires each of California's Metropolitan Planning Organizations (MPOs) to prepare a sustainable communities strategy (SCS) as part of its regional transportation plan (RTP). The SCS includes greenhouse gas (GHG) emission reduction targets, along with land use, housing, and transportation policies that would allow the region to meet the targets. A key implementation strategy of SB 375 is the alignment of dense land uses along well-served

¹⁹² Major arterials are cross-town thoroughfares whose primary function is to link districts within the city and to distribute vehicle traffic to and from the regional freeway facilities. Within the transportation study area, Howard, Folsom, Harrison and Bryant Streets are identified in the General Plan as major east/west arterials, and portions of all north/south streets between Third and 11th Street are identified as major north/south arterials.

¹⁹³ Per the *California Vehicle Code*, Section 21806, all vehicles must yield right of way to emergency vehicles and remain stopped until the emergency vehicle has passed.

transportation corridors, such as the Plan's proposal for increased density around the forthcoming Central Subway route. Individual development projects that are consistent with SCS strategies and with a regional plan that meets the GHG targets qualify for streamlined review of GHG emissions under CEQA. Further information regarding the Plan's consistency with *Plan Bay Area* (the San Francisco Bay Area's SCS) is provided in Chapter III, Plans and Policies, of this EIR. For the Bay Area, the per-capita GHG emission reduction target is a seven percent reduction by 2020 and a 15 percent reduction by 2035 from 2005 levels. *Plan Bay Area*, the Metropolitan Transportation Commission's regional transportation plan, adopted in July 2013, is the region's first plan subject to SB 375 requirements.

CEQA Section 21099(b)(1) (Senate Bill 743)

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

In January 2016, OPR published for public review and comment a Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA recommending that transportation impacts for projects be measured using a VMT metric.¹⁹⁴ On March 3, 2016, based on compelling evidence in that document and on the City's independent review of the literature on LOS and VMT, the San Francisco Planning Commission adopted OPR's recommendation to use the VMT metric instead of automobile delay to evaluate the transportation impacts of projects (Resolution 19579). (Note: the VMT metric does not apply to the analysis of impacts on non-automobile modes of travel such as riding transit, walking and bicycling.)

According to the impact assessment methodology recommended by OPR and adopted by the Planning Commission, a land use plan may have a significant impact on transportation if it is not consistent with the relevant SCS. For this purpose, consistency with the SCS means the following must be true:

- Development specified in the plan is also specified in the SCS (e.g., the plan does not specify developing in outlying areas specified as open space or Priority Conservation Area in the SCS); and
- Taken as a whole, development specified in the plan leads to a VMT that is equal to or less than the VMT per capita and VMT per employee specified in the SCS.

Plan Bay Area set a VMT per capita reduction target of 10 percent below the Bay Area 2005 regional average VMT levels by 2040 for residential development. No VMT per employee target was set.¹⁹⁵

¹⁹⁴ OPR, *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA, Implementing Senate Bill 743* (Steinberg, 2013), January 20, 2016.

¹⁹⁵ Association of Bay Area Governments and Metropolitan Transportation Commission, *Plan Bay Area*, July 18, 2013. Available at http://files.mtc.ca.gov.s3.amazonaws.com/pdf/Plan_Bay_Area_FINAL/pbafinal/index.html.

Local and Regional Regulations and Plans

Transit-First Policy

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

Vision Zero Policy

Vision Zero is San Francisco's road safety policy.¹⁹⁶ The City adopted Vision Zero as a policy in 2014, committing to build better and safer streets, educate the public on traffic safety, enforce traffic laws, and adopt policy changes that save lives. The goal is to create a culture that prioritizes traffic safety and to ensure that mistakes on roadways do not result in serious injuries or death. The result of this collaborative citywide effort will be safer more livable streets as San Francisco works to eliminate traffic fatalities by 2024.

San Francisco General Plan

The Transportation Element of the *San Francisco General Plan* contains objectives and policies that relate to nine aspects of the citywide transportation system: general regional transportation, congestion management, vehicle circulation, transit, pedestrian, bicycles, citywide parking, and goods management.¹⁹⁷ The Transportation Element references San Francisco's Transit-First Policy in its introduction and contains objectives and policies that are pertinent to travel in the project area.

San Francisco Bicycle Plan

The *San Francisco Bicycle Plan* describes a City program to provide the safe and attractive environment needed to promote bicycling as a transportation mode.¹⁹⁸ The *San Francisco Bicycle Plan* identifies the citywide bicycle route network, and establishes the level of treatment (i.e., Class I, Class II, Class III, or Class IV facility) on each route. The *San Francisco Bicycle Plan* also identifies near-term improvements that could be implemented within the next five years, as well as policy goals, objectives, and actions to support these improvements. It also includes long-term improvements, and minor improvements that would be implemented to facilitate bicycling in San Francisco.

¹⁹⁶ Information on Vision Zero available at <http://visionzerosf.org/about/what-is-vision-zero/>.

¹⁹⁷ CCSF, *San Francisco General Plan, Transportation Element*, Adopted July 1995. Available at http://www.sf-planning.org/ftp/general_plan/I4_Transportation.htm, accessed February 11, 2015.

¹⁹⁸ SFMTA, *San Francisco Bicycle Plan*, June 2009.

Better Streets Plan

The *San Francisco Better Streets Plan* (*Better Streets Plan*) focuses on creating a positive pedestrian environment through measures such as careful streetscape design and traffic calming measures to increase pedestrian safety. The *Better Streets Plan* includes guidelines for the pedestrian environment, which it defines as the areas of the street where people walk, sit, shop, play, or interact. Generally speaking, the guidelines are for design of sidewalks and crosswalks; however, in some cases, the *Better Streets Plan* includes guidelines for certain areas of the roadway, particularly at intersections.

Transportation Sustainability Program

The Transportation Sustainability Program is an initiative aimed at improving and expanding the transportation system to help accommodate new growth, and create a policy framework for private development to contribute to minimizing its impact on the transportation system, including helping to pay for the system's enhancement and expansion. The Transportation Sustainability Program is a joint effort by the Mayor's Office, the San Francisco Planning Department, the SFMTA, and the San Francisco County Transportation Authority (Transportation Authority), comprised of the following three objectives:

- **Fund Transportation Improvements to Support Growth.** The Transportation Sustainability Fee (TSF) is assessed on new development, including residential development, to help fund improvements to transit capacity and reliability as well as bicycle and pedestrian improvements. The TSF was passed by the Board of Supervisors and signed into law by the Mayor on November 25, 2015 (Board of Supervisors File No. 150790).¹⁹⁹ The new TSF replaces the Transit Impact Development Fee (TIDF) that was levied on most new non-residential development citywide to offset new development's impacts on the transit system. The TIDF still applies to some projects already in the entitlement and permitting process. The TSF will be applicable to residential and non-residential development projects within Central SoMa.
- **Modernize Environmental Review.** This component of the Transportation Sustainability Program would change how the City analyzes impacts of new development on the transportation system under the California Environmental Quality Act (CEQA). This reform has been helped by California Senate Bill 743, which requires that the existing transportation review standard, focused on automobile delay (vehicular level of service), be replaced with a more meaningful metric, VMT. VMT is a measure of the amount and distance that a project causes potential residents, tenants, employees, and visitors of a project to drive, including the number of passengers within a vehicle. Resolution 19579 regarding this reform was adopted at the Planning Commission hearing on March 3, 2016.
- **Encourage Sustainable Travel.** This component of the Transportation Sustainability Program would help manage demand on the transportation network through a Transportation Demand Management (TDM) Program, making sure new developments are designed to make it easier for new residents, tenants, employees, and visitors to get around by sustainable travel modes such as transit, walking, and biking. Each measure that would be included in the TDM program is intended to reduce VMT traveled from new development. Resolution 19628 of intent to initiate the *Planning Code* amendments was approved by the Planning Commission on August 4, 2016, and the *Planning Code* amendments have been forwarded to the Board of Supervisors for legislative approval.

¹⁹⁹ Two additional files were created at the Board of Supervisors from TSF regarding hospitals and health services, grandfathering, and additional fees for large projects: 151121 and 151257.

IV.D.4 Impacts and Mitigation Measures

Significance Criteria

The significance criteria listed below are organized by mode to facilitate the transportation impact analysis; however, the transportation significance thresholds are essentially the same as the ones in the environmental checklist (Appendix G of the *CEQA Guidelines*). For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the Plan or proposed open space and street network changes would result in a significant impact on transportation and circulation:

- The project would have a significant effect on the environment if it would cause substantial additional VMT;
- The project would have a significant effect on the environment if it would substantially induce additional automobile travel by increasing physical roadway capacity in congested areas (i.e., by adding new mixed-flow travel lanes) or by adding new roadways to the network;
- The project would have a significant effect on the environment if it would cause major traffic hazards;
- The project would have a significant effect on the environment if it would cause a substantial increase in transit demand that could not be accommodated by adjacent transit capacity, resulting in unacceptable levels of transit service, or cause a substantial increase in delays or operating costs such that significant adverse impacts in transit service levels could result (with the Muni and regional transit screenlines analyses, the project would have a significant effect on the environment if project-related transit trips would cause the capacity utilization standard of a transit provider to be exceeded during the peak hours);
- 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 that could not be accommodated within proposed off-street loading facilities or within convenient on-street loading zones, and would create potentially hazardous conditions or significant delays affecting traffic, transit, bicycles, or pedestrians;
- The project would have a significant effect on the environment if it would result in a substantial parking deficit that could create hazardous conditions or significant delays affecting transit, bicycles, or pedestrians, or where particular characteristics of the project or the Plan Area demonstrably render use of other modes infeasible;
- The project would have a significant effect on the environment if it would result in inadequate emergency vehicle access; or
- Construction of the project would have a significant effect on the environment if the temporary construction activities' magnitude and duration would result in substantial interference with pedestrian, bicycle, or vehicle circulation and accessibility to adjoining areas, or result in potentially hazardous conditions.

As described in the Initial Study (EIR Appendix B), the Plan Area is not located within an area covered by an airport land use plan or within two miles of a public airport or public use airport; nor is it within the vicinity of a private airstrip. Therefore, implementation of the Plan would not result in a change in air traffic patterns, including either an increase in traffic levels, obstructions to flight, or a change in location, that results in substantial safety risks. Therefore, these issues are not addressed further in this EIR.

Approach to Analysis

This section presents the methodology for analyzing transportation impacts and information considered in developing the travel demand generated by development that could occur under the Plan. The impacts of implementation of the Plan on the transportation network were analyzed using the guidelines set forth in the *SF Guidelines* and Planning Commission Resolution 19579 (see Transportation Sustainability Program, above) and supporting materials. The *SF Guidelines* and Planning Commission Resolution 19579 and supporting materials provide direction for analyzing transportation conditions and identifying the transportation impacts of projects in San Francisco.

Impacts Analysis Methodology

Vehicles Miles Traveled Analysis

The following identifies thresholds of significance and screening criteria used to determine if a land use project would result in significant transportation impacts under the VMT metric, as well as thresholds of significance and screening criteria used to determine if transportation projects would result in significant impacts by inducing substantial additional automobile travel. The proposed rezoning included as part of the Central SoMa Plan is analyzed in this EIR at a programmatic level, while analysis of the proposed street network changes are analyzed at a project level. Specific development within the Plan Area may be required to go through subsequent environmental review, and therefore information regarding future project level analysis of subsequent development projects is presented below for informational purposes.

Development under the Plan (Programmatic Level Analysis). The proposed rezoning within the Plan Area is evaluated in this EIR at a programmatic level. According to the impact assessment methodology recommended by OPR and adopted by the Planning Commission in accordance with CEQA Section 21099(b)(1), a land use plan may have a significant impact if it is not consistent with the relevant SCS (i.e., sustainable communities strategy).²⁰⁰ For this purpose, consistency with the SCS consists of the following two criteria:

- Development specified in the plan is also specified in the SCS (e.g., the Plan does not specify developing in outlying areas specified as open space or Priority Conservation Area in the SCS); and
- Taken as a whole, development specified in the plan leads to a VMT that is equal to or less than the VMT per capita and VMT per employee specified in the SCS.

²⁰⁰ The MTC's 2013 Regional Transportation Plan, *Plan Bay Area*, adopted in July 2013, is the region's SCS.

Plan Bay Area set a VMT per capita reduction target of 10 percent below the Bay Area 2005 regional average VMT levels by 2040 for residential development. No VMT per employee target was set.²⁰¹

Consistent with OPR guidance, VMT effects of the Plan were measured over the full area where the Plan may substantively affect travel patterns, beyond the boundaries of the proposed rezoning. The approximate boundaries of the area included in the analysis are Market Street to the north, Second Street to the east, Townsend Street to the south, and Sixth Street to the west.

Analysis of consistency with the SCS was conducted using the regional MTC travel demand model used in the *Plan Bay Area* analysis for 2005 and 2040 cumulative conditions.

Street Network Changes (Project-Level Analysis). The proposed street network changes included in the Central SoMa Plan are evaluated in this EIR at the project level pursuant to OPR's proposed transportation project impact guidelines. OPR's guidelines specify that a transportation project would substantially induce automobile travel if it would generate more than 2,075,220 VMT per year. This threshold is based on the fair share VMT allocated to transportation projects required to achieve California's long-term greenhouse gas emissions reduction goal of 40 percent below 1990 levels by 2030. OPR's proposed transportation impact guidelines includes a list of transportation project types that would not likely lead to a substantial or measureable increase in VMT. If a project fits within the general types of projects (including combinations of types) described below, then it is presumed that VMT impacts would be less than significant and a detailed VMT analysis is not required. The following project types have been determined by OPR to not likely lead to a substantial or measureable increase in VMT:

- Active Transportation, Rightsizing (aka Road Diet), and Transit Projects:
 - Infrastructure projects, including safety and accessibility improvements, for people walking or bicycling.
 - Installation or reconfiguration of traffic calming devices.
- Other Minor Transportation Projects:
 - Conversion of existing general purpose lanes (including vehicle ramps) to managed lanes (e.g., HOV, HOT, or trucks), or transit lanes.
 - Installation, removal, or reconfiguration of traffic control devices, including Transit Signal Priority (TSP) features.
 - Timing of signals to optimize vehicle, bicycle or pedestrian flow on local or collector streets.
 - Conversion of streets from one-way to two-way operation with no increase in the number of mixed-flow travel lanes.
 - Addition of transportation wayfinding signage.
 - Removal of off-street or on-street parking spaces.
 - Adoption, removal, or modification of on-street parking or loading restrictions (including meters, time limits, accessible spaces, and preferential/reserved parking permit programs).

²⁰¹ Association of Bay Area Governments and Metropolitan Transportation Commission, *Plan Bay Area*, July 18, 2013. Available at http://files.mtc.ca.gov/s3.amazonaws.com/pdf/Plan_Bay_Area_FINAL/pbafinal/index.html.

An assessment of the effects of development under the Plan and the proposed street network changes was conducted using the San Francisco Transportation Authority's SF-CHAMP model runs prepared for the Central SoMa Plan under year 2012 and 2040 cumulative conditions.

Future Project-Level Analysis of Subsequent Development Projects. While the VMT analysis for the Plan's proposed rezoning is based on the criteria presented above for "Development Under the Plan", subsequent development projects within Central SoMa would use the project-level criteria adopted by the Planning Commission. For development projects, a project would cause a significant impact related to substantial additional VMT if it exceeds the regional VMT per capita or employee for the particular use (i.e., residential, retail, or office) less 15 percent.²⁰² This approach is consistent with CEQA Section 21099 and the thresholds of significance for other land uses recommended in OPR's proposed transportation impact guidelines.

OPR's proposed transportation impact guidelines for individual development projects provides screening criteria to identify types, characteristics, or locations of land use projects that would not exceed these VMT thresholds of significance. OPR recommends that if a project or land use proposed as part of the project meet any of the below screening criteria, then VMT impacts are presumed to be less than significant for that land use and a detailed VMT analysis is not required. The screening criteria applicable to the project and how they are applied in San Francisco are described below:

- **Map-Based Screening for Residential, Office, and Retail Projects**—OPR recommends mapping areas that exhibit where VMT is less than the applicable threshold for that land use. Accordingly, the Transportation Authority has developed maps depicting existing VMT levels in San Francisco for residential, office, and retail land uses based on the SF-CHAMP 2012 base-year model run. The Planning Department uses these maps and associated data to determine whether a proposed project is located in an area of the city that is below the VMT threshold.
- **Small Projects**—OPR recommends that lead agencies may generally assume that a project would not have significant VMT impacts if the project would either: (1) generate fewer trips than the level for studying consistency with the applicable congestion management program or (2) where the applicable congestion management program does not provide such a level, fewer than 100 vehicle trips per day. The Transportation Authority's Congestion Management Program, December 2015, does not include a trip threshold for studying consistency. Therefore, the Planning Department uses the 100-vehicle-trip-per-day screening criterion as a level generally where projects would not generate a substantial increase in VMT.
- **Proximity to Transit Stations**—OPR recommends that residential, retail, and office projects, as well projects that are a mix of these uses, proposed within 0.5 mile of an existing major transit stop (as defined by CEQA Section 21064.3) or an existing stop along a high quality transit corridor (as defined by CEQA 21155) would not result in a substantial increase in VMT. However, this presumption would not apply if the project would (1) have a floor area ratio of less than 0.75; (2) include more parking for

²⁰² OPR's proposed transportation impact guidelines state a project would cause substantial additional VMT if it exceeds both the existing city household VMT per capita minus 15 percent and existing regional household VMT per capita minus 15 percent. In San Francisco, the city's average VMT per capita is lower (8.4) than the regional average (17.2). Therefore, the city average is irrelevant for the purposes of the analysis.

use by residents, customers, or employees of the project than required or allowed, without a conditional use; or (3) is inconsistent with the applicable Sustainable Communities Strategy.²⁰³

The Transportation Authority uses SF-CHAMP to estimate VMT by private automobiles and taxis for different land use types. Travel behavior in SF-CHAMP is calibrated based on observed behavior from the California Household Travel Survey 2010–2012, Census data regarding automobile ownership rates and county-to-county worker flows, and observed vehicle counts and transit boardings. SF-CHAMP uses a synthetic population, which is a set of individual actors that represents the Bay Area’s actual population, who make simulated travel decisions for a complete day. The Transportation Authority uses tour-based analysis for office and residential uses, which examines the entire chain of trips over the course of a day, not just trips to and from the project site. For retail uses, the Transportation Authority uses trip-based analysis, which counts VMT from individual trips to and from the project (as opposed to an entire chain of trips). A trip-based approach, as opposed to a tour-based approach, is necessary for retail projects because a tour is likely to consist of trips stopping in multiple locations, and the summarizing of tour VMT to each location would overestimate VMT.

OPR’s proposed transportation impact guidelines do not provide screening criteria or thresholds of significance for other types of land uses, other than those projects that meet the definition of a small project. Therefore, the Planning Department provides additional screening criteria and thresholds of significance to determine if land uses similar in function to residential, office, and retail would generate a substantial increase in VMT. These screening criteria and thresholds of significance are consistent with CEQA Section 21099 and the screening criteria recommended in OPR’s proposed transportation impact guidelines.

The Planning Department applies the Map-Based Screening and Proximity to Transit Station screening criteria to the following land use types:

- **Tourist Hotels, Student Housing, Single Room Occupancy Hotels, and Group Housing**—Trips associated with these land uses typically function similarly to residential. Therefore, these land uses are treated as residential for screening and analysis.
- **Childcare, K–12 Schools, Medical, Post-Secondary Institutional (non-student housing), and Production, Distribution, and Repair (PDR)**—Trips associated with these land uses typically function similarly to office. While some of these uses may have some visitor/customer trips associated with them (e.g., childcare and school drop-off, patient visits, etc.), those trips are often a side trip within a larger tour. For example, the visitor/customer trips are influenced by the origin (e.g., home) and/or ultimate destination (e.g., work) of those tours. Therefore, these land uses are treated as office for screening and analysis.
- **Grocery Stores, Local-Serving Entertainment Venues, Religious Institutions, Parks, and Athletic Clubs**—Trips associated with these land uses typically function similar to retail. Therefore, these types of land uses are treated as retail for screening and analysis.

For development projects, a project would generate substantial additional VMT if it exceeds the regional VMT per capita or employee for the particular use (i.e., residential, retail, or office) less 15 percent. This approach is

²⁰³ A project is considered to be inconsistent with the Sustainable Communities Strategy if development is located outside of areas contemplated for development in the Sustainable Communities Strategy.

consistent with CEQA Section 21099 and the thresholds of significance for other land uses recommended in OPR's proposed transportation impact guidelines.

Transit Analysis

Capacity Utilization. The impact of additional transit ridership generated by the Plan on local and regional transit providers was assessed by comparing the projected ridership to the available transit capacity at the maximum load point. Transit "capacity utilization" refers to transit riders as a percentage of the capacity of the transit line, or group of routes combined and analyzed as screenlines or cordons across which transit routes travel. The transit analyses were conducted for the peak direction of travel for the a.m. and p.m. analysis periods.

For the weekday a.m. and p.m. peak hour analyses, the transit capacity utilization was conducted at the Planning Department's four Muni downtown screenlines and for the three regional screenlines (for transit trips from and to the East Bay, North Bay, and South Bay). In addition, for the purposes of this Central SoMa analysis, the Muni routes serving the Central SoMa transportation study area were grouped into four cordons (Central SoMa cordons) and the capacity utilization was determined. See Figure IV.D-3, Downtown and Regional Screenlines, p. IV.D-8. The Central SoMa cordon analysis was conducted to describe the magnitude of transit travel to or from the Plan Area and to compare estimated transit demand to available capacities of the Muni routes and lines directly serving the Plan Area. Similar to the Muni downtown screenlines, Central SoMa cordons are hypothetical lines surrounding the perimeter of the transportation study area that would be crossed by persons traveling between the Plan Area and other parts of San Francisco. Four cordons were established around the transportation study area to analyze potential impacts of projects on Muni service: Northeast, Northwest, Southwest, and Southeast, with transit corridors within each cordon. The bus routes and light rail lines used in this cordon analysis provide the primary access to and from the Plan Area to the rest of the city. Other bus routes, such as those that do not directly serve the Plan Area, and would require a transfer, are not included. The Muni routes included in each cordon include:

- **Northeast Cordon**—F Market & Wharves historic streetcar, 8 Bayshore, 30 Stockton, 10 Townsend, 12 Folsom-Pacific, 27 Bryant, 30X Stockton Express, 41 Union, 45 Union-Stockton, and the 47 Van Ness.
- **Northwest Cordon**—2 Clement, 3 Jackson, 5 Fulton, 21 Hayes, 31 Balboa, 38 Geary, and the 38R Geary Rapid.
- **Southeast Cordon**—J Church, T Third, 8 Bayshore, 8AX/8BX Bayshore Expresses, 9 San Bruno, 9R San Bruno Rapid, 10 Townsend, 12 Folsom-Pacific, 14 Mission, 14R Mission Rapid, 14X Mission Express 19 Polk, and the 27 Bryant.
- **Southwest Cordon**—K Ingleside, L Taraval, M Ocean View, N Judah, 6 Parnassus, 7X Noriega Express, and the 7R Haight-Noriega Rapid.

The Muni downtown screenlines, regional screenlines, and the Central SoMa cordons are presented on Figure IV.D-3.

For service provided by Muni, the capacity includes seated passengers and an appreciable number of standing passengers per vehicle (the number of standing passengers is between 30 percent and 80 percent of the seated passengers depending upon the specific transit vehicle configuration). Muni has established a capacity

utilization standard of 85 percent, which was applied for assessment of peak hour conditions. The regional transit providers have a peak hour capacity utilization standard of 100 percent.

The Plan was determined to have a significant transit impact if project-generated transit trips would cause Muni downtown or regional screenlines, and Central SoMa cordons, operating at less than their capacity utilization standards under existing conditions, to operate above capacity utilization standards.

Under 2040 cumulative conditions, the Plan was determined to have a significant cumulative impact if its implementation would contribute considerably to a screenline or corridor projected to operate at greater than the capacity utilization standard under 2040 cumulative plus project conditions (i.e., a contribution of five percent or more to the transit ridership on the screenline or cordon). In addition, if it was determined that the Plan would have a significant project-specific transit impact under existing plus Plan conditions, then the impact would also be considered a significant cumulative impact under 2040 cumulative conditions.

Transit Travel Times. Impacts of development under the Plan and proposed street network changes on transit lines were also measured in terms of increases to transit travel times. The transit delay analysis was conducted for the a.m. and p.m. peak hour conditions for the 8 Bayshore, 8AX Bayshore Express, 8BX Bayshore Express, 10 Townsend, 12 Folsom-Pacific, 14 Mission, 14R Mission Rapid, 27 Bryant, 30 Stockton, 45 Union-Stockton, and 47 Van Ness routes. The analysis was conducted for conditions considering the impact associated with new development that could occur under the Plan and the proposed street network changes (i.e., upgraded and new transit-only lanes, travel lane reductions, cycle tracks²⁰⁴).

The analysis evaluated increases to transit travel times associated with the following three influencing factors:

- **Traffic congestion delay**—Traffic congestion associated with increases in area traffic slows down transit vehicles and results in increased transit travel times. Traffic congestion delays are calculated by summing the average vehicular delay at each intersection along the transit routes within the transportation study area. The increase in total route segment delay is equal to the increase in travel time associated with the Plan.
- **Transit reentry delay**—Transit vehicles typically experience delays after stopping to pick up and drop off passengers while waiting for gaps in adjacent street traffic in order to pull out of bus stops. As traffic volumes on the adjacent street increase, reentering the flow of traffic becomes more difficult and transit vehicles experience increased delay. Transit reentry delay was calculated using empirical data in the 2000 Highway Capacity Manual (HCM). Total transit reentry delay for each route was calculated as the sum of transit reentry delay at each stop within the transportation study area.
- **Passenger boarding delay**—Although increases in transit ridership are generally viewed positively, the amount of time a transit vehicle has to stop to pick up and drop off passengers (i.e., the transit vehicle dwell time) is directly correlated to the number of passengers boarding the vehicle. As general transit ridership grows, vehicles would have to spend more time at stops, which may increase overall transit travel times. Passenger boarding delay was calculated assuming four seconds per passenger boarding or alighting. Passenger boardings within the study area were estimated using the transit assignment by route, as obtained from the SF-CHAMP model.

²⁰⁴ A cycle track is an exclusive bicycle facility that is separated from vehicle traffic and parked vehicles by a buffer zone.

The Plan was determined to have a significant impact if it would increase existing transit travel times on a route so that additional transit vehicles would be required to maintain the existing headways between buses. This was assumed to be the case if the Plan's travel time increases on a particular route would be greater than half of the existing route headway, or the added travel time would require the provision of one or more additional transit vehicles in order to maintain scheduled service, as determined by SFMTA's scheduling spreadsheet. If it was determined that the Plan would have a significant project-specific travel time impact under existing plus Plan conditions, then the impact would also be considered a significant cumulative impact under 2040 cumulative conditions.

Pedestrian Analysis

Pedestrian conditions were assessed qualitatively and quantitatively. The qualitative assessment included assessment of safety and right-of-way issues, potential worsening of existing, or creation of new, safety hazards, and conflicts with bicycles, transit, and vehicles.

Pedestrian crosswalk, sidewalk and corner LOS conditions were analyzed quantitatively for the peak hour of both the midday and p.m. peak periods (i.e., peak periods of 11:00 a.m. to 1:00 p.m. and 4:00 to 6:00 p.m., respectively). Pedestrian counts at the study locations were counted in April and July 2013, and May 2014. Quantitative analysis of pedestrian operating characteristics of the crosswalk, sidewalk, and corner locations was conducted using the HCM 2000 methodology. 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 side of buildings. LOS for sidewalks is presented for "platoon" conditions, which represents the conditions when pedestrians are walking together in a group. Pedestrian level of service conditions were calculated at the most restrictive sidewalk location (i.e., at the "pinch point") along a given block face.

Crosswalk and corner LOS analysis measures 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 to 24 square feet per pedestrian for crosswalks, and approximately 10 to 15 pedestrians per minute per foot for sidewalks. LOS E and LOS F represent unacceptable conditions. At LOS E normal walking gaits must be adjusted due to congested conditions and independent movements are difficult; at LOS F walking speeds are severely restricted.

Under existing plus Plan conditions, the Plan was determined to have a significant pedestrian impact at a crosswalk, sidewalk or corner location if it would cause the analysis location to deteriorate from LOS D or better to LOS E or LOS F, or from LOS E to LOS F conditions. Under 2040 cumulative conditions, the Plan was determined to have a significant impact if its implementation would contribute considerably to pedestrian LOS E or LOS F conditions under 2040 cumulative plus Plan conditions. In addition, if it was determined that the Plan would have a significant project-specific pedestrian impact under existing plus Plan conditions, then the impact would also be considered a significant cumulative impact under 2040 cumulative conditions.

Bicycle Analysis

Bicycle conditions were assessed qualitatively as they relate to the project area, including bicycle routes, safety and right-of-way issues, potential worsening of existing or creation of new safety hazards, and conflicts with vehicles and commercial vehicle loading activities.

Loading Analysis

Loading analysis for the Plan was conducted by comparing the loading supply that would be provided to the projected demand that would be generated by development under the Plan, as well as the effects of the proposed street network changes on the on-street loading supply on safety and right-of-way issues, potential worsening of existing or creation of new safety hazards, and conflicts with bicycle, transit and vehicles.

Parking Analysis

A parking assessment was conducted by comparing the proposed parking supply to the parking demand generated by development that could occur under the Plan. The effects of the proposed street network changes on the on-street parking supply and areawide parking conditions was assessed, as well as the effects of increased parking demand and changes in on-street parking supply on safety and right-of-way issues.

Emergency Vehicle Access Analysis

Potential impacts on emergency vehicle access were assessed qualitatively. Specifically, the analysis assessed whether the proposed street network changes and/or travel demand associated with the Plan would impair, hinder, or preclude adequate emergency vehicle access.

Construction-Related Transportation Impact Analysis

Potential short-term construction impacts were assessed qualitatively based on impacts of general construction-related activities for development projects and street network improvements on sidewalks, bicycle lanes, and/or travel lanes.

Travel Demand Methodology and Results

Methodology

Travel demand associated with the Plan's projected growth in residential units and jobs, as well as changes in travel patterns associated with the Plan's proposed street network changes were estimated based on output from the San Francisco County Transportation Authority's travel demand forecasting model (SF-CHAMP model). The SF-CHAMP model is an activity-based travel demand model that has been validated to represent existing and future transportation conditions in San Francisco. The model predicts all person travel for a full day based on the total number, and locations, of population, housing units and employment, which are then allocated to different periods throughout the day, using time of day sub-models. The SF-CHAMP model predicts person travel by mode for auto, transit, walking and bicycle trips. The SF-CHAMP model also provides forecasts of vehicular traffic on regional freeways, major arterials and on the transportation study

area local roadway network considering the available roadway capacity, origin-destination demand and travel speeds when assigning the future travel demand to the roadway network.

SF-CHAMP divides San Francisco into 981 geographic areas, known as TAZs. It also includes zones outside of San Francisco, for which it uses the same geography as the current MTC Model: “Travel Model One”. For each TAZ, the model estimates the travel demand based on TAZ population and employment assumptions developed by the Association of Bay Area Governments (ABAG). Within San Francisco, the San Francisco Planning Department is responsible for allocating ABAG’s countywide growth forecast to each TAZ for the future cumulative year model, based upon existing zoning and approved plans, using an area’s potential zoning capacity, and the anticipated extent of redevelopment of existing uses. The current cumulative future year of 2040 has been used consistently for recent large transportation studies in San Francisco. The ABAG assumptions used for this study are from the *Projections, Jobs-Housing Connection*, May 2012.

Forecasts of transit ridership, pedestrians, and traffic for use in impact analysis were developed by using observed transit ridership, observed pedestrian counts, and observed vehicle turning movement counts, and adding differences in growth from SF-CHAMP model outputs between a ‘No Project’ scenario, and each project scenario. This ensures that each scenario is evaluated against a standard set of numbers that is rooted in observed data. These differences were evaluated and adjusted for developing forecasts. Thus, existing and 2040 cumulative travel demand forecasts for traffic, transit, and pedestrians for each analysis scenario (as defined below) were estimated from output from the SF-CHAMP model as follows:

- The “Existing plus Plan” travel demand was estimated by adding the traffic, transit, and pedestrian trip growth obtained from the SF-CHAMP model between existing conditions without and with the Plan, to actual data collected in the field.
- Future year “2040 cumulative No Project” (i.e. without the Plan) conditions were developed by adding traffic, transit, and pedestrian trip growth obtained from the SF-CHAMP model between existing and 2040 No Project conditions to actual existing data collected in the field.
- The “2040 cumulative plus Plan” conditions were developed by adding the traffic, transit, and pedestrian trip growth obtained from the SF-CHAMP model between 2040 cumulative No Project conditions (i.e., without the Plan) and 2040 conditions with the Plan, to the 2040 cumulative No Project conditions (as developed above).

Central SoMa Plan Travel Demand by Mode of Travel

The travel demand associated with development under the Plan includes trips generated by additional employees, residents, and visitors. **Table IV.D-3, Summary of Central SoMa Plan Area Weekday AM and PM Peak Hour Travel Demand by Mode—Existing and 2040 Cumulative Conditions**, summarizes the increase in person trips²⁰⁵ and vehicle trips during the a.m. and p.m. peak hours generated by development under the Plan for both existing and 2040 cumulative conditions. Results of the various SF-CHAMP model analysis scenarios that include the street network changes did not identify appreciable changes to the number or mode of person trips when compared to the scenario with only development under the Plan, thus they are not presented in Table IV.D-3.

²⁰⁵ A person trip is a trip made by one person by any means of transportation (auto, transit, walk, etc.).

TABLE IV.D-3 SUMMARY OF CENTRAL SOMA PLAN AREA WEEKDAY AM AND PM PEAK HOUR TRAVEL DEMAND BY MODE—EXISTING AND 2040 CUMULATIVE CONDITIONS

	Person Trips				Vehicle Trips
	Auto	Transit	Other ^a	Total	
EXISTING CONDITIONS					
AM Peak Hour					
Existing	8,420	7,290	5,530	21,240	7,530
Existing plus Plan	12,410	11,450	9,460	33,320	10,770
Change from Existing	3,990 (47%)	4,160 (57%)	3,930 (71%)	12,080 (57%)	3,240 (43%)
PM Peak Hour					
Existing	11,350	8,510	8,850	28,710	9,770
Existing plus Plan	16,560	12,940	14,970	44,470	13,810
Change from Existing	5,210 (46%)	4,430 (52%)	6,120 (69%)	15,760 (55%)	4,040 (41%)
2040 CUMULATIVE CONDITIONS					
AM Peak Hour					
2040 Cumulative No Project	10,770	13,860	11,690	36,320	9,200
2040 Cumulative plus Plan	13,840	18,070	15,340	47,250	11,670
Change from 2040 Cumulative No Project	3,070 (29%)	4,210 (30%)	3,650 (31%)	10,930 (30%)	2,470 (27%)
PM Peak Hour					
2040 Cumulative No Project	15,750	16,730	18,950	51,430	12,890
2040 Cumulative plus Plan	19,830	21,320	24,880	66,030	15,950
Change from 2040 Cumulative No Project ^b	4,080 (26%)	4,590 (27%)	5,930 (31%)	14,600 (28%)	3,060 (24%)

SOURCE: San Francisco Transportation Authority; Fehr & Peers, 2016.

NOTES:

- Other includes non-motorized modes such as walking and bicycling.
- Overall, the project generated trips decrease by approximately 10 percent between the existing and future land uses. This is consistent with observations of how SF-CHAMP and other travel models predict travel behaviors in the future. The primary reasons for reduction in trips between existing and future years is due to a greater internalization of trips with TAZs caused by a better balance of jobs and housing and increased cost to exit TAZs due to greater congestion in the future.

As shown in Table IV.D-3, the increase in percentage growth of each type of person trip with the Plan is similar in both the a.m. and p.m. peak hours under both the existing and 2040 cumulative conditions. The largest shift in trips generated by the Plan, both by magnitude and percentage increase, is ‘other’ trips, which include mostly walk trips, but also bicycle trips. Thus, with the Plan, more people may choose to travel via walking and bicycling due to both the increase in complimentary land uses in the Plan Area (e.g., jobs, housing, retail, etc.) and pedestrian amenities associated with the Plan. This result can further be seen in **Table IV.D-4, Summary of Mode of Travel for Central SoMa—Weekday PM PEAK Period—Existing and 2040 Cumulative Conditions**,

where for both the existing and 2040 cumulative conditions, the percentage of auto and transit trips with implementation of the Plan either stay the same, or decrease, and ‘other’ trips increase.

TABLE IV.D-4 SUMMARY OF MODE OF TRAVEL FOR CENTRAL SOMA—WEEKDAY PM PEAK PERIOD—EXISTING AND 2040 CUMULATIVE CONDITIONS

Mode of Travel	Existing Conditions		2040 Cumulative Conditions	
	Existing	Existing plus Plan	No Project	2040 Cumulative plus Plan
Auto	39%	37%	31%	30%
Transit	30%	29%	32%	32%
Other ^a	31%	34%	37%	38%
Total	100%	100%	100%	100%

SOURCE: San Francisco Transportation Authority; Fehr & Peers, 2016.

NOTES:

The mode share conditions for a.m. peak conditions are similar to the p.m. peak presented in this table, however, with slighter higher transit mode share and slightly lower mode share for other modes, which includes walking and bicycling.

a. Other includes non-motorized modes, including walking and bicycling.

Loading and Parking Demand

The *SF Guidelines* methodologies for estimating commercial vehicle and freight loading/unloading demand and parking demand were used to calculate the demand associated with development under the Plan. Development under the Plan is expected to generate a daily truck/service vehicle loading demand of 1,754 loading spaces; the peak hour loading demand is expected to be about 102 spaces. In addition, development under the Plan is expected to generate a net-new daily parking demand of 20,973 spaces, 27 percent of which would be for residential demand and 73 percent of which would be for non-residential uses (including demand for employee and visitor parking).

Impact Evaluation

This section presents the assessment of traffic, transit, pedestrian, bicycle, loading, parking, emergency vehicle access, and construction impacts generated by the proposed project.

VMT Impacts

Impact TR-1: Development under the Plan, including the proposed open space improvements and the street network changes, would not cause substantial additional VMT or substantially increase automobile travel. (Less than Significant)

As presented under section “Significance Criteria” above, traffic impacts were assessed based on changes in VMT and automobile travel, and whether the Plan would create major traffic hazards. The impact assessment below also includes a discussion of intersection and freeway ramp operations, which is provided for informational purposes only. As noted in the Regulatory Framework section above, and consistent with CEQA Section 21099(b)(1), vehicle delay is no longer used as a significance criterion in San Francisco.

The effects of the proposed rezoning, as well as the street network changes included as part of the Plan, regarding VMT are analyzed in this EIR at a programmatic level, while the proposed street network changes

are also analyzed at a project level. Specific development projects within the Plan Area may be required to go through separate environmental review, and therefore information for project-level analysis of subsequent development projects is also included in this VMT analysis for informational purposes.

Development under the Plan (Programmatic Level Analysis). The impact assessment of the Plan's rezoning proposal to provide for increased development potential requires demonstrating consistency with the region's sustainable communities strategy (SCS). The MTC's 2013 Regional Transportation Plan, *Plan Bay Area*, adopted in July 2013, is the region's SCS. *Plan Bay Area* set a VMT per capita reduction target of 10 percent below the Bay Area 2005 regional average VMT levels by 2040 for residential development. No VMT per employee target was set, however, VMT per capita for employment is included in this impact assessment.²⁰⁶ The area affected by the Plan is located in the SoMa neighborhood, and, for purposes of this analysis, is bounded by Market, Second, Townsend, and Sixth Streets. Central SoMa is located in the central core of San Francisco, which is the urban hub of the San Francisco Bay Area region, and is located within a Priority Development Area in *Plan Bay Area*. The Plan does not specify development in outlying areas or areas specified as open space or priority conservation areas in the SCS.

In preparing *Plan Bay Area*, MTC used a regional activity-based travel model, Travel Model One, to estimate the Bay Area regional average VMT.²⁰⁷ The *Plan Bay Area* VMT data was used to estimate the 2005 and 2040 residential VMT per capita and office VMT per employee for the Central SoMa area used in the analysis (i.e., the area bounded by Market, Second, Townsend, and Sixth Streets; the area where the Plan would primarily affect travel patterns).^{208,209} The 2005 and 2040 VMT data from the MTC Travel Model One was adjusted to reflect the VMT for the Central SoMa area, and also to reflect the projected increase in residents and employment associated with the Plan. The results of the VMT analysis of the proposed Plan are presented in **Table IV.D-5, Average Daily VMT per Capita, Plan Bay Area Data, 2005 Baseline and 2040 (with Central SoMa Plan) Conditions**.

As presented in Table IV.D-5, for residential uses, the reduction in daily VMT per capita for the Central SoMa area between 2005 and 2040 would be 30.7 percent with implementation of the Central SoMa Plan, which is greater than the target 10 percent reduction below 2005 levels in *Plan Bay Area*. Furthermore, the residential daily VMT per capita for the Central SoMa area of 2.8 for 2005 and 2.0 for 2040 (with Plan implementation) is substantially below the regional average target of 14.6 average daily VMT per capita (i.e., Bay Area Regional average daily VMT of 16.2 less 10 percent is 14.6 average daily VMT per capita). While not used for determining consistency with *Plan Bay Area*, the average daily VMT per employee in the Central SoMa analysis area is also projected to decrease between 2005 and 2040 conditions. As shown on Table IV.D-5, the reduction in daily VMT per employee for the Central SoMa area between 2005 and 2040 would be 26.6 percent. In addition, similar to the residential VMT per capita, the daily VMT per employee for the Central SoMa area of 10.4 for 2005 and 7.6 for 2040 conditions is substantially below the Bay Area regional average of 24.5 for

²⁰⁶ Association of Bay Area Governments and Metropolitan Transportation Commission, Plan Bay Area, July 18, 2013. Available at http://files.mtc.ca.gov/s3.amazonaws.com/pdf/Plan_Bay_Area_FINAL/pbafinal/index.html.

²⁰⁷ Documentation regarding Travel Model One and the use of Travel Model One for Plan Bay Area is available online. Association of Bay Area Governments and Metropolitan Transportation Commission, Model Documentation and Presentations. Available at <http://analytics.mtc.ca.gov/foswiki/Main/Development>. Association of Bay Area Governments and Metropolitan Transportation Commission, Model Documentation and Presentations. Available at <http://analytics.mtc.ca.gov/foswiki/Main/PlanBayArea>.

²⁰⁸ Data available at <http://analytics.mtc.ca.gov/foswiki/Main/VmtPerCapita>.

²⁰⁹ Data available at <http://analytics.mtc.ca.gov/foswiki/Main/PlanBayAreaVmtPerCapita>.

2005 and 20.3 for 2040 conditions. Therefore, the Central SoMa Plan Area is expected to attain the *Plan Bay Area* goal of reducing VMT per capita by 10 percent compared to year 2005 levels, and programmatic level VMT impacts would be *less than significant*. The VMT per capita would likely decrease gradually from 2005 levels to the projected 2040 levels over time as Plan implementation progresses.

TABLE IV.D-5 AVERAGE DAILY VMT PER CAPITA, PLAN BAY AREA DATA, 2005 BASELINE AND 2040 (WITH CENTRAL SOMA PLAN) CONDITIONS

Type	2005 ^a	2040 with Plan	
		VMT per Capita	% Reduction in VMT in Central SoMa from 2005
Central SoMa Area			
Residential ^b	2.8	2.0	30.7%
Employment ^c	10.4	7.6	26.6%
Bay Area Regional Average (without the Plan)			
Residential ^b	16.2	14.8	—
Employment ^c	24.5	20.3	—

SOURCE: MTC/ABAG; LCW Consulting, 2016.

NOTES:

- The MTC/ABAG Plan Bay Area VMT data was the source for the 2005 and 2040 VMT per capita for the Bay Area Regional Average and for the Central SoMa area average. The average VMT per capita for the seven MTC TAZs that comprise the Central SoMa area used for the VMT analysis (i.e., bounded by Market, Second, Townsend, and Sixth Streets) were adjusted to reflect that only a portion of three MTC TAZs are included within the Central SoMa analysis area. The adjustments were based on the more detailed TAZ land use data used in the Transportation Authority's SF-CHAMP model for the analysis scenarios developed for this project. Analysis of consistency with Plan Bay Area, the regional SCS, is based on the goal of a 10 percent reduction in residential average daily VMT per capita between 2005 and 2040 conditions. Average daily VMT for 2012 conditions for the Central SoMa area and the Bay Area regional average are presented in Table IV.D-6, Average Daily VMT per Capita, SF-CHAMP Model Data, Existing (2012) and 2040 Conditions, p. IV.D-38. Differences in VMT values are due to model differences (i.e., MTC's Travel Model One, and the San Francisco's Transportation Authority's SF-CHAMP), and inclusion of all employment within MTC's VMT values, and disaggregation between employees and visitors in the SF-CHAMP model. Despite the differences in the results, the trends between those presented in *Plan Bay Area* and in this EIR are similar. Therefore, the SF-CHAMP estimates presented in Table IV.D-6 are valid to use as a comparison with *Plan Bay Area* estimates.
- For CEQA analysis and consistency of plans with the regional SCS, Plan Bay Area set a VMT per capita reduction target of 10 percent below the Bay Area regional VMT levels for residential population by 2040.
- Employment VMT per capita provided for informational purposes. Plan Bay Area does not include a reduction target for employment.

An assessment of the VMT effects of the proposed Plan rezoning was also performed using the Transportation Authority's SF-CHAMP model to estimate VMT for the TAZs that comprise the area where the Plan would substantively affect travel patterns for 2012 and 2040 conditions. This assessment was conducted to determine if the VMT analysis using the SF-CHAMP model for 2012 and 2040, is in agreement with the MTC/ABAG VMT analysis for 2005 and 2040. The SF-CHAMP model uses 2012 as the existing base conditions, and uses 2040 residential and job growth estimates prepared by Association and Bay Area Governments and adjusted by the San Francisco Planning Department. The land use scenario uses projections from the Sustainable Communities Strategy: Jobs-Housing Connections from *Plan Bay Area*, which were adjusted to reflect land use growth that would be anticipated with the proposed Central SoMa rezoning. SF-CHAMP includes transportation network changes that are reasonably foreseeable, including those in the latest adopted Regional Transportation Plan and the latest adopted San Francisco Transportation Plans, and/or are undergoing

environmental review.²¹⁰ **Table IV.D-6, Average Daily VMT per Capita, SF-CHAMP Model Data, Existing (2012) and 2040 Conditions**, presents the results of the VMT assessment using the Transportation Authority's SF-CHAMP model for the Central SoMa area included in the analysis, and for the Bay Area regional average.

TABLE IV.D-6 AVERAGE DAILY VMT PER CAPITA, SF-CHAMP MODEL DATA, EXISTING (2012) AND 2040 CONDITIONS

Analysis Year/Land Use	Bay Area Regional Average	Central SoMa Area ^a	
		Without Plan ^b	Plus Plan
Existing (2012)			
Residential	17.2	2.1	1.9
Employment (office)	19.1	8.2	8.7
Visitors (retail)	14.9	4.4	4.2
2040 Cumulative			
Residential	16.1	1.8	1.6
Employment (office)	17.0	6.8	7.1
Visitors (retail)	14.6	4.6	4.3

SOURCE: SF-CHAMP, Fehr & Peers, 2016.

NOTES:

- a. Average VMT per capita for the 28 Traffic Analysis Zones (TAZs) within the Central SoMa area bounded by Market, Second, Townsend, and Sixth Streets.
- b. Plan assumes development under the Plan and proposed street network changes.

As shown in Table IV.D-6, the average daily VMT per capita for conditions without and with the Plan would be substantially lower than the Bay Area regional average for the residential, office, and retail land uses. With Plan implementation, VMT per capita would decrease slightly in the residential and retail categories, and increase slightly in the office category. These increases in the employment category are within the general margin of error inherent in efforts to model travel behavior two decades into the future, and the plus Plan VMT per capita levels would remain substantially lower than the Bay Area regional average. Given the relatively low average daily VMT per capita in the Plan Area, locating land use growth in Central SoMa (part of the central core of San Francisco with multiple transit and non-motorized travel options), would result in less VMT per capita than if this growth were to be located in most other locations within the Bay Area or San Francisco. These results are in agreement with those presented in Table IV.D-5.

Street Network Changes (Project-Level Analysis). The Plan includes proposed street network changes that would alter the transportation network. These include safety improvements, conversion of mixed-flow travel lanes to transit-only lanes and cycle tracks, installation of new traffic control devices including signalized midblock pedestrian crossings, signal timing optimization, removal of on-street parking, removal and modification of on-street commercial loading regulations. These Plan features fit within the general types of projects identified by OPR (discussed in the "Approach to Analysis" section above) that would not substantially induce automobile travel. Furthermore, as described above in "Travel Demand Methodology and Results" beginning on p. IV.D-32, results of the SF-CHAMP model analysis scenarios that include the proposed street

²¹⁰ Manoj Madhavan and Chris Espiritu, San Francisco Planning Department, Memo to Transportation Team, "CEQA – 2040 SF-CHAMP Modeling Methodology Assumptions," April 25, 2016.

network changes did not identify appreciable changes to the mode or number of person trips when compared to the scenario with only development under the Plan. Therefore, the proposed street network changes would not result in a substantial increase in automobile travel,²¹¹ and impacts of the transportation elements of the Plan related to VMT would be less than significant.

Future Project-Level Analysis of Subsequent Development Projects. The majority of subsequent development projects under the proposed Plan would likely consist of a variety of mixed-use office, residential, hotel, retail, and PDR (production, distribution, and repair) uses. Other land uses, such as public services and event centers, may also be developed in the area. As described in “Approach to Analysis” above, subsequent development projects in Central SoMa would need to meet the project-level criteria adopted by the Planning Commission. For development projects in San Francisco, a project would result in a significant impact related to substantial additional VMT if it exceeds the regional VMT per capita or employee for the particular land use (i.e., residential, office, or retail) less 15 percent. **Table IV.D-7, Average Daily VMT per Capita for Central SoMa Plan Area TAZs by Land Use, Existing (2012) and 2040 Cumulative Conditions** presents the average daily VMT per capita for the residential, office, and retail land uses for the TAZs within the Central SoMa Plan Area, as obtained from the SF-CHAMP model.

For the TAZs in the Central SoMa Plan Area, the existing daily average VMT per capita for residential and hotel uses ranges from 1.8 to 3.4 across the TAZs that comprise the Central SoMa Plan Area, which is 80 to 90 percent below the existing regional average daily VMT per capita of 17.2 for residential and hotel uses. The existing average daily VMT per capita for the Central SoMa TAZs for office and PDR uses ranges from 7.3 to 18.1, which is 47 to 62 percent below the existing regional average daily VMT per capita of 19.1 for office and PDR uses. The existing daily average VMT per capita for the Central SoMa TAZs for retail uses ranges from 7.0 to 10.3, which is 31 to 53 percent below the existing regional average daily VMT per capita of 14.9 for retail uses. Given that all subsequent projects under the Plan would be located in an area where the existing VMT is more than 15 percent below the existing regional average, it is anticipated that most subsequent mixed-use, office, residential, hotel, retail, or PDR projects pursuant to the Plan would not result in substantial additional VMT and impacts would be less-than-significant. The VMT per capita for all parcels within the Central SoMa Plan Area is more than 15 percent less than the regional VMT, and development projects in these TAZs would therefore meet the Map-based Screening criteria described in the Approach to Analysis Section. Furthermore, all parcels within the Central SoMa Plan Area meet the Proximity to Transit Stations screening criterion (provided such projects also meet the floor area ratio and parking requirements of this criterion), which also indicates that subsequent projects in the Plan Area would not cause substantial additional VMT.²¹² Therefore, it is anticipated that most subsequent development projects pursuant to the proposed Plan would not cause significant VMT impacts. This determination would be confirmed through project-level environmental review at the time when subsequent projects are proposed and considered for approval through the entitlement review process.

Mitigation: None required.

²¹¹ San Francisco Planning Department, Executive Summary: Resolution Modifying Transportation Impact Analysis, Appendix F, Attachment A, March 3, 2016.

²¹² San Francisco Planning Department, Executive Summary: Resolution Modifying Transportation Impact Analysis, Appendix F, Attachment A, March 3, 2016.

TABLE IV.D-7 AVERAGE DAILY VMT PER CAPITA FOR CENTRAL SOMA PLAN AREA TAZs BY LAND USE, EXISTING (2012) AND 2040 CUMULATIVE CONDITIONS

Central SoMa Plan Area TAZs	Existing (2012)			2040 Cumulative		
	Residential	Office	Retail	Residential	Office	Retail
628	2.0	7.6	7.2	1.7	6.5	7.4
631	2.2	8.2	9.1	1.8	6.7	8.7
638	2.5	8.6	9.3	1.9	6.9	9.0
639	2.9	8.7	9.0	2.0	6.8	8.7
640	3.1	8.6	7.4	2.2	6.8	7.7
641	3.2	9.0	7.0	2.2	7.0	7.6
642	3.2	9.4	9.4	2.4	7.3	9.3
643	3.1	9.4	9.6	2.2	7.2	9.3
644	3.2	10.0	9.9	2.3	7.4	9.7
645	2.7	9.2	9.3	2.0	7.0	9.1
664	2.6	8.3	7.7	1.9	6.6	7.8
665	3.0	8.3	7.8	2.1	6.6	7.8
667	1.9	7.5	7.3	1.6	6.1	7.1
668	1.8	7.3	7.2	1.5	6.2	7.2
672	2.1	7.8	7.5	1.7	6.4	7.6
691	3.2	8.2	8.3	2.2	6.5	8.0
692	3.2	8.6	7.8	2.3	6.7	8.1
693	3.3	9.0	8.9	2.4	7.0	8.9
694	3.4	9.4	9.4	2.5	7.3	9.2
925	3.0	10.1	10.3	2.1	7.4	9.6
<i>Minimum</i>	1.8	7.3	7.0	1.5	6.1	7.1
<i>Maximum</i>	3.4	10.1	10.3	2.5	7.4	9.7

SOURCE: SF Planning Department Transportation Information Map, available at <http://sftransportationmap.org/>, 2016.

NOTE:

Average VMT per capita for the Traffic Analysis Zones (TAZs) within the Central SoMa Plan Area.

It should be noted that implementation of **Mitigation Measure M-NO-1a, TDM Plan for Development Projects** (described in Impact NO-1), would encourage sustainable modes such as transit, bicycling, and walking, and discourage the use of single-occupant vehicles through provision of transportation amenities to make travel by transit and active modes, such as bicycling and walking, safer and more convenient. By facilitating travel via non-auto modes, implementation of Mitigation Measure M-NO-1a, TDM Plan for Development Projects, would further reduce the VMT per capita associated with development projects, although it is not required to mitigate the less-than-significant VMT impact. As noted above, the Planning Department is currently pursuing an ordinance amending the *Planning Code* to establish a citywide TDM Program. Resolution 19628 of intent to initiate the *Planning Code* amendments was approved by the Planning Commission on August 4, 2016. If the proposed *Planning Code* amendments are legislated by the Board of Supervisors, development projects within the Plan Area would be subject to the requirements of the TDM Program.

Traffic Impacts

Impact TR-2: Development under the Plan, including the proposed open space improvements and the street network changes, would not result in traffic hazards. (Less than Significant)

A traffic hazard is generally defined as a structure, object, or vegetation that obstructs, hinders, or impairs reasonable and safe view by drivers of other vehicles, pedestrians, or bicyclists traveling on the same street, and restricts the ability of the driver to stop the motor vehicle without danger of an ensuing collision. Development of subsequent residential and non-residential projects under the Plan would not introduce unusual design features that would result in traffic hazards. Plans for development projects are required to undergo various levels of City review to ensure that proposed pedestrian access, vehicular access and streetscape improvements follow appropriate design guidelines, and are constructed consistent with City standards. Similarly, the proposed street network changes under the Plan would be designed to meet City, National Association of City Transportation Officials (NACTO), the California Manual of Uniform Traffic Control Devices, and Federal Highway Association (FHWA) recommendations and standards, as appropriate. These engineering recommendations and standards have been developed over the years to ensure that streets are designed to enhance street safety and to provide safe facilities for walking, bicycling, transit operations, and the movement of motor vehicles.

New development subsequent to the Plan would bring more people into the area, which would result in an increase in the potential for conflicts between vehicles, bicyclists, and pedestrians. Conflict points are located where pedestrians, bicyclists, and/or drivers cross, merge, or diverge. Examples of conflict points include vehicles making a turn over a crosswalk, and vehicles merging across a bicycle or transit-only lane at an intersection approach. The potential for conflicts increases with an increase in the number of roadway users, however, this increased potential for conflicts by itself does not represent a traffic hazard, as defined above, since the guidelines and standards take such increases into account. Furthermore, the proposed implementation of the street network changes (e.g., cycle tracks, sidewalk widening, transit-only lanes) under the Plan would reduce the potential for vehicle-pedestrian and vehicle-bicycle conflicts by designing the streets for all modes, enhancing sight lines and visibility, and reducing motor vehicle travel speeds. For example, removing existing mixed-flow travel lanes would lead to slower vehicle speeds allowing drivers more time to react to unexpected changes in roadway, striping of continental type crosswalks would make pedestrians more visible to drivers and bicyclists, installation of cycle tracks would provide physically separated facilities for vehicles and bicyclists, and the implementation of transit-only lanes would reduce the need for buses to pull out and into the mixed-flow travel lane when accessing bus stops. For these reasons, the impact related to traffic hazards of implementation of the Plan would be *less than significant*.

Mitigation: None required.

As discussed in the “Transportation Sustainability Program” section above, automobile delay is no longer used as a significance criterion in San Francisco. The following discussion of intersection and freeway ramp operations presents the general effects of the Plan on intersection and freeway ramp operations for informational purposes only.

Intersection and Freeway Ramp Operations (Informational)

As noted above, this section provides information on intersection and freeway ramp operations for informational purposes. An intersection vehicle delay analysis was conducted at 36 intersections within the Central SoMa transportation study area for a.m. peak hour conditions, and at 80 intersections for p.m. peak hour conditions. In addition, freeway ramp operation analyses were conducted for six freeway on-ramps and five freeway off-ramps, for a total of 11 freeway ramps on I-80 and I-280 within the Central SoMa transportation study area. Development associated with the Plan would generate 3,240 vehicle trips during the a.m. peak hour, and 4,040 vehicle trips during the p.m. peak hour. The vehicle trips were assigned to the intersections, based on the projected vehicle assignment obtained from the SF-CHAMP model. This analysis was used for calculation of transit delay presented in Impact TR-3. As noted in the Regulatory Framework section, above, vehicle delay is no longer used as a significance criterion in San Francisco, and is discussed in this section for informational purposes only.

Howard/Folsom One-Way Option. The average delay per vehicle at the study intersections would increase with the addition of vehicle trips associated with development under the Plan plus implementation of the proposed street network changes that reflect the Howard/Folsom One-Way Option (one to two mixed-flow travel lanes per direction would be removed from Fourth, Folsom, Harrison, and Bryant Streets to accommodate new transit-only lanes and from Howard, Folsom, Brannan, Third and Fourth Streets to accommodate cycle tracks). Travel lane reductions would result in a redistribution of traffic, and more vehicles would use Mission, Harrison, Fifth, and Sixth Streets, thereby increasing congestion on these streets in the transportation study area. During the a.m. peak hour, the primary streets that would experience increased congestion include Mission Street between New Montgomery and Fourth Streets, and most of Folsom Street west of Third Street. During the p.m. peak hour, the primary streets that would experience increased congestion include most of Howard Street west of Third Street, Folsom Street west of First Street, most of Harrison Street between First and Sixth Streets, and portions of Bryant and Brannan Streets generally between Second and Sixth Streets.

The number of study intersections operating with an average delay of more than 55 seconds per vehicle during the a.m. peak hour would increase from 3 of 36 intersections analyzed under existing conditions to 21 intersections under the Howard/Folsom One-Way Option, and during the p.m. peak hour from 19 of 80 intersections analyzed under existing conditions to 39 intersections under the Howard/Folsom One-Way Option.

Howard/Folsom Two-Way Option. The average delay per vehicle would increase at the study intersections with the addition of vehicle trips associated with development under the Plan plus implementation of the street network changes that reflect the Howard/Folsom Two-Way Option (a reduction in mixed-flow travel lanes on Fourth, Folsom, Harrison, and Bryant Streets to accommodate new transit-only lanes, and on Howard, Folsom, Brannan, Third and Fourth Streets to accommodate the new cycle tracks). Under the Howard/Folsom Two-Way Option, the travel lane reductions and change from one-way to two-way operations on Howard and Folsom Streets would result in a redistribution of traffic throughout the transportation study area. As under the Howard/Folsom One-Way Option, more vehicles would use Mission, Harrison, Fifth, and Sixth Streets, thereby increasing congestion on these streets in the transportation study area.

During the a.m. peak hour, the primary streets that would experience increased congestion include Folsom Street east of Sixth Street, as well as the Third Street and Sixth Street corridors. During the p.m. peak hour, the primary streets that would experience increased congestion include Mission Street between New Montgomery and Fourth Streets, and most of Howard Street west of Third Street. The Folsom Street corridor would also be affected although to a lesser degree than under the Howard/Folsom One-Way Option. Much of Harrison Street and portions of Bryant and Brannan Streets (generally between Second and Sixth Streets) would also experience increased congestion.

The number of intersections operating with an average delay of more than 55 seconds per vehicle during the a.m. peak hour would increase from three of 36 intersections analyzed under existing conditions to 17 under the Howard/Folsom Two-Way Option, and during the p.m. peak hour from 19 of 80 intersections analyzed under existing conditions to 37 under the Howard/Folsom Two-Way Option.

Freeway Ramp Operations. Eleven freeway ramps were analyzed for a.m. and p.m. peak hour conditions. Under existing conditions, eight of the 11 freeway ramps currently operate with a vehicle density greater than 35 passenger cars per mile per lane, or with service volumes reflecting breakdown conditions in the ramp influence area.²¹³ With the addition of Plan-related traffic with the proposed street network changes, ten of the 11 ramps would operate with a vehicle density greater than 35 passenger cars per mile per lane, or with service volumes reflecting breakdown conditions in the ramp influence areas during the a.m. and/or p.m. peak hours.

Transit Impacts

Impact TR-3: Development under the Plan, including the proposed open space improvements and street network changes, would result in a substantial increase in transit demand that would not be accommodated by local transit capacity, and would cause a substantial increase in delays resulting in adverse impacts on local and regional transit routes. (Significant and Unavoidable with Mitigation)

Capacity Utilization Analysis

Development associated with the Plan would generate 4,160 transit trips during the a.m. peak hour, and 4,430 transit trips during the p.m. peak hour. The new transit trips would utilize the nearby Muni and regional transit routes, and may include transfers to other Muni bus routes and light rail lines, or other regional transit providers. The following analyzes impacts to Muni and regional transit lines.

Muni Downtown Screenlines

The analysis of Muni screenlines assesses the effect of project-generated transit-trips on transit conditions in the inbound direction (i.e., towards downtown) during the a.m. peak hour, and in the outbound direction (i.e.,

²¹³ A ramp to freeway junction is generally designed to allow merging and diverging movements to take place at high speeds with minimal disruption of the adjacent traffic stream on the freeway. Breakdown conditions reflect turbulence in the traffic stream, including more lane changes, changes in speeds, and lower average speeds within the ramp influence area.

away from downtown) during the p.m. peak hour. **Table IV.D-8, Muni Downtown Screenlines – Weekday AM and PM Peak Hours - Existing and Existing plus Plan Conditions**, presents the Muni screenline analysis for the existing plus Plan conditions for the a.m. and p.m. peak hours. Overall, with the addition of the project-generated passengers to the four downtown screenlines, the capacity utilization would increase at all screenlines and on most corridors, and the capacity utilization for the overall Muni downtown screenlines would increase from 78.7 to 82.6 percent during the a.m. peak hour, and from 72.1 to 75.1 percent during the p.m. peak hour. During the a.m. peak hour, with the addition of the Plan-generated transit trips, the Plan would increase the capacity utilization on the Other Lines corridor (i.e., the J Church light rail line and the 10 Townsend, 12 Folsom-Pacific, 19 Polk, and 27 Bryant bus routes) of the Southeast screenline from 83.5 percent under existing conditions to 90.5 percent under existing plus Plan conditions, which would exceed Muni’s capacity utilization standard of 85 percent. This would be a *significant* impact on Muni’s capacity on the Other Lines corridor of the Southeast screenline during the a.m. peak hour.

Mitigation Measure M-TR-3a, Transit Enhancements (described below), identifies measures that would increase transit frequency and therefore capacity, would reduce the effect of increased ridership on the Other Lines corridor of the Southeast screenline of the Muni downtown screenlines. However, because it is not known whether or how much additional funding would be generated for transit service as part of this mitigation measure, and whether SFMTA could provide additional service on the impacted routes to fully mitigate project impacts, the Plan’s transit impact on capacity utilization at the downtown screenlines would still be *significant and unavoidable with mitigation*.

During the a.m. peak hour, the Southwest screenline and the Subway Lines corridor of the Southwest screenline currently operate at more than the 85 percent capacity utilization standard, and the Plan would add riders to the corridor and screenline. However, the Plan’s contribution to the total ridership would be less than five percent, and therefore would not be considered a significant impact on the Southwest screenline and the Subway Lines corridor. Similarly, during the p.m. peak hour, the Fulton/Hayes corridor of the Northwest screenline and the Third Street corridor of the Southeast screenline currently operate at more than the 85 percent capacity utilization standard, however, the Plan’s contribution would not be considered a significant project impact on these corridors because the Plan’s contribution to the ridership would be less than five percent.

Muni Central SoMa Cordons

Table IV.D-9, Central SoMa Cordons—Weekday AM and PM Peak Hours—Existing and Existing plus Plan Conditions, presents the Central SoMa Cordon analysis for the existing plus Plan conditions for the a.m. and p.m. peak hours. Similar to the Muni downtown screenlines, the addition of the project-generated riders to the Central SoMa cordons and corridors would increase the capacity utilization during the a.m. and p.m. peak hours. The greatest increase in capacity utilization would be on the Middle corridor (8 Bayshore, 8AX/8BX Bayshore Expresses, 9 San Bruno, 9R San Bruno Rapid, 12 Folsom-Pacific, and the 27 Bryant) of the Southeast cordon during the p.m. peak hour. However, the Middle corridor of the Southeast cordon would continue to operate below the Muni’s capacity utilization standard of 85 percent with implementation of the Plan.

TABLE IV.D-8 MUNI DOWNTOWN SCREENLINES – WEEKDAY AM AND PM PEAK HOURS - EXISTING AND EXISTING PLUS PLAN CONDITIONS

Muni Screenline and Corridor	Existing			Existing plus Plan	
	Ridership	Capacity	Capacity Utilization	Ridership	Capacity Utilization
AM PEAK HOUR (INBOUND)					
Northeast					
Kearny/Stockton	2,211	3,050	72.5%	2,429	79.6%
Other lines	550	1,141	48.2%	568	49.7%
<i>Northeast Screenline Total</i>	<i>2,761</i>	<i>4,191</i>	<i>65.9%</i>	<i>2,996</i>	<i>71.5%</i>
Northwest					
Geary	1,821	2,490	73.2%	1,937	77.8%
California	1,610	2,010	80.1%	1,635	81.3%
Sutter/Clement	480	630	76.2%	489	77.6%
Fulton/Hayes	1,277	1,680	76.0%	1,316	78.3%
Balboa	758	1,019	74.4%	758	74.4%
<i>Northwest Screenline Total</i>	<i>5,946</i>	<i>7,828</i>	<i>76.0%</i>	<i>6,135</i>	<i>78.4%</i>
Southeast					
Third Street	350	793	44.1%	366	46.2%
Mission	1,643	2,509	65.5%	1,731	69.0%
San Bruno/Bayshore	1,689	2,134	79.1%	1,755	82.2%
Other lines	1,466	1,756	83.5%	1,590	90.5%
<i>Southeast Screenline Total</i>	<i>5,148</i>	<i>7,193</i>	<i>71.6%</i>	<i>5,443</i>	<i>75.7%</i>
Southwest					
Subway lines	6,332	6,205	102.0%	6,625	106.8%
Haight/Noriega	1,121	1,554	72.1%	1,205	77.6%
Other lines	465	700	66.4%	465	66.4%
<i>Southwest Screenline Total</i>	<i>7,917</i>	<i>8,459</i>	93.6%	<i>8,295</i>	98.1%
<i>Muni Screenlines Total</i>	<i>21,772</i>	<i>27,671</i>	<i>78.7%</i>	<i>22,869</i>	<i>82.6%</i>
PM PEAK HOUR (OUTBOUND)					
Northeast					
Kearny/Stockton	2,245	3,327	67.5%	2,245	67.5%
Other lines	683	1,078	63.4%	704	65.3%
<i>Northeast Screenline Total</i>	<i>2,928</i>	<i>4,405</i>	<i>66.5%</i>	<i>2,949</i>	<i>66.9%</i>
Northwest					
Geary	1,964	2,623	74.9%	2,081	79.3%
California	1,322	1,752	75.4%	1,377	78.6%
Sutter/Clement	425	630	67.5%	439	69.6%
Fulton/Hayes	1,184	1,323	89.5%	1,184	89.5%
Balboa	625	974	64.2%	625	64.2%
<i>Northwest Screenline Total</i>	<i>5,519</i>	<i>7,302</i>	<i>75.6%</i>	<i>5,705</i>	<i>78.1%</i>
Southeast					
Third Street	782	793	98.6%	790	99.5%
Mission	1,407	2,601	54.1%	1,474	56.7%
San Bruno/Bayshore	1,536	2,134	72.0%	1,697	79.5%
Other lines	1,084	1,675	64.7%	1,176	70.2%
<i>Southeast Screenline Total</i>	<i>4,809</i>	<i>7,203</i>	<i>66.8%</i>	<i>5,136</i>	<i>71.3%</i>
Southwest					
Subway lines	4,904	6,164	79.6%	5,087	82.5%
Haight/Noriega	977	1,554	62.9%	1,080	69.5%
Other lines	555	700	79.3%	577	79.5%
<i>Southwest Screenline Total</i>	<i>6,436</i>	<i>8,418</i>	<i>76.5%</i>	<i>6,724</i>	<i>79.9%</i>
<i>Muni Screenlines Total</i>	<i>19,693</i>	<i>21,328</i>	<i>72.1%</i>	<i>20,514</i>	<i>75.1%</i>

SOURCE: SF Planning Department Memorandum, *Transit Data for Transportation Impact Studies*, May 2015, Fehr & Peers, 2016.

NOTES:

Bold indicates capacity utilization of 85 percent or greater.**Shaded** indicates significant project impact.

TABLE IV.D-9 CENTRAL SoMa CORDONS — WEEKDAY AM AND PM PEAK HOURS — EXISTING AND EXISTING PLUS PLAN CONDITIONS

Central SoMa Cordon and Corridor	Existing			Existing plus Plan	
	Ridership	Capacity	Capacity Utilization	Ridership	Capacity Utilization
AM PEAK HOUR (INBOUND)					
Northeast Cordon					
Eastern Corridor	550	1,141	48.2%	567	49.7%
Middle Corridor	2,211	3,050	72.5%	2,428	79.6%
Western Corridor	416	567	73.4%	442	78.0%
<i>Northeast Cordon Total</i>	<i>3,177</i>	<i>4,758</i>	<i>66.8%</i>	<i>3,437</i>	<i>72.2%</i>
Northwest Cordon					
Northern Corridor	480	630	76.2%	489	77.6%
Middle Corridor	1,342	1,831	73.3%	1,451	79.2%
Southern Corridor	947	1,365	69.4%	983	72.0%
<i>Northwest Cordon Total</i>	<i>2,768</i>	<i>3,826</i>	<i>72.4%</i>	<i>2,922</i>	<i>76.4%</i>
Southeast Cordon					
Eastern Corridor	782	1,315	59.5%	820	62.4%
Middle Corridor	1,969	2,575	76.5%	2,076	80.6%
Western Corridor	2,022	2,598	77.8%	2,161	83.2%
<i>Southeast Cordon Total</i>	<i>4,773</i>	<i>6,488</i>	<i>73.6%</i>	<i>5,057</i>	<i>77.9%</i>
Southwest Cordon					
Northern Corridor	3,010	2,838	106.0%	3,153	111.1%
Middle Corridor	1,924	2,163	89.0%	2,031	93.5%
Southern Corridor	2,267	2,380	95.2%	2,362	99.2%
<i>Southwest Cordon Total</i>	<i>7,200</i>	<i>7,381</i>	97.6%	<i>7,545</i>	102.2%
<i>Central SoMa Cordons Total</i>	<i>17,918</i>	<i>22,453</i>	<i>79.8%</i>	<i>18,961</i>	<i>84.5%</i>
PM PEAK HOUR (OUTBOUND)					
Northeast Cordon					
Eastern Corridor	683	1,078	63.4%	704	65.3%
Middle Corridor	2,245	3,327	67.5%	2,245	67.5%
Western Corridor	436	630	69.2%	489	77.6%
<i>Northeast Cordon Total</i>	<i>3,364</i>	<i>5,035</i>	<i>66.8%</i>	<i>3,438</i>	<i>68.3%</i>
Northwest Cordon					
Northern Corridor	425	630	67.5%	439	69.7%
Middle Corridor	1,567	1,965	79.7%	1,631	83.0%
Southern Corridor	964	1,121	86.0%	964	86.0%
<i>Northwest Cordon Total</i>	<i>2,956</i>	<i>3,716</i>	<i>79.6%</i>	<i>3,034</i>	<i>81.7%</i>
Southeast Cordon					
Eastern Corridor	1,103	1,234	89.4%	1,103	89.4%
Middle Corridor	1,760	2,575	68.3%	1,978	76.8%
Western Corridor	1,609	2,689	59.0%	1,766	65.7%
<i>Southeast Cordon Total</i>	<i>4,472</i>	<i>6,498</i>	<i>68.8%</i>	<i>4,847</i>	<i>74.6%</i>
Southwest Cordon					
Northern Corridor	2,426	2,995	81.0%	2,593	86.6%
Middle Corridor	1,396	1,965	71.1%	1,429	72.7%
Southern Corridor	1,813	2,380	76.2%	1,885	79.2%
<i>Southwest Cordon Total</i>	<i>5,635</i>	<i>7,340</i>	<i>76.8%</i>	<i>5,907</i>	<i>80.5%</i>
<i>Central SoMa Cordons Total</i>	<i>16,428</i>	<i>22,589</i>	<i>72.7%</i>	<i>17,227</i>	<i>76.3%</i>

SOURCE: SF Planning Department Memorandum, *Transit Data for Transportation Impact Studies*, May 2015, Fehr & Peers, 2016.

NOTES:

Bold indicates capacity utilization of 85 percent or greater.**Shaded** indicates significant project impact.

During the a.m. peak hour, the Southwest cordon and the Middle and Southern corridors of the Southwest cordon currently operate at more than the 85 percent capacity utilization standard, and the Plan would add riders to the corridors and cordon. However, the Plan's contribution to the ridership would be less than five percent of total ridership, and therefore this impact would be considered *less than significant*.

During the p.m. peak hour, with the addition of the project-generated transit trips, the Plan would increase the capacity utilization on the Northern corridor of the Southwest cordon (i.e., the N Judah, 7X Noriega Express, 7/7R Haight-Noriega Rapid routes) from 81.0 percent under existing conditions to 86.6 percent under existing plus Plan conditions, which would exceed Muni's capacity utilization standard of 85 percent. This would be a *significant* impact on Muni capacity utilization on the Northern corridor of the Southwest cordon. In addition, during the a.m. peak hour, development under the Plan would contribute considerably (i.e., more than five percent of total ridership) to the Northern corridor of the Southwest cordon. Therefore, implementation of the Plan would result in a *significant* impact on Muni capacity utilization on the Northern corridor of the Southwest cordon during the a.m. and p.m. peak hours.

In addition, during the p.m. peak hour, the Southern corridor of the Northwest cordon and the Eastern corridor of the Southeast cordon currently operate at more than the 85 percent capacity utilization standard, however, the Plan's contribution would be *less than significant* on these corridors because the Plan's contribution to the capacity would be less than five percent.

Implementation of **Mitigation Measure M-TR-3a, Transit Enhancements** (described below), identifies measures that would increase transit frequency and therefore capacity, would reduce the effect of increased ridership on the Northern corridor of the Southwest cordon of the Central SoMa cordons. However, as noted above, because it is not known whether or how much additional funding would be generated for transit service as part of this mitigation measure, and whether SFMTA would provide additional service on the impacted routes to fully mitigate project impacts, the Plan's transit impact on Muni capacity utilization on the Central SoMa cordons would still be *significant and unavoidable with mitigation*.

Regional Screenlines

Table IV.D-10, Regional Transit Screenlines—Weekday AM and PM Peak Hours—Existing and Existing plus Plan Conditions, presents the regional screenline analysis for the existing plus Plan conditions for the a.m. and p.m. peak hours. Similar to the Muni downtown screenlines, the analysis of the regional screenlines assesses the effect of project-generated transit-trips on transit conditions in the inbound direction (i.e., towards downtown) during the a.m. peak hour, and in the outbound direction (i.e., away from downtown) during the p.m. peak hour.

With Plan implementation, during the weekday a.m. peak hour there would be about 1,350 transit trips arriving to Central SoMa from the East Bay, 280 transit trips from the North Bay, and 780 transit trips from the South Bay, while during the weekday p.m. peak hour there would be 1,130 transit trips destined to the East Bay, 90 transit trips to the North Bay, and 690 transit trips to the South Bay. During the a.m. and p.m. peak hours, the North Bay and South Bay screenlines would operate under 100 percent capacity utilization. During the a.m. peak hour, the East Bay screenline would continue to operate over the 100 percent capacity utilization standard (to a larger extent than existing conditions), and during the p.m. peak hour, the additional transit trips destined to the East

TABLE IV.D-10 REGIONAL TRANSIT SCREENLINES — WEEKDAY AM AND PM PEAK HOURS — EXISTING AND EXISTING PLUS PLAN CONDITIONS

Regional Screenline	Existing			Existing plus Plan	
	Ridership	Capacity	Capacity Utilization	Ridership	Capacity Utilization
AM PEAK HOUR (INBOUND)					
East Bay					
BART	25,399	23,256	109.2%	26,521	114.0%
AC Transit	1,568	2,829	55.4%	1,761	62.2%
Ferry	810	1,170	69.2%	844	72.1%
<i>East Bay Total</i>	<i>27,777</i>	<i>27,255</i>	<i>101.9%</i>	<i>29,126</i>	<i>106.9%</i>
North Bay					
GGT Buses	1,330	2,543	52.3%	1,607	63.2%
Ferry	1,082	1,959	55.2%	1,088	55.5%
<i>North Bay Total</i>	<i>2,412</i>	<i>4,502</i>	<i>53.6%</i>	<i>2,695</i>	<i>59.9%</i>
South Bay					
BART	14,150	19,367	73.1%	14,642	75.6%
Caltrain	2,171	3,100	70.0%	2,444	78.8%
SamTrans	255	520	49.0%	265	51.0%
<i>South Bay Total</i>	<i>16,576</i>	<i>22,987</i>	<i>72.1%</i>	<i>17,351</i>	<i>75.5%</i>
<i>Total All Screenlines</i>	<i>46,765</i>	<i>54,744</i>	<i>85.4%</i>	<i>49,172</i>	<i>89.8%</i>
PM PEAK HOUR (OUTBOUND)					
East Bay					
BART	24,488	22,784	107.5%	25,405	111.5%
AC Transit	2,256	3,926	57.5%	2,368	60.3%
Ferry	805	1,615	49.8%	908	56.2%
<i>East Bay Total</i>	<i>27,549</i>	<i>28,325</i>	<i>97.3%</i>	<i>28,681</i>	<i>101.3%</i>
North Bay					
GGT Buses	1,384	2,817	49.1%	1,533	54.4%
Ferry	968	1,959	49.4%	969	49.5%
<i>North Bay Total</i>	<i>2,412</i>	<i>4,776</i>	<i>49.2%</i>	<i>2,502</i>	<i>52.4%</i>
South Bay					
BART	13,500	18,900	71.4%	13,923	73.7%
Caltrain	2,377	3,100	76.7%	2,616	84.4%
SamTrans	141	320	44.1%	171	53.4%
<i>South Bay Total</i>	<i>16,018</i>	<i>22,320</i>	<i>71.8%</i>	<i>16,710</i>	<i>74.9%</i>
<i>Regional Screenlines Total</i>	<i>45,919</i>	<i>55,421</i>	<i>82.9%</i>	<i>47,893</i>	<i>86.4%</i>

SOURCE: SF Planning Department Memoranda, *Transit Data for Transportation Impact Studies*, May 2015 and *Updated BART Regional Screenlines*, October 2016, Fehr & Peers, 2016.

NOTE:

Bold indicates capacity utilization of 100 percent or greater.

Bay would cause the overall East Bay screenline to exceed the 100 percent capacity utilization standard (i.e., increase capacity utilization during the p.m. peak hour from 97.3 to 101.3 percent). This would be considered a *significant* impact. Development under the Plan would add 1,100 a.m. peak hour and 900 p.m. peak hour transit trips that would use BART from and to the East Bay, respectively, would be considered a substantial increase of BART ridership. Implementation of **Mitigation Measure M-TR-3a, Transit Enhancements** (described below), could potentially result in additional funding that could be dedicated to regional transit, including BART; however, it would be speculative at this time to presume that sufficient funding could be available to offset effects of the Plan. Therefore, because it is not known whether and how much additional funding would be generated for regional transit as part of this mitigation measure, the Plan's regional transit impact on BART would still be considered *significant and unavoidable with mitigation*.

Transit Delay Analysis

Table IV.D-11, Muni Transit Delay Analysis—Weekday AM and PM Peak Hours—Existing plus Plan Conditions, presents the transit travel delay analysis for a.m. and p.m. peak hour conditions for the three analysis scenarios: existing plus development under the Plan only (i.e., the Land Use Plan Only Alternative), existing plus development under the Plan and street network changes under the Howard/Folsom One-Way Option, and existing plus development under the Plan and street network changes under the Howard/Folsom Two-Way Option.

Implementation of development under the Plan would result in an increase in Muni route travel times, and would result in substantial delays to a number of Muni routes serving the area. Increases in Muni route travel times would be caused by a combination of factors including additional vehicular traffic and transit ridership generated by development under the Plan.

The Plan's proposed street network changes include the following to prioritize transit:

- A network of dedicated transit-only lanes in order to enhance transit travel times and reliability;
- Upgraded existing and new planned dedicated transit-only lanes with self-enforcing mechanisms such as curbs, channelizers, and colored or textured pavements would discourage or prevent use by unauthorized private vehicles;
- New dedicated transit-only lanes are proposed on:
 - Fourth Street (between Market and Harrison Streets)
 - Folsom Street (between Second and Fourth Streets under the Howard/Folsom Two-Way Option)
 - Harrison Street (between Sixth and 11th Streets for the Howard/Folsom One-Way Option and between Sixth and Seventh Streets under the Howard/Folsom Two-Way Option), and
 - Bryant Street (between Third and Seventh Streets); and
- Peak period transit-only lanes would be provided on segments of Folsom, Harrison, and Bryant Streets.

The Plan proposes similar transit facilities under both the Howard/Folsom One-Way Option and Howard/Folsom Two-Way Option. One difference between the two options is that the Howard/Folsom One-Way Option would provide a protected transit-only lane on Folsom Street for the 12 Folsom-Pacific, while the Howard/Folsom Two-Way Option would not. Therefore, the 12 Folsom-Pacific could experience more travel delay associated with traveling in mixed-flow travel lanes under the Howard/Folsom Two-Way Option, though such delay would be *less than significant* due to the long, 20-minute scheduled headways on this route.

TABLE IV.D-11 MUNI TRANSIT DELAY ANALYSIS—WEEKDAY AM AND PM PEAK HOURS—EXISTING PLUS PLAN CONDITIONS

Route – direction	Existing Headway (min)	Existing plus Land Use Plan Only Alternative (see Section V.I.F, Alternatives)		Existing plus Development under the Plan and Street Network Changes: Howard/Folsom One-Way Option		Existing plus Development under the Plan and Street Network Changes: Howard/Folsom Two-Way Option	
		Travel Time (TT) Increase (min: sec)	TT increase as % of Headway	Travel Time (TT) Increase (min: sec)	TT increase as % of Headway	Travel Time (TT) Increase (min: sec)	TT increase as % of Headway
AM Peak Hour							
8AX Bayshore Express – inbound	7.5	5:40	76%	1:37	22%	1:32	20%
8BX Bayshore Express – inbound	8	7:07	89%	3:13	40%	3:07	39%
27 Bryant – inbound	15	2:13	15%	-0:38	-4%	0:02	0%
30 Stockton & 45 Union-Stockton – outbound	7	6:20	90%	3:20	48%	3:21	48%
PM Peak Hour							
8 Bayshore – inbound	7.5	21:24	285%	6:55	92%	6:58	93%
8AX Bayshore Express – outbound	7.5	-0:42	-9%	-4:44	-63%	-5:19	-71%
8BX Bayshore Express – outbound	7.5	3:27	-46%	0:22	-5%	-0:57	-13%
10 Townsend – inbound	20	4:05	20%	7:53	39%	7:48	39%
10 Townsend – outbound	20	1:32	8%	8:44	44%	12:24	63%
12 Folsom-Pacific – inbound	20	4:32	23%	-0:31	-3%	5:27	27%
12 Folsom-Pacific – outbound	20	5:45	29%	9:11	46%	5:48	29%
14 Mission – inbound	7.5	0:36	8%	2:50	38%	2:57	39%
14 Mission – outbound	7.5	0:59	13%	4:58	66%	4:51	65%
14R Mission Rapid – inbound	9	0:43	8%	3:00	33%	3:07	35%
14R Mission Rapid – outbound	9	1:22	15%	5:28	61%	5:20	59%
27 Bryant – inbound	15	3:27	23%	-1:11	-8%	-1:28	-10%
27 Bryant – outbound	15	11:01	73%	8:45	58%	10:22	69%
30 Stockton & 45 Union-Stockton – inbound	4	9:38	241%	1:42	43%	-2:08	-54%
30 Stockton & 45 Union-Stockton – outbound	4	1:44	43%	-0:28	-12%	-1:15	-31%
47 Van Ness – inbound	10	15:33	156%	6:41	67%	12:16	123%
47 Van Ness – outbound	10	2:16	23%	-4:04	-41%	-4:49	-48%

SOURCE: SFMTA, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTE:

Shaded indicates significant project impact: travel time increases more than 50 percent of the existing transit route headway.

There are two different suboptions for Fourth Street between Market and Folsom Streets. In this segment, the Fourth Street Protected Suboption would include a physically-separated transit-only lane on the west side of the street where right-turning vehicles would not be able to merge across the transit-only lane, but instead would turn right from the adjacent mixed-flow travel lane, while the Fourth Street Right-turn Pocket Suboption would provide a transit-only lane that would not be physically separated and right-turn pockets would be provided for vehicles. While both suboptions would include features that would improve transit operations, the transit delay analysis assumed the Fourth Street Protected Suboption for both the Howard/Folsom One-Way Option and the Howard/Folsom Two-Way Option because this suboption includes more aggressive street network changes on Fourth Street that affect traffic operations at intersections (and thus transit delay). Under the Fourth Street Protected Suboption, southbound transit would have an exclusive signal phase (but at the same time as pedestrians crossing Mission, Howard and Folsom Streets) and transit delay associated with vehicle congestion at the intersection would be limited. Under the Fourth Street Right-turn Pocket Suboption, southbound vehicles turning right would merge across the transit-only lane, which would increase conflicts between transit and other vehicles, and may increase delay to buses in the transit-only lane if right-turning vehicles encroach on the transit-only lane (i.e., at intersection approaches with a substantial number of right-turning vehicles, for example at Howard Street). As discussed in Impact TR-2, the increase in conflicts between transit and other vehicles would not represent a traffic hazard. The Fourth Street Right-turn Pocket Suboption would provide some of the benefits to transit delay reduction included under the Fourth Street Protected Suboption compared to conditions without the Plan.

In addition, the Howard/Folsom One-Way Option includes three suboptions for Folsom Street for the segment of Folsom Street between Essex and Fifth Streets. The Original Suboption would provide a protected eastbound transit-only lane on the section of Folsom Street between Second and Essex Street, which would reduce transit delay associated with vehicles destined to the Essex Street on-ramp to the Bay Bridge. At Essex Street, the provision of a protected transit-only lane would require a separate signal phase to separate the conflict between eastbound through buses and right-turning vehicles. In the Protected Suboption, the Folsom Street transit-only lane west of Fifth Street would transition to the north side of the street alongside the two-way cycle track in order to maneuver around recurring Bay Bridge queues, which would reduce delays for transit in this segment. East of Second Street, eastbound transit would operate in a mixed-flow travel lane. While both suboptions would include features that would improve transit operations on Folsom Street, the transit delay analysis assumed the Original Suboption for Folsom Street for the Howard/Folsom One-Way Option because this suboption includes the more aggressive street network changes that affect traffic operations at intersections (and thus transit delay).

As indicated in Table IV.D-11, for conditions with development under the Plan with the Howard/Folsom One-Way Option, transit travel times would increase to more than half of the existing route headway on the 8 Bayshore, 14 Mission, 14R Mission Rapid, 27 Bryant, and 47 Van Ness. Implementation of the protected transit-only lanes on Third Street as part of the Plan's proposed street network changes would reduce the effect on increased vehicle congestion on Third Street associated with new development and reduced mixed-flow travel lane capacity. Similarly, implementation of transit-only lanes on Harrison and Bryant Streets would reduce the effect of increased congestion on the 27 Bryant route. Overall, with development under the Plan with the Howard/Folsom One-Way Option, the Plan would result in a *significant* impact on the 8 Bayshore, 14 Mission,

14R Mission Rapid, 27 Bryant, and 47 Van Ness routes, due to increased vehicle congestion and boarding delays associated with the additional Plan-generated transit riders.

With implementation of the Howard/Folsom Two-Way Option, travel time impacts would be similar to those identified for the Howard/Folsom One-Way Option. However, implementation of the Howard/Folsom Two-Way Option would also result in *significant impact* on the 10 Townsend route due to additional vehicles using congested approaches along Second Street to reach the Bay Bridge under this option. The new transit-only lanes associated with the Plan would reduce or eliminate the transit reentry delay component of transit delay, however, this decrease would be offset by the additional delay associated with boarding times for additional passengers.

Under existing conditions plus development under the Plan with either the Howard/Folsom One-Way Option or Howard/Folsom Two-Way Option, **Mitigation Measures M-TR-3a, Transit Enhancements, M-TR-2b, Boarding Improvements, M-TR-3d, Signalization and Intersection Restriping at Townsend/Fifth Streets** (described below), would increase frequencies of transit routes, reduce delays associated with passengers getting on and off buses, and reduce the effect of increased vehicle congestion on buses traveling on Third Street and through the intersection of Townsend/Fifth Street. With implementation of these mitigation measures, the transit travel delay impacts on the 8 Bayshore, the 14 Mission, the 14R Mission Rapid, the 27 Bryant, and the 47 Van Ness routes would be reduced to less than significant. In addition, implementation of **Mitigation Measure M-TR-3e, Implement Tow-away Transit-only Lanes on Fifth Street** (described below), would provide a transit-only lane on Fifth Street and would mitigate transit delay impacts on the 47 Van Ness route. However, because it is not known whether or how much additional funding would be generated for transit improvements as part of these mitigation measures, and whether SFMTA could provide additional service, boarding improvements, or a transit-only lane on Fifth Street to fully mitigate project impacts, transit impacts with implementation of the street network changes would still be considered *significant and unavoidable with mitigation*.

Regional Transit. Both SamTrans and Golden Gate Transit buses run on city streets within the Plan Area, and would continue to do so in the future. The Golden Gate Transit 10, 70, 80, 101, and 101X routes run on Mission Street, while the Golden Gate Transit 92, 93, and 54 routes run on Howard, Folsom, and Harrison Streets. SamTrans 292, 397, and KX routes run on Mission Street. Increased congestion at intersections within the Plan Area due to development under the Plan with the street network changes would be expected to increase travel times for Golden Gate Transit and SamTrans buses. Similar to the transit delay impacts identified above for Muni routes on Mission Street (i.e., the 14 Mission, 14R Mission Rapid), and Harrison Street (i.e., the 27 Bryant, 47 Van Ness), the resulting delays could require the deployment of additional buses on some Golden Gate Transit and SamTrans routes in order to maintain headways between buses, and this would be considered a *significant impact* on Golden Gate Transit and SamTrans operations.

Implementation of **Mitigation Measure M-TR-3a, Transit Enhancements**, could potentially result in additional funding that could be dedicated to regional transit including Golden Gate Transit and SamTrans; however, it would be speculative at this time to presume that sufficient funding could be available to offset effects of the Plan. Therefore, because it is not known whether and how much additional funding would be generated for regional transit as part of this mitigation measure, the Plan's transit impact on Golden Gate Transit and SamTrans operations would still be considered *significant and unavoidable with mitigation*.

Signalized Midblock Pedestrian Crossings

Installation of up to 23 new signalized crossings would not substantially affect Muni or Golden Gate Transit operations. The signalized midblock crossings are not expected to introduce new delay into the Central SoMa roadway network system, rather, any changes in delay would be on account of delay being ‘shifted’ both temporally and geographically in that it may occur upstream or downstream of the signalized intersection (the next signalized intersection that a driver would encounter). New signalized pedestrian crossings would be coordinated with upstream and/or downstream intersections to minimize any new delay and/or corresponding queuing as a result of the new traffic signal, and therefore, would not substantially affect the transit travel times. In the event that a Muni or Golden Gate Transit bus stops before reaching the new signalized pedestrian crossing, these buses may incur additional delays. However, additional delay would be similar to delay incurred when stopped at nearby intersections, and the addition of one or more midblock crossings along a route would not substantially affect overall transit travel times for the affected routes. The midblock crossings would not affect any existing bus stops, which are typically located at the intersections, and not midblock. Therefore, the impact of the 23 new signalized midblock pedestrian crossings on transit operations would be *less than significant*.

Mitigation Measures

Mitigation Measure M-TR-3a: Transit Enhancements. The following are City actions that would reduce local and regional transit impacts associated with implementation of the Central SoMa Plan and proposed street network changes.

Enhanced Transit Funding. To accommodate project transit demand, the City shall ensure that sufficient operating and capital funding is secured, including through the following measures:

- Establish fee-based sources of revenue such as parking benefit districts.
- Establish a congestion-charge scheme for downtown San Francisco, with all or a portion of the revenue collected going to support improved local and regional transit service on routes that serve Downtown and the Central SoMa Plan Area.
- Seek grant funding for specific capital improvements from regional, state and federal sources.

Transit Corridor Improvement Review. During the design phase, the SFMTA shall review each street network project that contains portions of Muni transit routes where significant transit delay impacts have been identified (routes 8 Bayshore, 8AX Bayshore Express, 8BX Bayshore Express, 10 Townsend, 14 Mission, 14R Mission Rapid, 27 Bryant, 30 Stockton, 45 Union-Stockton, and 47 Van Ness). Through this review, SFMTA shall incorporate feasible street network design modifications that would meet the performance criteria of maintaining accessible transit service, enhancing transit service times, and offsetting transit delay. Such features could include, but shall not be limited to, transit-only lanes, transit signal priority, queue jumps, stop consolidation, limited or express service, corner or sidewalk bulbs, and transit boarding islands, as determined by the SFMTA, to enhance transit service times and offset transit delay. Any subsequent changes to the street network designs shall be subject to a similar review process.

Transit Accessibility. To enhance transit accessibility, the Planning Department and the SFMTA shall establish a coordinated planning process to link land use planning and development in Central SoMa

to transit and other alternative transportation mode planning. This shall be achieved through some or all of the following measures:

- Implement recommendations of the *Better Streets Plan* that are designed to make the pedestrian environment safer and more comfortable for walk trips throughout the day, especially in areas where sidewalks and other realms of the pedestrian environment are notably unattractive and intimidating for pedestrians and discourage walking as a primary means of circulation. This includes traffic calming strategies in areas with fast-moving, one-way traffic, long blocks, narrow sidewalks and tow-away lanes, as may be found in much of the Central SoMa area.
- Implement building design features that promote primary access to buildings from transit stops and pedestrian areas, and discourage the location of primary access points to buildings through parking lots and other auto-oriented entryways.
- Develop Central SoMa transportation implementation programs that manage and direct resources brought in through pricing programs and development-based fee assessments, as outlined above, to further the multimodal implementation and maintenance of these transportation improvements.

Muni Storage and Maintenance. To ensure that Muni is able to service additional transit vehicles needed to serve increased demand generated by development in Central SoMa, the SFMTA shall provide maintenance and storage facilities. In 2013, the SFMTA prepared a *Real Estate and Facilities Vision for the 21st Century* report.²¹⁴ The document provides a vision for addressing Muni's storage and maintenance needs, particularly in light of substantial growth in fleet as well as changes in the fleet composition.

Mitigation Measure M-TR-3b: Boarding Improvements. The SFMTA shall implement boarding improvements such as low floor buses and pre-payment that would reduce the boarding times to mitigate the impacts on transit travel times on routes where Plan ridership increases are greatest, such as the 8 Bayshore, 8AX/8BX Bayshore Expresses, 10 Townsend, 14 Mission, 14R Mission Rapid, 27 Bryant, 30 Stockton, 45 Union-Stockton, and 47 Van Ness routes. These boarding improvements, which would reduce delay associated with passengers boarding and alighting, shall be made in combination with **Mitigation Measures M-TR-3c, Upgrade Transit-only Lanes on Third Street, M-TR-3d, Signalization and Intersection Restriping at Townsend/Fifth Streets, and M-TR-3e, Implement Tow-away Lanes on Fifth Street**, which would serve to reduce delay associated with traffic congestion along the transit route.

Mitigation Measure M-TR-3c: Signalization and Intersection Restriping at Townsend/Fifth Streets. The SFMTA shall design and construct a new traffic signal at the intersection of Townsend/Fifth Streets, and reconfigure the Townsend Street eastbound approach to provide one dedicated left-turn lane (with an exclusive left turn phase) adjacent to a through lane. This reconfiguration would require restriping of the two existing travel lanes at the eastbound approach to this intersection.

Mitigation Measure M-TR-3d: Implement Tow-away Transit-only Lanes on Fifth Street. The SFMTA shall implement a northbound tow-away transit-only lane on Fifth Street between Townsend and Bryant Streets during the p.m. peak period to mitigate the impacts on transit travel times on the 47 Van Ness. This peak period transit-only lane can be implemented by restricting on-street parking

²¹⁴ SFMTA, *Real Estate and Facilities Vision for the 21st Century*, January 2013. Available at <http://archives.sfmta.com/cms/cmta/documents/1-29-13VisionReport.pdf>, accessed December 31, 2015.

(about 30 parking spaces) on the east side of Fifth Street between Townsend and Bryant Streets during the 3:00 to 7:00 p.m. peak period.

Significance after Mitigation: Implementation of the Plan would result in significant transit impacts on Muni capacity utilization on the Other Lines corridor of the Southeast screenline of the Muni downtown screenlines and on the Northern corridor of the Southwest cordon of the Central SoMa cordons. Implementation of **Mitigation Measure M-TR-3a, Transit Enhancements** (which includes enhanced transit funding, transit corridor improvements, transit accessibility improvements, Muni storage and maintenance improvements, and rider improvements), would reduce the effect of increased ridership, but because it is not known whether or how much additional funding would be generated for transit service as part of this mitigation measure, or whether SFMTA would provide additional service on the impacted routes to fully mitigate project impacts, the Plan's transit impact on Muni capacity utilization is considered *significant and unavoidable with mitigation*.

With implementation of the Plan, the East Bay regional transit screenlines would operate above the regional capacity utilization standard of 100 percent, and the Plan would substantially contribute to increased ridership in excess of the capacity utilization standard, a *significant impact*. Implementation of **Mitigation Measure M-TR-3a, Transit Enhancements** would reduce the effect of increased ridership, but because it is not known whether or how much additional funding would be generated for regional transit service as part of this mitigation measure, or whether additional service would be provided to fully mitigate Plan impacts, the Plan's transit impact on regional transit capacity utilization is considered *significant and unavoidable with mitigation*.

Implementation of the Plan would substantially increase travel times and result in significant impacts on numerous Muni routes traveling in Central SoMa, including the 8 Bayshore, 10 Townsend, 14 Mission, 14R Mission Rapid, 27 Bryant, and/or 47 Van Ness. Impacts on travel times would vary depending on which street network changes are implemented. **Mitigation Measures M-TR-3a, Transit Enhancements, M-TR-3b, Boarding Improvements, M-TR-3c, Upgrade Transit-only Lanes on Third Street, M-TR-3d, Signalization and Intersection Restriping at Townsend/Fifth Streets, and M-TR-3e, Implement Tow-away Transit-only Lanes on Fifth Street**, would potentially reduce the travel time impacts or mitigate them to less-than-significant levels; but because it is not known whether or how much additional funding would be generated for transit improvements as part of these mitigation measures, or whether SFMTA would provide additional service on the impacted routes to fully mitigate project impacts, the effect would not be fully mitigated, and the impacts are considered *significant and unavoidable* even with these mitigation measures.

Implementation of the Plan would also result in increased congestion at intersections within the Plan Area and increase travel times for Golden Gate Transit and SamTrans buses, which could require the deployment of additional buses on some Golden Gate Transit and SamTrans routes in order to maintain headways between buses. This would be considered a significant impact on Golden Gate Transit and SamTrans operations. Implementation of **Mitigation Measure M-TR-3a, Transit Enhancements**, could potentially result in additional funding that could be dedicated to regional transit including Golden Gate Transit and SamTrans, although it would be speculative at this time to presume that sufficient funding could be available to offset effects of the Plan. Therefore, the Plan's transit impact on Golden Gate Transit and SamTrans operations would be considered *significant and unavoidable with mitigation*.

Pedestrian Impacts

Impact TR-4: Development under the Plan, including the proposed open space improvements and street network changes, would not result in pedestrian safety hazards nor result in a substantial overcrowding on sidewalks or at corner locations, but would result in overcrowding at crosswalks. (Significant and Unavoidable with Mitigation)

Pedestrian impacts were assessed qualitatively with respect to pedestrian safety hazards, and quantitatively with respect to pedestrian LOS conditions at crosswalk, corner and sidewalk locations.

Pedestrian Safety Hazards Assessment

Development associated with the Plan would generate about 10,550 pedestrian trips (4,430 transit and 6,120 walk and other modes trips) during the p.m. peak hour. The midday peak hour analysis assumed the same growth as projected for the p.m. peak hour conditions. Existing plus Plan pedestrian volumes were estimated based on development and growth identified by the Transportation Authority's SF-CHAMP travel demand model for the TAZs in the Central SoMa transportation study area.

New development under the Plan would result in a substantial increase in pedestrians, bicyclists, and vehicle trips in Central SoMa, which could increase the potential for conflicts between modes. However, some of the development projects would include pedestrian improvements, as required under the *Better Streets Plan*, and ongoing City projects such as the Vision Zero effort focused on eliminating traffic deaths by 2024. A number of Vision Zero projects have already been implemented within the Central SoMa transportation study area and include improvements such as: new traffic signals, leading pedestrian intervals, continental crosswalks, corner sidewalk extensions, turn restrictions, and audible/accessible pedestrian signals. In addition to these street network improvements, Vision Zero includes citywide efforts including Safe Routes for Seniors, Safe Speeds Campaign (education and enforcement), and SF Smart Streets (an interactive education program for youths).

The proposed street network changes include numerous improvements to the pedestrian network including sidewalk widening to meet the standards in the *Better Streets Plan* where possible, corner sidewalk extensions, pedestrian signal timing upgrades, signalized midblock pedestrian crossings, and opening currently closed crosswalks. Implementation of these improvements would enhance pedestrian conditions in Central SoMa, facilitating pedestrian access (including for seniors and persons with disabilities), and reduce the potential for vehicle-pedestrian and bicycle-pedestrian conflicts associated with increases in pedestrians, bicyclists, and vehicles in Central SoMa generated by development under the Plan, thereby reducing the potential for collisions. For example, corner sidewalk extensions would increase pedestrian visibility to drivers, thereby allowing drivers to begin braking farther in advance of the intersection to yield the right-of-way. Pedestrians would benefit from installation of up to 23 new signalized midblock crossings throughout the Central SoMa transportation study area. The provision of new crossings would enhance pedestrian circulation and safety, as midblock crossings would substantially reduce the distance pedestrians would need to travel in order to cross the street. The presence of signalized crossings would also enhance safety, as they would reduce the propensity to jaywalk across the multi-lane streets in the Plan Area. Pedestrian crossing times would be similar to those at adjacent intersections, and would be timed to accommodate the expected walking speed of

between 2.4 to 3.1 feet per second.²¹⁵ The proposed street network changes would complement the Vision Zero projects described above.

Within the transportation study area there are a number of seniors and persons with disabilities. With an increase in the number of pedestrians in the area, seniors and persons with disabilities may be further challenged as they travel on crosswalks and sidewalks within the Plan Area. However, the sidewalks and crosswalks within the Plan Area meet the required design standards within the *California Manual of Uniform Traffic Control Devices*²¹⁶ and the *Americans with Disabilities Act Accessibility Guidelines*,²¹⁷ many of the Vision Zero projects described above would also enhance pedestrian conditions for seniors and persons with disabilities, and, as described above, numerous Plan improvements would enhance and facilitate pedestrian travel in Central SoMa.

Overall, implementation of the Plan's street network changes would reduce safety hazards for pedestrians within Central SoMa by providing a combination of improvements aimed at accommodating increases in pedestrian volumes and reducing the potential for collisions. Overall, the impacts of the Plan related to pedestrian safety hazards would be *less than significant*.

Crosswalk, Sidewalk, and Corner Pedestrian LOS Impact Analysis

Table IV.D-12, Pedestrian Crosswalk Level of Service—Weekday Midday Peak Hour—Existing and Existing plus Plan Conditions, and **Table IV.D-13, Pedestrian Crosswalk Level of Service—Weekday PM Peak Hour—Existing and Existing plus Plan Conditions**, present the pedestrian volumes and LOS conditions for the existing plus Plan conditions at the crosswalk locations for the weekday midday and p.m. peak hours, respectively. **Table IV.D-14, Pedestrian Sidewalk Level of Service – Weekday Midday Peak Hour Existing and Existing plus Plan Conditions**, and **Table IV.D-15, Pedestrian Sidewalk Level of Service—Weekday PM Peak Hour Existing and Existing plus Plan Conditions**, present the pedestrian volumes and LOS conditions for the existing plus Plan conditions at the sidewalk locations for the weekday midday and p.m. peak hours, respectively. **Table IV.D-16, Pedestrian Corner Level of Service—Weekday Midday Peak Hour—Existing and Existing plus Plan Conditions**, and **Table IV.D-17, Pedestrian Corner Level of Service—Weekday PM Peak Hour—Existing and Existing plus Plan Conditions**, present the pedestrian volumes and LOS conditions for the existing plus Plan conditions at the corner locations for the weekday midday and p.m. peak hours, respectively. Two scenarios are presented: one for conditions with only the additional pedestrian trips generated by development under the Plan only (i.e., the Land Use Plan Only Alternative), and one for conditions including implementation of the Plan, including development under the Plan as well as the proposed street network changes.

²¹⁵ All new midblock signals would meet SFMTA standards and California Manual on Uniform Traffic Control Devices (MUTCD) requirements. At all existing and new intersections where pedestrian signals are installed, SFMTA provides pedestrian clearance times (i.e., flashing red hand + yellow + all-red) at a pedestrian walking speed of 3.5 feet per second, plus an additional 7 seconds minimum for the walk phase. An additional SFMTA standard is applied to the signal timing splits (green + yellow + all-red), which are timed for a pedestrian walking speed of 2.5 feet per second. The most conservative calculation prevails.

²¹⁶ California Manual of Uniform Traffic Control Devices 2014 Revision 1. Can be reviewed on California Department of Transportation (Caltrans) website: <http://www.dot.ca.gov/trafficops/camutcd/camutcd2014rev1.html>.

²¹⁷ ADA Accessibility Guidelines (ADAAG), <https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/background/adaag>, accessed on August 16, 2016.

TABLE IV.D-12 PEDESTRIAN CROSSWALK LEVEL OF SERVICE—WEEKDAY MIDDAY PEAK HOUR—EXISTING AND EXISTING PLUS PLAN CONDITIONS

Intersection and Crosswalk Locations	Existing			Existing plus Land Use Plan Only Alternative (see Section V.I.F, Alternatives)			Existing plus Plan ^c		
	Pedestrians	sf/ped ^a	LOS ^b	Pedestrians	sf/ped	LOS	Pedestrians	sf/ped	LOS
Third/Mission									
North	971	28	C	1,056	25	C	1,063	42	B
South	1,068	23	D	1,162	21	D	1,169	36	C
East	1,121	30	C	1,219	27	C	1,227	12	E
West	921	42	B	1,002	39	C	1,008	13	E
Third/Howard									
North	653	49	B	710	29	C	715	>60	A
South	716	>60	A	779	36	C	784	>60	A
East	727	42	B	791	24	D	796	>60	A
West	686	49	B	746	28	C	751	16	D
Fourth/Mission									
North	1,171	25	C	1,274	23	D	1,281	42	B
South	1,391	21	D	1,513	19	D	1,522	35	C
East	1,792	27	C	1,949	24	C	1,961	11	E
West	1,645	29	C	1,789	26	C	1,800	10	E
Fourth/Howard									
North	669	>60	A	728	>60	A	732	>60	A
South	580	32	C	631	29	C	635	>60	A
East	1,070	>60	A	1,164	57	B	1,171	>60	A
West	619	24	C	673	22	D	677	26	C
Fourth/Folsom									
North	33	>60	A	42	>60	A	43	>60	A
South	247	53	B	314	42	B	318	>60	A
East	390	38	C	496	29	C	502	34	C
West	296	>60	A	376	>60	A	381	>60	A
Fourth/Harrison									
North	167	>60	A	212	>60	A	215	>60	A
South and Ramp ^d	-	-	-	-	-	-	-	-	-
East	161	>60	A	745	49	B	755	42	B
West	8	>60	A	34	>60	A	35	>60	A
Fourth/Bryant									
North	4	>60	A	27	>60	A	27	>60	A
South	70	>60	A	248	50	B	251	>60	A
East	152	41	B	684	32	C	693	25	C
West	3	>60	A	31	>60	A	31	>60	A
Ramp	2	>60	A	10	>60	A	10	>60	A
Fourth/Brannan									
North	45	>60	A	483	56	B	485	>60	A
South	68	>60	A	563	41	B	566	53	B
East	116	>60	A	1,028	34	C	1,034	40	B
West	112	54	B	672	24	D	676	28	C
Fourth/Townsend									
North	153	>60	A	1,052	38	C	1,058	38	C
South	88	>60	A	630	38	C	634	38	C
East	113	>60	A	1,050	34	C	1,056	34	C
West	166	22	D	1,061	9	E	1,067	9	E
Fourth/King									
North	118	>60	A	652	44	B	656	44	B
South	120	>60	A	974	32	C	980	32	C
East	162	>60	A	1,615	33	C	1,625	33	C
West	246	>60	D	1,669	29	C	1,680	29	C

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

- Square feet per pedestrian. Inputs into this metric include signal cycle length, pedestrian green time, crosswalk square footage, and pedestrian volumes. Changes to any of these inputs across the scenarios (e.g. change in signal cycle from 60 to 90 seconds) lead to changes in the metric value and the resulting LOS.
- Crosswalks operating at LOS E or LOS F highlighted in **bold**. Shaded indicates significant project impact.
- With Plan analysis assumes that crosswalks would be widened to width of adjacent sidewalks and signal control changes would also be implemented. Analysis assumes implementation of Howard/Folsom One-Way Option, although pedestrian conditions under the Howard/Folsom Two-Way Option would be similar.
- At the intersection of Fourth/Harrison Street, pedestrian crossings across the south leg (i.e., crossing Fourth Street) or the I-80 westbound on-ramp are currently not permitted.

TABLE IV.D-13 PEDESTRIAN CROSSWALK LEVEL OF SERVICE — WEEKDAY PM PEAK HOUR — EXISTING AND EXISTING PLUS PLAN CONDITIONS

Intersection and Crosswalk Locations	Existing			Existing plus Land Use Plan Only Alternative (see Section VI.F, Alternatives)			Existing plus Plan ^c		
	Pedestrians	sf/ped ^a	LOS ^b	Pedestrians	sf/ped	LOS	Pedestrians	sf/ped	LOS
Third/Mission									
North	1,044	34	C	1,136	31	C	1,142	40	B
South	655	48	B	713	44	B	717	>60	A
East	1,094	29	C	1,190	27	C	1,197	15	E
West	882	35	C	959	32	C	965	13	E
Third/Howard									
North	472	>60	A	513	41	B	517	>60	A
South	529	>60	A	575	53	B	579	>60	A
East	853	40	C	928	22	D	933	57	B
West	752	54	B	818	31	C	823	17	D
Fourth/Mission									
North	1,124	27	C	1,223	24	C	1,230	45	B
South	1,450	20	D	1,577	18	D	1,587	33	C
East	2,374	19	D	2,582	17	D	2,598	<8	F
West	1,927	24	C	2,096	22	D	2,109<	<8	F
Fourth/Howard									
North	595	>60	A	647	>60	A	651	>60	A
South	437	43	B	475	39	C	478	>60	A
East	1,261	47	B	1,372	42	B	1,380	>60	A
West	603	25	C	656	22	D	660	27	C
Fourth/Folsom									
North	29	>60	A	37	>60	A	37	>60	A
South	246	45	B	313	34	C	317	>60	A
East	644	22	D	819	16	D	829	19	D
West	324	>60	A	412	>60	A	417	>60	A
Fourth/Harrison									
North	221	>60	A	281	>60	A	285	>60	A
South and Ramp ^d	-	-	-	-	-	-	-	-	-
East	947	30	C	1,204	22	D	1,120	21	D
West	21	>60	A	27	>60	A	27	>60	A
Fourth/Bryant									
North	19	>60	A	24	>60	A	24	>60	A
South	206	>60	A	262	>60	A	265	>60	A
East	923	22	D	1,173	17	D	1,189	16	D
West	35	>60	A	44	>60	A	45	>60	A
Ramp	15	>60	A	19	>60	A	19	>60	A
Fourth/Brannan									
North	466	59	B	1,013	26	C	1,019	44	B
South	382	>60	A	830	28	C	835	29	C
East	682	45	B	1,482	19	D	1,491	30	C
West	633	24	C	1,376	10	E	1,384	16	D
Fourth/Townsend									
North	587	>60	A	1,276	48	B	1,284	48	B
South	761	40	B	1,654	16	D	1,664	16	D
East	564	>60	A	1,226	36	C	1,233	35	C
West	1,519	8	E	3,302	< 8	F	3,322	< 8	F
Fourth/King									
North	843	39	C	1,832	16	D	1,844	16	D
South	793	40	B	1,724	17	D	1,734	16	D
East	720	58	B	1,565	25	C	1,575	25	C
West	1,917	29	C	4,167	12	E	4,192	12	E

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

- Square feet per pedestrian. Inputs into this metric include signal cycle length, pedestrian green time, crosswalk square footage, and pedestrian volumes. Changes to any of these inputs across the scenarios (e.g. change in signal cycle from 60 to 90 seconds) lead to changes in the metric value and the resulting LOS.
- Crosswalks operating at LOS E or LOS F highlighted in **bold**. Shaded indicates significant project impact.
- With Plan analysis assumes that crosswalks would be widened to width of adjacent sidewalks and signal control changes would also be implemented. Analysis assumes implementation of Howard/Folsom One-Way Option, although pedestrian conditions under the Howard/Folsom Two-Way Option would be similar.
- At the intersection of Fourth/Harrison Street, pedestrian crossings across the south leg (i.e., crossing Fourth Street) or the I-80 westbound on-ramp are currently not permitted.

TABLE IV.D-14 PEDESTRIAN SIDEWALK LEVEL OF SERVICE – WEEKDAY MIDDAY PEAK HOUR EXISTING AND EXISTING PLUS PLAN CONDITIONS

Intersection and Sidewalk Location	Existing			Existing plus Land Use Plan Only Alternative (see Section VI.E, Alternatives)			Existing plus Plan ^c		
	Pedestrians	ped/ min/ft ^a	LOS ^b	Pedestrians	ped/ min/ft	LOS	Pedestrians	ped/ min/ft	LOS
Fourth Street between Market and Mission^d									
West	1,668	5.1	C	2,120	6.5	D	2,148	2.5	B
East	1,408	2.7	B	1,790	3.5	C	1,813	2.6	B
Fourth Street between Mission and Howard^e									
West	667	1.2	B	848	1.6	B	859	0.9	B
East	2,247	8.2	D	2,856	10.5	D	2,894	2.3	B
Fourth Street between Folsom and Harrison^f									
West	178	<0.5	A	226	0.5	B	229	<0.5	A
East	896	2.2	B	1,139	4.8	C	1,154	1.8	B
Fourth Street between Bryant and Brannan^g									
West	135	<0.5	A	293	0.8	B	295	0.8	B
East	280	0.8	B	609	1.7	B	612	1.7	B
Fourth Street between Brannan and Townsend^g									
West	267	0.7	B	580	1.5	B	584	1.5	B
East	422	1.1	B	917	2.4	B	923	2.5	B

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

- Pedestrians per foot per minute.
- Shaded indicates significant project impact.
- With Plan analysis assumes that sidewalks on one or both sides of the street would be widened by about five feet between Market and Harrison Streets as detailed below. Analysis assumes implementation of Howard/Folsom One-Way Option, although pedestrian conditions under the Howard/Folsom Two-Way Option would be similar.
- On Fourth Street between Market and Mission Streets, with the proposed street network improvements, the west sidewalk would be widened from 10 to 17.5 feet, and the east sidewalk would remain the same as under existing conditions.
- On Fourth Street between Mission and Howard Streets, with the proposed street network improvements, the west sidewalk would be widened from 18 to 20 feet, and the east sidewalk would be widened from 12 to 25 feet.
- On Fourth Street between Folsom and Harrison Streets, with the proposed street network improvements, the west sidewalk would be widened from 12 to 17 feet, and the east sidewalk would be widened from 10 to 15 feet.
- On Fourth Street between Bryant and Brannan Streets, and between Brannan and Townsend Streets, the west and east sidewalks would remain the same as under existing conditions.

TABLE IV.D-15 PEDESTRIAN SIDEWALK LEVEL OF SERVICE — WEEKDAY PM PEAK HOUR EXISTING AND EXISTING PLUS PLAN CONDITIONS

Intersection and Sidewalk Location	Existing			Existing plus Land Use Plan Only Alternative (see Section VI.F, Alternatives)			Existing plus Plan ^c		
	Pedestrians	ped/ min/ft ^a	LOS ^b	Pedestrians	ped/ min/ft	LOS	Pedestrians	ped/ min/ft	LOS
Fourth Street between Market and Mission^d									
West	1,847	5.6	C	2348	6.5	D	2379	2.8	B
East	2,049	4.0	C	2605	3.5	C	2639	3.7	C
Fourth Street between Mission and Howard^e									
West	749	1.4	B	952	1.7	B	965	1.0	B
East	1,926	7.1	D	2448	10.5	D	2481	2.0	B
Fourth Street between Folsom and Harrison^f									
West	158	<0.5	A	201	0.5	B	203	<0.5	A
East	1,080	2.4	B	2,347	4.8	C	1,391	1.9	B
Fourth Street between Bryant and Brannan^g									
West	358	0.9	B	778	0.8	B	783	2.0	B
East	748	1.9	B	1,626	1.7	C	1,636	4.2	C
Fourth Street between Brannan and Townsend^g									
West	943	2.4	B	2,050	1.5	C	2,062	5.2	C
East	539	1.6	B	1,172	2.4	C	1,179	3.4	C

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

- Pedestrians per foot per minute.
- Shaded** indicates significant project impact.
- With Plan analysis assumes that sidewalks on one or both sides of the street would be widened by about five feet between Market and Harrison Streets as detailed below. Analysis assumes implementation of Howard/Folsom One-Way Option, although pedestrian conditions under the Howard/Folsom Two-Way Option would be similar.
- On Fourth Street between Market and Mission Streets, with the proposed street network improvements, the west sidewalk would be widened from 10 to 17.5 feet, and the east sidewalk would remain the same as under existing conditions.
- On Fourth Street between Mission and Howard Streets, with the proposed street network improvements, the west sidewalk would be widened from 18 to 20 feet, and the east sidewalk would be widened from 12 to 25 feet.
- On Fourth Street between Folsom and Harrison Streets, with the proposed street network improvements, the west sidewalk would be widened from 12 to 17 feet, and the east sidewalk would be widened from 10 to 15 feet.
- On Fourth Street between Bryant and Brannan Streets, and between Brannan and Townsend Streets, the west and east sidewalks would remain the same as under existing conditions.

TABLE IV.D-16 PEDESTRIAN CORNER LEVEL OF SERVICE — WEEKDAY MIDDAY PEAK HOUR — EXISTING AND EXISTING PLUS PLAN CONDITIONS

Intersection and Corner Locations	Existing			Existing plus Land Use Plan Only Alternative (see Section VI.F, Alternatives)			Existing plus Plan ^c		
	Pedestrians	sf/ped ^a	LOS ^b	Pedestrians	sf/ped	LOS	Pedestrians	sf/ped	LOS
Third/Mission									
Northwest	2,081	7	C	2,264	6	C	2,277	>13	A
Northeast	2,301	11	B	2,503	10	B	2,518	>13	A
Southwest	2,188	7	C	2,380	6	D	2,394	>13	A
Southeast	2,408	5	D	2,619	4	D	2,635	>13	A
Third/Howard									
Northwest	1,473	>13	A	1,602	>13	A	1,612	>13	A
Northeast	1,518	>13	A	1,651	>13	A	1,661	>13	A
Southwest	1,542	>13	A	1,678	>13	A	1,688	>13	A
Southeast	1,587	10	B	1,727	9	C	1,737	>13	A
Fourth/Mission									
Northwest	3,098	>13	A	3,370	>13	A	3,390	>13	A
Northeast	3,259	>13	A	3,546	>13	A	3,547	>13	A
Southwest	3,340	>13	A	3,633	>13	A	3,655	>13	A
Southeast	3,501	10	C	3,809	8	C	3,831	>13	A
Fourth/Howard									
Northwest	1,417	>13	A	1,541	>13	A	1,550	>13	A
Northeast	1,913	>13	A	2,081	>13	A	2,093	>13	A
Southwest	1,319	>13	A	1,435	>13	A	1,443	>13	A
Southeast	1,815	>13	A	1,974	13	B	1,986	>13	A
Fourth/Folsom									
Northwest	362	>13	A	460	>13	A	466	>13	A
Northeast	465	>13	A	591	>13	A	599	>13	A
Southwest	597	>13	A	759	>13	A	769	>13	A
Southeast	701	>13	A	891	>13	A	902	>13	A
Fourth/Harrison									
Northwest	213	>13	A	271	>13	A	275	>13	A
Northeast	828	>13	A	1,053	>13	A	1,067	>13	A
Southwest	30	>13	A	38	>13	A	38	>13	A
Southeast	645	>13	A	819	>13	A	830	>13	A
Fourth/Bryant									
Northwest	50	>13	A	63	>13	A	64	>13	A
Northeast	615	>13	A	782	>13	A	792	>13	A
Southwest	241	>13	A	306	>13	A	310	>13	A
Southeast	806	>13	A	1,025	>13	A	1,038	>13	A
Fourth/Brannan									
Northwest	584	>13	A	1,270	>13	A	1,277	>13	A
Northeast	765	>13	A	1,662	8	B	1,672	>13	A
Southwest	625	>13	A	1,358	> 13	A	1,366	>13	A
Southeast	805	>13	A	1,750	> 13	A	1,761	>13	A
Fourth/Townsend									
Northwest	1,069	>13	A	2,324	>13	A	2,338	>13	A
Northeast	1,064	>13	A	2,312	>13	A	2,326	>13	A
Southwest	856	>13	A	1,860	>13	A	1,872	>13	A
Southeast	850	>13	A	1,848	>13	A	1,860	>13	A
Fourth/King									
Northwest	1,175	>13	A	2,552	>13	A	2,564	>13	A
Northeast	1,147	>13	A	2,494	>13	A	2,509	>13	A
Southwest	1,338	>13	A	2,907	>13	A	2,925	>13	A
Southeast	1,310	>13	A	2,848	>13	A	2,865	>13	A

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

- Square feet per pedestrian.
- Shaded indicates significant project impact.
- With Plan analysis assumes that sidewalks would be widened to width of adjacent sidewalks, and travel lane and signal control changes would be implemented.

TABLE IV.D-17 PEDESTRIAN CORNER LEVEL OF SERVICE — WEEKDAY PM PEAK HOUR — EXISTING AND EXISTING PLUS PLAN CONDITIONS

Intersection and Corner Locations	Existing			Existing plus Land Use Plan Only Alternative (see Section V.I.F, Alternatives)			Existing plus Plan ^c		
	Pedestrians	sf/ped ^a	LOS ^b	Pedestrians	sf/ped	LOS	Pedestrians	sf/ped	LOS
Third/Mission									
Northwest	2,119	8	C	3,651	7	C	3,673	>13	A
Northeast	2,352	12	B	4,186	11	B	4,211	>13	A
Southwest	1,691	9	C	4,041	8	C	4,065	>13	A
Southeast	1,924	7	C	4,576	6	D	4,603	>13	A
Third/Howard									
Northwest	1,346	>13	A	1,434	>13	A	1,442	>13	A
Northeast	1,458	>13	A	2,221	>13	A	2,234	>13	A
Southwest	1,409	>13	A	1,244	>13	A	1,252	>13	A
Southeast	1,520	9	C	2,032	8	C	2,044	>13	A
Fourth/Mission									
Northwest	3,356	>13	A	3,651	>13	A	3,673	>13	A
Northeast	3,848	>13	A	4,186	>13	A	4,211	>13	A
Southwest	3,715	>13	A	4,041	>13	A	4,065	>13	A
Southeast	4,206	5	D	4,576	4	D	4,603	>13	A
Fourth/Howard									
Northwest	1,318	>13	A	1,434	>13	A	1,442	>13	A
Northeast	2,042	>13	A	2,221	>13	A	2,234	>13	A
Southwest	1,144	>13	A	1,244	>13	A	1,252	>13	A
Southeast	1,868	9	C	2,032	7	C	2,044	>13	A
Fourth/Folsom									
Northwest	388	>13	A	494	>13	A	500	>13	A
Northeast	740	>13	A	941	>13	A	953	>13	A
Southwest	627	>13	A	797	>13	A	808	>13	A
Southeast	979	>13	A	1,245	>13	A	1,261	>13	A
Fourth/Harrison									
Northwest	266	>13	A	338	>13	A	343	>13	A
Northeast	1,285	>13	A	1,633	>13	A	1,655	>13	A
Southwest	23	>13	A	29	>13	A	30	>13	A
Southeast	1,042	>13	A	1,324	11	B	1,342	>13	A
Fourth/Bryant									
Northwest	59	>13	A	76	>13	A	77	>13	A
Northeast	1,036	>13	A	1,317	>13	A	1,335	>13	A
Southwest	265	>13	A	337	>13	A	341	>13	A
Southeast	1,242	>13	A	1,579	8	C	1,599	>13	A
Fourth/Brannan									
Northwest	1,209	>13	A	2,628	>13	A	2,644	>13	A
Northeast	1,263	>13	A	2,745	10	B	2,762	>13	A
Southwest	1,117	>13	A	2,427	10	C	2,442	>13	A
Southeast	1,170	>13	A	2,544	12	B	2,560	>13	A
Fourth/Townsend									
Northwest	2,317	>13	A	5,035	6	C	5,066	6	C
Northeast	1,266	>13	A	2,752	>13	A	2,769	>13	A
Southwest	2,508	>13	A	5,451	>13	A	5,485	>13	A
Southeast	1,458	>13	A	3,168	>13	A	3,187	>13	A
Fourth/King									
Northwest	3,036	>13	A	6,599	>13	A	6,639	>13	A
Northeast	1,719	>13	A	3,737	>13	A	3,760	>13	A
Southwest	2,981	>13	A	6,480	8	C	6,519	8	C
Southeast	1,664	>13	A	3,618	11	B	3,640	11	B

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

- Square feet per pedestrian.
- Shaded indicates significant project impact.
- With Plan analysis assumes that sidewalks would be widened to width of adjacent sidewalks, and travel lane and signal control changes would be implemented.

The Plan includes upgrading sidewalks to meet the standards in the *Better Streets Plan* where possible, including providing corner sidewalk extensions to enhance pedestrian safety at crosswalks and adding street trees and furnishing wherever possible. The analysis of the street network changes incorporates the sidewalk widening, corner sidewalk extensions, and crosswalk upgrade improvements proposed as part of the Plan, and assumes the signal timing changes associated with the travel lane/circulation changes. Analysis of the street network improvements assumes implementation of the Howard/Folsom One-Way Option. Pedestrian conditions under the Howard/Folsom Two-Way Option would be similar to the Howard/Folsom One-Way Option, as the total roadway right-of-way for pedestrians to cross on both Howard and Folsom Streets would be the same for both options, and pedestrian crossing times would be the same or similar for both options. With implementation of the pedestrian crosswalk and sidewalk improvements, pedestrian conditions would generally improve over existing conditions, reflecting the additional right-of-way dedicated to pedestrians, and exposure to existing pedestrian hazards would be reduced. On some streets where sidewalk widening is proposed, recessed commercial and/or passenger loading bays would be installed to accommodate loading demand, and therefore, at these locations, sidewalk widths would remain similar to existing conditions, resulting in slightly more constrained conditions for pedestrians at the recessed loading bays.

With implementation of the Plan, the sidewalks and corner locations would not be adversely affected, although a number of crosswalk locations would operate at LOS E or LOS F during the midday and/or the p.m. peak hours. Implementation of the street network changes, in combination with the additional pedestrians generated by development under the Plan, would result in *significant* pedestrian LOS impacts at the west and east crosswalks at the intersections of Third/Mission and Fourth/Mission, and at the west crosswalks at the intersections of Fourth/Townsend and Fourth/King during the midday and/or p.m. peak hours. The impacts to crosswalk operations at the Third/Mission and Fourth/Mission intersections are related to the signal timing changes (i.e., increasing the signal cycle length from 60 to 90 seconds) associated with the travel lane/circulation changes.

Implementation of **Mitigation Measure M-TR-4, Upgrade Central SoMa Area Crosswalks** (described below), which would widen crosswalks to up to 40 feet, would improve the crosswalk LOS operating conditions at these locations to LOS D or better, and reduce pedestrian crosswalk impacts at the intersections of Third/Mission, Fourth/Mission, and Fourth/Townsend to less than significant. A crosswalk width greater than 40 feet would be required to mitigate the impact at the west crosswalk at the intersection of Fourth/King and this widening would not be feasible. Implementation of this mitigation measure may require elimination of up to two on-street parking or commercial loading spaces per crosswalk, and/or may require adjustments to the length of adjacent bus stops, although such measures would not result in any significant secondary transportation-related impacts. However, because the feasibility of the crosswalk widening beyond the current width is uncertain due to roadway or other physical constraints (e.g., presence of bus stops or platforms), the pedestrian impact at the crosswalks due to implementation of the Plan with either the Howard/Folsom One-Way Option or the Howard/Folsom Two-Way Option would remain *significant and unavoidable with mitigation*.

Mitigation Measures

Mitigation Measure M-TR-4: Upgrade Central SoMa Area Crosswalks. Consistent with the proposed provisions of the Plan to establish a minimum width of crosswalks of 15 feet, and up to 40 feet where

future pedestrian volumes warrant, as feasible, the SFMTA shall widen and restripe the crosswalks to the continental design, consistent with the *Better Streets Plan*.²¹⁸

With either the Howard/Folsom One-Way Option or Howard/Folsom Two-Way Option street network changes, the SFMTA shall monitor crosswalk operations for deteriorated conditions (i.e., crosswalk operating conditions of LOS E or LOS F, or observations of substantial crosswalk overcrowding), and, as feasible, widen the following crosswalks:

- At the intersection of Third/Mission, widen the east and west crosswalks to 20 feet.
- At the intersection of Fourth/Mission, widen the east crosswalk to 40 feet, and widen the west crosswalk to 35 feet.
- At the intersection of Fourth/Townsend, widen the west crosswalk to 30 feet.

Significance after Mitigation: Even with this mitigation measure, this impact would remain *significant and unavoidable with mitigation*.

Bicycle Impacts

Impact TR-5: Development under the Plan, including the proposed open space improvements and street network changes, would not result in potentially hazardous conditions for bicyclists, or otherwise substantially interfere with bicycle accessibility. (Less than Significant)

Development associated with the Plan would generate about 3,930 other trips (including bicycle trips) during the a.m. peak hour and 6,120 other trips during the p.m. peak hour, a portion of which would be bicycle trips.²¹⁹ These new bicycle trips would utilize the existing and planned system of bicycle routes and bicycle lanes. Bicycle lanes are currently provided on Howard, Folsom, and Townsend Streets for east/west travel, and on Seventh, Eighth, and 11th Streets for north/south travel within and through Central SoMa. Proposed bicycle improvements included in the Plan would generally enhance cycling conditions in the transportation study area, including new cycle tracks on Folsom, Third, and Fourth Streets, and a cycle track or bicycle lane on Howard Street depending on whether the Howard/Folsom One-Way Option or Howard/Folsom Two-Way Option is selected. Provision of cycle tracks, reduction in the number of mixed-flow travel lanes, and removal of on-street parking along many of these streets would reduce the potential for injury to bicyclists as a result of “dooring”²²⁰, as the lanes would provide dedicated space for bicyclists and reduce the incidence of a blocked bicycle lane due to double-parking and loading vehicles. With implementation of the cycle tracks, on-street parking would be located between the cycle track and travel lane, and drivers would not cross over into the bicycle lane to park. However, with the cycle track, drivers would need to watch carefully for bicyclists when they are turning at cross-streets or driveways. Parking restrictions near driveways would be enforced to maintain clear sight lines, and these would be incorporated into the detailed design of the street network changes.

²¹⁸ Crosswalks with a continental design have parallel markings that are the most visible to drivers. Use of continental design for crosswalk marking also improves crosswalk detection for people with low vision and cognitive impairments. Available at http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/sidewalk2/sidewalks208.cfm, accessed October 2, 2014.

²¹⁹ Other includes walk, bicycle, motorcycle, and other modes such as taxi/TNC vehicles (e.g., Uber, Lyft, etc.) and limousines.

²²⁰ Dooring refers to a vehicle driver or passenger opening a door into the path of an oncoming bicyclist, causing a collision.

The cycle tracks would be designed consistent with NACTO and FHWA standards.^{221,222} For example:

- A combination of nationally approved signage and pavement markings would be installed and maintained. The cycle tracks would be clearly marked with painted lines, symbols, and vertical barriers such as delineator posts.
- When parking is provided adjacent to the cycle track, parking would be prohibited near the intersections to improve visibility. The desirable no-parking area is about 30 feet from each side of the crossing.
- For vehicles attempting to cross the cycle track from the side-streets or driveway, street and street furnishings, and/or other features would accommodate a sight triangle of 20 feet to the cycle track from minor street crossings, and 10 feet from driveway crossings.
- Color, yield lines, and “Yield to Bikes” signage would be used to identify conflict areas and clarify that the cycle track has priority over entering or exiting traffic.
- Signs on side streets or driveways would alert drivers to expect two-way bicycle traffic, especially on one-way streets.

Implementation of the cycle tracks would also enhance safety for bicyclists and pedestrians. In New York City, total injuries decreased by 20 percent (including pedestrians, bicyclists and drivers) following implementation of protected bicycle lanes on three corridors in Manhattan.²²³ Therefore, implementation of the cycle tracks would be expected to reduce the average risk of serious injuries while bicyclist volumes increase.

Installation of up to 23 new signalized midblock pedestrian crossings as part of the Plan would not substantially affect the existing and proposed bicycle facilities on Howard, Folsom, Brannan, Third, and Fourth Streets. The midblock crossings would be coordinated with the signal timing of upstream and/or downstream intersections to minimize any new delay and/or corresponding queuing as a result of the new traffic signal, and therefore, bicyclists would be anticipated to experience minimal increases in travel times. The addition of one or more midblock crossing along a bicycle route would not substantially affect overall bicycle travel times for the affected routes. Thus, the impact of up to 23 new midblock pedestrian crossings on bicyclists would be *less than significant*.

As discussed above, development under the Plan would generate new bicycle trips that would utilize the existing bicycle lanes on Howard, Folsom, and Townsend Streets for east/west travel, and on Seventh, Eighth, and 11th Streets for north/south travel within and through Central SoMa, and the Plan would enhance existing facilities and provide for new protected facilities on Third, Fourth, and Brannan Streets. Increased congestion associated with Plan-related population growth could increase the potential for vehicular-bicycle and pedestrian-bicycle conflicts by exposing additional people to existing transportation conflicts and hazards. This additional exposure of new transportation system users to existing hazards would not be considered

²²¹ National Association of City Transportation Officials, *Urban Bikeway Design Guide*, Second Edition, 2014. Available at <http://nacto.org/publication/urban-bikeway-design-guide/cycle-tracks>, accessed January 4, 2016.

²²² U.S. Department of Transportation Federal Highway Administration, *Separated Bike Lane Planning and Design Guide*, 2015. Available at https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/separated_bikelane_pdg/page00.cfm, accessed January 4, 2016.

²²³ New York City Department of Transportation, *Protected Bicycle Lanes in NYC*, September 2014. Available at <http://www.nyc.gov/html/dot/downloads/pdf/2014-09-03-bicycle-path-data-analysis.pdf>, accessed December 30, 2015.

creation of a new hazard, and would not adversely affect bicycle facilities in the area. By physically separating bicyclists from vehicle traffic, the proposed cycle tracks would offer a higher level of security than bicycle lanes. Thus, for the reasons described above, the impacts of the Plan's street network changes on bicycle facilities and circulation would be *less than significant*.

While the Plan's impacts on bicycle facilities and circulation would be less than significant, **Improvement Measure I-TR-5a: Cycle Track Public Education Campaign**, and **Improvement Measure I-TR-5b: Cycle Track Post-Implementation Surveys**, may be recommended for consideration by City decision makers to further reduce the less-than-significant impacts related to potential conflicts between bicyclists and pedestrians, transit, trucks, and autos.

Improvement Measure I-TR-5a: Cycle Track Public Education Campaign. To further reduce potential conflicts between bicyclists and pedestrians, transit and other vehicles, the SFMTA could develop and implement a cycle track public education campaign to develop safety awareness by providing information to the public through outreach channels such as media campaigns, brochures, and websites. This campaign would be in addition to the existing SFMTA bicycle safety outreach, specifically geared to Central SoMa and cycle tracks. Elements of the education campaign could include:

- Clarifying rules of the road for cycle tracks.
- Improving pedestrian awareness about where to wait and how to cross the cycle track (i.e., on the sidewalk or buffer zone, rather than in the cycle track or adjacent to parked vehicles).
- Providing bicycle-safety education for neighborhood schools (e.g., the Bessie Carmichael School), and neighborhood groups within Central SoMa.
- Ensuring that the San Francisco Police Department officers are initially and repeatedly educated on traffic law as it applies to bicyclists and motorists.
- Providing safety compliance education for bicyclists coupled with increased enforcement for violations by bicyclists.

The public education campaign could include a website, as well as instruction videos with information for cyclists, motorists, and pedestrians. To the extent possible, the public education campaign could be coordinated with the San Francisco Bicycle Coalition efforts.

Improvement Measure I-TR-5b: Cycle Track Post-Implementation Surveys. Following implementation of the cycle tracks on Howard, Folsom, Brannan, Third and Fourth Streets, the SFMTA could conduct motorist, pedestrian, bicycle, and business surveys to understand how the cycle tracks are performing, and to make adjustments to the design and supplemental public education campaign. In addition to the user surveys, the post-implementation assessment could include before/after photos, bicyclist ridership and traffic volume counts, video analysis of behavior of bicyclists, pedestrians, and drivers, assessment of vehicle queuing, and compliance with new signs/signals. The information would be used as input for subsequent design and implementation of cycle tracks on other streets in San Francisco, as well as documenting the effectiveness of the cycle track.

Implementation of these improvement measures could include development and refinement of a public education campaign by the SFMTA focused on the proposed Central SoMa cycle tracks. The public education program would increase safety awareness for bicyclists, pedestrians, transit, and other vehicles, thereby reducing the potential for conflicts between the various modes. Implementation of these improvement measures would provide information that would inform the design of future cycle tracks and further reduce

the *less-than-significant* impacts related to potential conflicts between bicyclists and pedestrians, transit, trucks, and autos, and would not result in secondary transportation-related impacts.

Mitigation: None required.

Loading Impacts

Impact TR-6: Development under the Plan, including the proposed open space improvements and street network changes, would result in a reduction in on-street commercial loading supply such that the loading demand during the peak hour of loading activities would not be accommodated within on-street loading supply, would impact existing passenger loading/unloading zones, and may create hazardous conditions or significant delay that may affect transit, other vehicles, bicycles, or pedestrians. (Significant and Unavoidable with Mitigation)

Commercial Vehicle Loading/Unloading Activities. Projected development within the Plan Area would generate about 1,754 delivery and service vehicle trips per day, which would result in a demand for 102 loading spaces during the peak hour of loading activities. Section 152.1 of the *Planning Code* outlines the requirements regarding the provision of off-street freight loading and service vehicle spaces. Generally, off-street loading spaces are required for developments that provide more than 100,000 square feet of residential uses, more than 100,000 square feet of office uses, and more than 10,000 square feet of retail uses, and it is anticipated that the majority of the new loading demand would be accommodated on-site within these facilities. A project-specific analysis of the proposed loading facilities for each subsequent development project in the Plan Area would be conducted as each project is proposed and evaluated for *Planning Code* compliance and loading impacts. However, because Sections 153(a)(6), 154(b)(2), and 161(i) of the *Planning Code* include provisions for providing fewer loading spaces than typically required or undersized loading spaces, it is possible that fewer loading spaces than required, or no loading spaces, would be provided as part of new development. To the extent that loading demand is not accommodated on-site, and could not be accommodated within existing or new on-street commercial loading spaces, double-parking, illegal use of sidewalks and other public space is likely to occur. Such activities could affect traffic and transit operations as well as bike and pedestrian circulation. Double parking could adversely affect local vehicular, transit, and bicycle circulation, particularly on streets with transit-only and bicycle lanes (e.g., Third, Mission, Howard, and Folsom Streets).

Implementation of the street network changes associated with the Plan would remove on-street commercial loading spaces on a number of streets either permanently or during peak periods, as follows:

- **Howard/Folsom One-Way Option**—On Howard Street, between Third and 11th Streets, on-street parking and commercial loading spaces would be permitted along the north curb during off-peak periods, and a tow-away regulation would be in effect during peak periods. Parallel parking would be permitted adjacent to the cycle track, except where turn pockets would be provided at the approaches to certain intersections. During peak periods, about 100 standard parking spaces and 20 commercial loading spaces along the north curb would be affected. Along the north curb two residential passenger loading/unloading zones between Sixth and Eighth Streets, and the Moscone West and Intercontinental Hotel passenger/taxi loading/unloading zones would be subject to the peak period tow-away regulations. The driveway access into the Intercontinental Hotel porte-cochere/passenger loading/unloading would not be affected.

On Folsom Street, between Second and 11th Streets, on-street parking and commercial loading spaces would be permitted along the south curb during off-peak periods, and a tow-away regulation would be in effect during peak periods. Parallel parking would be permitted adjacent to the cycle track, except where turn pockets would be provided at the approaches to certain intersections. During peak periods, about 160 standard parking spaces and 15 commercial loading spaces along the south curb would be affected. East of Second Street on-street parking would be maintained on both sides of the street. Along the south curb two residential passenger loading/unloading zones between Fifth and Third Streets would be subject to the peak period tow-away regulations.

- **Howard/Folsom Two-Way Option**—On Howard Street, between Third and 11th Streets, on-street parking and commercial loading spaces would be permitted along the north and south curbs during off-peak periods, and a tow-away regulation would be in effect during peak periods. During peak periods, about 240 standard parking spaces and 45 commercial loading spaces would be affected.

On Folsom Street, between Second and Fourth Streets, on-street parking and commercial loading spaces would be permitted along the south curb adjacent to the eastbound cycle track, and prohibited along the north curb. Between Fourth and 11th Streets, on-street parking and commercial loading spaces would be permitted on one side of the street at all times. Where on-street commercial loading spaces are provided, they would be loading bays recessed within the sidewalk.

- **Harrison Street**—On Harrison Street, between Second and Sixth Streets, on-street parking and commercial loading spaces would be permitted during off-peak periods, and a tow-away regulation would be in effect during peak periods on both sides of the street. West of Sixth Street the existing curb regulations would not be affected. During peak periods, about 190 standard parking spaces and 15 commercial loading spaces would be affected. As needed, recessed commercial loading bays could be installed within the sidewalks to provide permanent commercial loading spaces. Along the north and south curbs of Harrison Street between Second and Sixth Streets, three passenger loading/unloading zones (office, residential, Filipino Education Center) would be subject to the peak period tow-away regulations.
- **Bryant Street**—On Bryant Street, between Second and Sixth Streets, on-street parking and commercial loading spaces would be permitted during off-peak periods, and a tow-away regulation would be in effect during peak periods. During peak periods, about 155 standard parking spaces and 20 commercial loading spaces would be affected. On this section of Bryant Street there is only one passenger loading/unloading zone that would be subject to the peak period tow-away regulations.
- **Brannan Street**—On Brannan Street, between Second and Sixth Streets, on-street parking would be permitted on one side of the street in midblock locations, and commercial loading spaces could be relocated to these midblock locations, as necessary. There are currently about 200 vehicle parking spaces and 30 commercial loading spaces on Brannan Street between Second and Sixth Streets, of which approximately 50 to 70 percent would be removed.
- **Third Street**—On Third Street, between King and Market Streets, all on-street parking would be removed, but some recessed commercial loading bays could be installed within the sidewalks. About 140 standard parking spaces and 30 commercial loading spaces would be eliminated. On Third Street between Howard and Market Streets there are three hotel passenger loading/unloading zones (one for the W Hotel, and two for the Westin Hotel), and one passenger loading/unloading zone serving restaurant uses. The driveway access into the Westin Hotel porte-cochere/garage would not be affected.

- **Fourth Street**—On Fourth Street, between Market and Harrison Streets, all on-street parking would be removed, but some recessed commercial loading bays could be installed within the sidewalks. Up to 55 standard parking spaces and 3 commercial loading spaces would be eliminated. On Fourth Street between Market and Mission Streets, there are four existing passenger loading/unloading and taxi stand/bus zones (two adjacent to the Marriot Hotel on the east side of the street, and one each adjacent to the Hotel Zelos and the Mosser Hotel on the west side of the street). On Fourth Street between Mission and Howard Streets, there is an existing passenger loading/unloading zone serving Moscone West. With the proposed street network changes, a passenger loading/unloading zone would be provided at the curb on the west side of Third Street to accommodate the Hotel Zelos and Mosser Hotel passenger loading/unloading demand. The passenger loading/unloading zone would be located between the curb and the transit-only lane, and vehicles would need to merge across the transit-only lane to access the zone. In addition, with the proposed street network changes, a taxi stand would be provided on the east side of the street adjacent to the cycle track. These zones would be provided for all of the Fourth Street suboptions. The existing driveway access into the Marriott Hotel porte-cochere and off-street loading would not be affected.

With the proposed street network changes, on-street parking would be permitted on at least one side of the street, permanently or only during off-peak periods on Howard, Folsom, Bryant, and Brannan Streets. On Third and Fourth Streets, all on-street parking would be eliminated on the street segments affected by the proposed street network changes. Overall, implementation of the Plan's street network changes would result in the permanent removal of about 60 on-street commercial loading spaces, and access to about 70 on-street commercial loading spaces would be restricted during peak periods, for a total of 130 commercial loading spaces within the transportation study area. A small portion of the permanent and peak period reduction in commercial loading spaces would be offset by new commercial loading spaces that could be installed within recessed commercial loading bays within the sidewalks (the recessed bays would typically accommodate two to three commercial vehicles). In addition, some commercial loading spaces could be relocated to the other side of the street where on-street parking would be maintained, although these spaces may not be in proximity to the businesses that utilize them. The permanent and peak period removal of the 130 on-street commercial loading spaces would require existing delivery and service vehicles using these spaces to seek alternative locations (such as on the adjacent cross-streets), particularly during the morning peak period when commercial deliveries are greatest. It would also result in fewer on-street loading spaces being available for future development. The failure to provide an adequate supply of off-street commercial loading spaces for individual projects and the removal of commercial loading spaces currently used by existing buildings in the area, as described above, would exacerbate the impacts of elimination or reduction of on-street commercial loading spaces as part of the Plan's street network changes. Given the above, it is conservatively determined that implementation of the Plan would result in *significant* impacts with respect to commercial loading within the Plan Area.

Implementation of **Mitigation Measure M-TR-6b, Accommodation of On-Street Commercial Loading Spaces and Passenger Loading/Unloading Zones** (described below), would require SFMTA to prepare detailed designs of the street network changes, taking into consideration the on-street loading supply needs for new development as well as driveway access to loading facilities within existing and future buildings along the affected segments. This SFMTA review would inform decisions regarding the number of on-street commercial loading spaces that would be eliminated by the Plan's street network changes, as well as decisions regarding whether to add loading spaces. This measure would thus reduce the potential for disruption of

traffic and transit circulation in the Plan Area as a result of commercial loading activities. While in many situations providing on-street loading spaces elsewhere on the block or around the corner would not present challenges, replacement may not always be possible due to conditions such as existing parking prohibitions or availability of general on-street spaces that could be converted to commercial loading spaces, or pedestrian circulation area on adjacent sidewalks. Thus, the feasibility of providing replacement commercial loading spaces of similar length on the same block and side of the street or within 250 feet on adjacent side streets cannot be assured in every situation where loading spaces are removed as a result of the street network changes. Locations adjacent to transit-only lanes would also not be ideal for loading spaces because they may introduce new conflicts between trucks and transit vehicles. Given these considerations, the potential locations for replacing all on-street commercial loading spaces on streets where circulation changes are proposed (i.e., Folsom, Howard, Harrison, Bryant, Brannan, Third and Fourth Streets) are limited, and it is unlikely that a sufficient amount of spaces could be provided to offset the net loss in supply and ensure that conflicts between trucks, bicyclists, and other vehicles do not occur. Therefore, even with implementation of **Mitigation Measures M-TR-6a: Driveway and Loading Operations Plan**, and **M-TR-6b: Accommodation of On-Street Commercial Loading Spaces and Passenger Loading/Unloading Zones**, the impact of development under the Plan and the proposed street network changes related to commercial loading would remain *significant and unavoidable with mitigation*.

Passenger Loading/Unloading Activities. Passenger loading/unloading zones (i.e., white zones) provide a place to load and unload passengers for adjacent businesses and residences, and are intended for quick passenger drop-off and pick-up, and are typically provided for establishments that have active passenger loading and unloading needs.²²⁴ These zones require a permit be issued by SFMTA and renewed annually, and existing and new uses would be able to request a passenger loading/unloading zone adjacent to their property at any time. Requests for passenger loading/unloading zones as part of development under the Plan would be considered by the SFMTA within the constraints of the existing on-street curb regulations. Most streets within Central SoMa permit on-street parking, and as the area develops, the on-street parking spaces could be converted to passenger loading/unloading zones. If the SFMTA does not grant a permit for a passenger loading/unloading zone for a particular development project under the Plan, the lack of a passenger loading/unloading zone may be an inconvenience, but would not create potentially hazardous conditions or cause significant delays to transit, pedestrians, or bicyclists.

However, there are a number of passenger loading/unloading zones that would be affected by the Plan's proposed street network changes:

- Along Howard, Folsom, Harrison, and Bryant Streets, passenger loading/unloading zones would be subject to peak period restrictions, similar to other locations throughout San Francisco, and the operation of the uses served would not be substantially affected. However, alternate arrangements would need to be developed for passenger loading/unloading for the Bessie Carmichael School/Filipino Education Center that currently occurs on the north side of Harrison Street between

²²⁴ Typical establishments that may qualify for a white zone are hospitals, senior centers, medical offices with five or more practitioners, restaurants with 100 or more seats or valet parking, hotels, apartment or condominium buildings with more than 50 units, theaters, churches or other large places of worship or assembly, schools and government buildings. Other establishments are reviewed on a case-by-case basis. Among other reasons, white zone requests may be denied if private off-street parking is available, seating or unit requirements are not met, or if there are adjacent passenger loading/unloading zones nearby.

Fourth and Fifth Streets (the existing passenger loading/unloading zone is about 135 feet in length, and is in effect between 7:00 a.m. and 6:00 p.m. on school days). As indicated above, recessed commercial loading bays would be installed on the north curb of Harrison Street, and these bays could be used as passenger loading/unloading for the Bessie Carmichael School/Filipino Education Center.

- On Brannan Street there is one passenger loading/unloading zone serving a restaurant that could be affected, depending on final design, as on-street parking would be permitted on one side of the street at midblock locations.
- On Third Street, the removal of on-street parking would remove three passenger loading/unloading zones for the W Hotel and the Westin Hotel. As noted above, the driveway access into the Westin Hotel porte-cochere, which provides for passenger loading/unloading activities, would not be affected. The W Hotel has a vehicular driveway through the site (i.e., between Howard and Natoma Streets), and an on-street taxi zone and a passenger loading/unloading zone on Howard Street east of Third Street, and therefore passenger loading/unloading for the W Hotel would not be substantially affected by the removal of the curbside passenger loading/unloading zone on Third Street.
- On Fourth Street, the removal of on-street parking would remove five passenger loading/unloading zones: four serving hotels (the Marriot Hotel, the Hotel Zelos, and the Mosser Hotel) and one serving Moscone West. Passenger and taxi loading/unloading would be accommodated within alternate zones located on the west curb (for the Hotel Zelos and the Mosser Hotel) and adjacent to the cycle track on the east side of the street for the Marriott Hotel. The driveway access into the Marriott Hotel porte-cochere (on both Fourth and Howard Streets) would not be affected by the street network changes.

In addition to the changes in on-street passenger loading/unloading zones on streets affected by the proposed street network changes, the Howard/Folsom Two-Way Option would include restriping of the southbound approach of Second Street at the intersection of Second/Folsom to provide a southbound right turn pocket from Second Street onto westbound Folsom Street. The reconfigured intersection approach, in combination with the planned cycle tracks on Second Street, would require the removal of the existing passenger loading/unloading zone on Second Street adjacent to the Marriott Hotel. However, hotel-related passenger loading/unloading activities would continue to be accommodated within the building's porte-cochere.

Similar to commercial loading spaces, the design of the Plan's street network changes would consider the potential relocation of passenger loading/unloading zones, particularly those serving the Moscone Center, hotels on Third and Fourth Streets, and the Bessie Carmichael School/Filipino Education Center on Harrison Street between Fourth and Fifth Streets. Implementation of **Mitigation Measure M-TR-6b, Accommodation of On-Street Commercial Loading Spaces and Passenger Loading/Unloading Zones**, would help accommodate existing and future passenger loading/unloading needs. While in many situations providing passenger loading/unloading zones elsewhere on the block or around the corner would not present challenges, replacement may not always be possible due to conditions such as existing parking prohibitions or lack of general on-street spaces that could be converted to passenger loading spaces. Because the feasibility of providing replacement passenger loading/unloading zones of similar length that would serve the affected properties, particularly the Moscone Center, hotels, and the Bessie Carmichael School/Filipino Education Center, cannot be assured, the impact of development under the Plan and the proposed street network changes on passenger loading/unloading operations would be *significant and unavoidable with mitigation*.

Mitigation Measures

Mitigation Measure M-TR-6a: Driveway and Loading Operations Plan (DLOP). Sponsors of development projects that provide more than 100,000 square feet of residential or commercial uses shall prepare a DLOP, and submit the plan for review and approval by the Planning Department and the SFMTA in order to reduce potential conflicts between driveway operations, including loading activities, and pedestrians, bicycles and vehicles, and to maximize reliance of on-site loading spaces to accommodate new loading demand.

Prior to preparing the DLOP, the project sponsor shall meet with the Planning Department and the SFMTA to review the proposed number, location, and design of the on-site loading spaces, as well as the projected loading demand. In the event that the number of on-site loading spaces does not accommodate the projected loading demand for the proposed development, the project sponsor shall pursue with the SFMTA conversion of nearby on-street parking spaces to commercial loading spaces, if determined feasible by the SFMTA.

The DLOP shall be revised to reflect changes in accepted technology or operation protocols, or changes in conditions, as deemed necessary by the Planning Department and the SFMTA. The DLOP shall include the following components, as appropriate to the type of development and adjacent street characteristics:

- *Loading Dock Management.* To ensure that off-street loading facilities are efficiently used, and that trucks that are longer than can be safely accommodated are not permitted to use a building's loading dock, the project sponsor of a development project in the Plan Area shall develop a plan for management of the building's loading dock and shall ensure that tenants in the building are informed of limitations and conditions on loading schedules and truck size. The management plan could include strategies such as the use of an attendant to direct and guide trucks, installing a "Full" sign at the garage/loading dock driveway, limiting activity during peak hours, installation of audible and/or visual warning devices, and other features. Additionally, as part of the project application process, the project sponsor shall consult with the SFMTA concerning the design of loading and parking facilities.
- *Garage/Loading Dock Attendant.* If warranted by project-specific conditions, the project sponsor of a development project in the Plan Area shall ensure that building management employs attendant(s) for the project's parking garage and/or loading dock, as applicable. The attendant would be stationed as determined by the project-specific review analysis, typically at the project's driveway to direct vehicles entering and exiting the building and avoid any safety-related conflicts with pedestrians on the sidewalk during the a.m. and p.m. peak periods of traffic, bicycle, and pedestrian activity, with extended hours as dictated by traffic, bicycle and pedestrian conditions and by activity in the project garage and loading dock. Each project shall also install audible and/or visible warning devices, or comparably effective warning devices as approved by the Planning Department and/or the SFMTA, to alert pedestrians of the outbound vehicles from the parking garage and/or loading dock, as applicable.
- *Large Truck Access.* The loading dock attendant shall dictate the maximum size of truck that can be accommodated at the on-site loading area. In order to accommodate any large trucks (i.e., generally longer than 40 feet) that may require occasional access to the site (e.g., large move-in trucks that need occasional access to both residential and commercial developments), the DLOP shall include procedures as to the location of on-street accommodation, time of day

restrictions for accommodating larger vehicles, and procedures to reserve available curbside space on adjacent streets from the SFMTA.

- *Trash/Recycling/Compost Collection Design and Management.* When designs for buildings are being developed, the project sponsor or representative shall meet with the appropriate representative from Recology (or other trash collection firm) to determine the location and type of trash/recycling/compost bins, frequency of collections, and procedures for collection activities, including the location of Recology trucks during collection. The location of the trash/recycling/compost storage room(s) for each building shall be indicated on the building plans prior to submittal of plans to the Building Department. Procedures for collection shall ensure that the collection bins are not placed within any sidewalk, bicycle facility, parking lane or travel lane adjacent to the project site at any time.

Implementation of **Mitigation Measure M-TR-6a, Driveway and Loading Operations Plan**, would include loading space design review and implementation of operational procedures to reduce the potential for conflicts between subsequent development project-generated loading/unloading activities and pedestrians, bicyclists, transit and autos, and would therefore not result in any secondary transportation-related impacts.

Mitigation Measure M-TR-6b: Accommodation of On-Street Commercial Loading Spaces and Passenger Loading/Unloading Zones. The SFMTA shall develop detailed plans for each segment of the proposed street network changes that identify existing on-street commercial loading spaces and passenger loading/unloading zones, and then identify how demand within the existing loading facilities could be accommodated with the proposed street network changes. The detailed design shall also consider on-street loading supply needs for new development, as well as driveway access to loading facilities within existing and future buildings along the affected segments. The detailed design for each segment shall be prepared within a reasonable time frame of physical implementation to ensure that future land use conditions are reflected.

As part of detailed design for each affected street the SFMTA shall conduct the following:

1. Document the existing commercial loading spaces and passenger loading/unloading zones at the time of detailed design.
2. Conduct loading demand surveys/observation at appropriate times of day for each type of loading activity, to determine the actual demand associated with the on-street spaces and the need to replace or augment the on-street commercial loading spaces.
3. Identify replacement commercial loading spaces and passenger loading/unloading spaces. Commercial loading spaces should be prioritized over parking spaces, and, to the extent feasible, the replacement commercial loading spaces shall be of similar length on the same block and side of the street. Where commercial loading spaces would be permanently removed, install new commercial loading spaces within 250 feet on adjacent side streets if feasible.
4. At each location where passenger loading/unloading zones would be eliminated, contact the permit holder to determine adequacy of alternate locations and/or need for the passenger loading/unloading space. In some locations, such as schools and hotels, passenger loading/unloading activities could be accommodated within commercial loading spaces, with time of day restrictions.

5. Conduct business surveys and review detailed plans with merchant associations or other local stakeholders to determine need for commercial loading spaces.
6. Develop and implement a public education campaign regarding the street network changes, reduction or elimination of on-street parking spaces, location of replacement commercial loading spaces, and any time-of-day restrictions. On streets where on-street parking would be completely eliminated, provide information regarding commercial loading space supply on adjacent streets. In addition, provide information regarding *California Vehicle Code* §22500 and *San Francisco Transportation Code* §7.2.70 that loading activities (either truck or passenger loading/unloading) should not occur while stopped in any crosswalk, bicycle lane or travel lane.

The SFMTA and the Planning Department shall develop protocols for ongoing assessment of commercial loading needs on the affected streets, and for review of new development projects along the affected street segments to identify needed changes to the street network design (e.g., when a new driveway to a development site is required), or need for additional on-street commercial loading spaces.

In addition, the SFMTA shall explore the potential to develop and implement an off-hour delivery program to shift delivery windows for commercial deliveries to times when conflicts are less likely to occur. Such a program could be implemented as a pilot project, similar to the pilot project conducted in New York City in 2009–2010.²²⁵ Most commercial loading spaces in Central SoMa are metered, and the off-hour delivery program can include pricing to reduce the amount of time vehicles park, stand or stop at the curb, so that spaces turn over for more users, and double parking is minimized.

Implementation of **Mitigation Measure M-TR-6b, Accommodation of On-Street Commercial Loading Spaces and Passenger Loading/Unloading Zones**, would require that SFMTA prepare detailed designs of the street network changes to accommodate existing and new loading demand in such a way that does not result in significant conflicts with transit, bicyclists, pedestrians or other vehicles, or result in potentially hazardous conditions, and would therefore not result in any secondary transportation-related impacts.

Significance after Mitigation: Even with these mitigation measures, this impact would remain *significant and unavoidable with mitigation*.

Parking Impacts

Impact TR-7: Development under the Plan, including the proposed open space improvements and the street network changes, would not result in a substantial parking deficit that would create hazardous conditions or significant delays affecting transit, bicycles, or pedestrians, and where particular characteristics of the Plan demonstrably render use of other modes infeasible. (Less than Significant)

Parking conditions are not static, as parking supply and demand vary from day to day, from day to night, from month to month, etc. Hence, the availability of parking spaces (or lack thereof) is not a permanent physical condition, but changes over time as people change their modes and patterns of travel. While parking conditions change over time, a substantial deficit in parking caused by a project that creates hazardous

²²⁵ New York City Off-Hour Delivery Program. Available at <http://www.nyc.gov/html/dot/html/motorist/offhoursdelivery.shtml>, accessed August 16, 2016.

conditions or significant delays to traffic, transit, bicycles or pedestrians could adversely affect the physical environment. Whether a deficit in parking creates such conditions will depend on the magnitude of the shortfall and the ability of drivers to change travel patterns or switch to other travel modes. If a substantial deficit in parking caused by a project creates hazardous conditions or significant delays in travel, such a condition also could result in secondary physical environmental impacts (e.g., air quality or noise impacts caused by congestion), depending on the project and its setting.

The absence of a ready supply of parking spaces, combined with available alternatives to auto travel (e.g., transit service, taxis, bicycles or travel by foot) and a relatively dense pattern of urban development, induces many drivers to seek and find alternative parking facilities, shift to other modes of travel, or change their overall travel habits. Any such resulting shifts to transit service or other modes (walking and biking) would be in keeping with the City's *Transit First* Policy and numerous *San Francisco General Plan* Policies, including those in the Transportation Element. The City's *Transit First* Policy, established in the City's Charter Article 8A, Section 8A.115 provides that "parking policies for areas well served by public transit shall be designed to encourage travel by public transportation and alternative transportation."

Development under the Plan would generate parking demand, and the Plan's street network changes would result in part-time (through tow-away zones) and permanent on-street parking changes on streets within the transportation study area. In evaluating whether a parking deficit is substantial, and thus could result in hazardous conditions or delays, the following was considered: if the parking demand resulting from elimination of on-street spaces could not be met either with other on-street spaces or existing off-street parking facilities within 1/2-mile of the Plan Area; and whether the Plan Area is adequately served by other modes of transportation (i.e., taxis, TNC vehicles [e.g., Uber, Lyft, etc.], Muni, regional transit providers, and bicycle and pedestrian facilities). The analysis also considers whether the potential loss of parking, or shortfall in parking, is temporary or intermittent. Generally, if the parking loss is not substantial, it is anticipated that it would not create hazardous conditions or significant delays to other modes. In situations where a parking deficit is considered substantial, potential hazardous conditions related to the parking loss were considered. The potential hazards or delays considered included: whether the parking loss would lead to additional traffic circling in the area that could result in vehicles double parking in a bicycle lane or in mixed-flow/transit-only lanes, particularly on streets with one-lane roadway in each direction; whether stopped vehicles would impair visibility on narrow streets (e.g., the midblock alleys), block sidewalks or crosswalks, or block access to fire hydrants.

The transportation analysis accounts for potential secondary effects, such as cars circling and looking for a parking space in areas of limited parking supply, by assuming that all drivers would attempt to find parking at or near their destination and then seek parking farther away if convenient parking is unavailable. It is unlikely that the additional traffic circling in the area would lead to substantially increased VMT per capita to the point where significant impacts could occur, given that the VMT per capita in the area is far below the Bay Area regional average (discussed further in "VMT Analysis" section above). The secondary effects of drivers searching for parking is typically offset by a reduction in vehicle trips due to others who are aware of constrained parking conditions in a given area, and thus choose to reach their destination by other modes (i.e., walking, biking, transit, taxi). If this occurs, any secondary environmental impacts that may result from a shortfall in parking in the vicinity of the proposed project would be minor, and the traffic assignments used in calculating transit delay, as well as in the associated air quality, noise and pedestrian safety analyses, would reasonably address potential secondary effects.

Individual development projects in the Plan Area would be required to comply with the *Planning Code* requirements for parking, including the number of parking spaces, provision of car-share spaces, and the separation of parking costs from housing costs in new residential buildings. The proposed *Planning Code* amendments for the Plan Area would reduce the amount of vehicle parking required as follows: for residential uses, the *Planning Code* would permit up to one vehicle space for each two residential units (i.e., 0.5 spaces per unit), with no potential for additional spaces, for office uses the *Planning Code* would allow one vehicle space for every 3,500 square feet, and for retail uses the *Planning Code* would allow one space for every 1,500 square feet. The amount of parking spaces that would be provided as part of development under the Plan would be 2,750 parking spaces for the estimated 5,500 new residential units, and about 2,700 parking spaces for the 7.4 million square feet of non-residential uses (i.e., office, retail, etc.), for a total supply within the Plan Area about 5,450 vehicle parking spaces. The total supply assumes the maximum allowed per the *Planning Code*, and could be less if development projects provide less than the maximum permitted supply, or no on-site parking spaces.

Residential and non-residential development that could occur under the Plan would generate a parking demand for 21,000 vehicle parking spaces, including a residential demand for 5,600 spaces, and a non-residential demand of 15,400 spaces. As noted above, under the Plan about 5,450 parking spaces would be included as part of new development projects, and therefore, there could be a shortfall in parking spaces provided relative to the projected demand (i.e., a shortfall of about 15,550 parking spaces). This shortfall could be greater if development projects provide less than the maximum permitted parking spaces. It is anticipated that a portion of the shortfall would be accommodated on-street, particularly the overnight residential parking demand, and a portion of the shortfall could potentially be accommodated off-street in public parking facilities serving the daytime non-residential parking demand (e.g., the SFMTA Fifth & Mission/Yerba Buena Garage). As a result of the parking shortfall, some drivers may circle around the neighborhood in search of parking, which would increase traffic congestion on the local street network. The expectation is also that some drivers, frustrated by the shortage of available parking, would shift to public transit or other modes (such as walking or bicycling), while others would search out alternative parking within reasonable distance of their destination. The shift to other modes such as walking or transit could exacerbate identified impacts of development under the Plan on transit (see Impact TR-3 above) and pedestrian facilities (see Impact TR-4 above). Because the additional walking and transit trips as a result of the mode shift would be distributed among numerous transit routes and on streets throughout the Plan Area, it is not anticipated that the increase in trips would be such that new or noticeably more severe significant impacts would occur. The potential for such mode shift to occur to a substantial degree is speculative because current literature does not document which travel modes people would choose in response to the parking shortfall.

The Plan's street network changes would include permanent and peak period removal of on-street parking spaces:

- On Harrison and Bryant Streets between Second and Sixth Streets, on-street parking would be permitted only during off-peak periods.
- On Brannan Street between Second and Sixth Streets, on-street parking would be permitted on one side of the street in midblock locations.
- On Third Street between King and Market Streets, and on Fourth Street between Market and Harrison Streets, all on-street parking would be removed.

These street network changes would result in permanent removal of about 200 on-street standard parking spaces and access to about 400 spaces would be restricted during peak periods. A portion of the on-street

parking spaces that are proposed for permanent removal are currently not available for parking for some portion of the day due to existing tow-away regulations during the a.m. and/or the p.m. peak periods (e.g., on the west curb of Third Street between Howard and Market Streets, on the west curb of Fourth Street between Howard and Clementina Streets).

In the downtown area, there are a number of large public parking garages that currently have capacity to accommodate additional demand, depending on time of day, as well as numerous garages associated with office buildings that are open to the general public. For example, the Fifth & Mission/Yerba Buena Garage contains 2,585 parking spaces, and is about 52 percent occupied during the weekday midday. Other public parking garages in the area include the Moscone Garage (752 parking spaces and about 70 percent occupied during the midday), the SFMOMA Garage (410 parking spaces and about 80 percent occupied during the midday), and the Jessie Square Garage (372 parking spaces and about 75 percent occupied during the midday). Most of these public parking garages currently have availability throughout the day. Other larger off-street parking garages further from the transportation study area are located north of Market Street in the Union Square area, and include the Ellis O'Farrell Garage (800 parking spaces), the Union Square Garage (800 parking spaces), and the Sutter Stockton Garage (1,650 parking spaces). The SFMTA and the U.S. Department of Transportation are currently evaluating the data collected as part of the SFpark pilot program (data collection of on-street real-time space availability and rates ended in December 2013). On-street parking management would facilitate short-term parking and reduce the around-the-block maneuvers associated with drivers searching for parking. By discouraging long-term on-street parking, implementation of SFpark could support a shift in travel from auto to public transit or other modes. In addition, the SFMTA is currently evaluating the use of on-street parking spaces as carshare spaces.

Overall, the parking loss as a result of the street network changes, in combination with increased parking demand generated by development under the Plan, would be a less-than-significant impact because: both increased parking demand and parking removal would, in most cases be spread out over multiple streets; other on-street or off-street parking would be available; the streets within Central SoMa are well served by public transit and other modes; the proposed street network changes would further improve transit, bicyclist, and pedestrian conditions; and the parking loss would not be expected to create hazardous conditions such as impairing visibility on narrow streets (e.g., the midblock alleys), blocking sidewalks or crosswalks, or blocking access to fire hydrants. The shift to other modes such as walking or transit could exacerbate identified impacts of development under the Plan on transit (see Impact TR-3 above) and pedestrians (see Impact TR-4 above), though not to the extent where new or noticeably more severe significant impacts would occur. Thus, for the reasons described above, the impacts of development under the Plan and the street network changes on parking would be *less than significant*.

Discussion of potential hazards such as double-parking, illegal use of sidewalks and other public space that could result from removal of existing on-street commercial loading spaces and passenger loading/unloading zones is provided in Impact TR-6 above.

It is noted that implementation of **Mitigation Measure M-NO-1a, TDM Plan for Development Projects** (in Section IV.E, Noise and Vibration), sustainable modes would be encouraged and the use of single-occupant vehicles would be discouraged, which would further reduce the parking demand generated by development projects, although it is not required to mitigate the *less-than-significant* parking impact in Impact TR-7.

Mitigation: None required.

Emergency Vehicle Access Impacts

Impact TR-8: Development under the Plan, including the proposed open space improvements and street network changes, could result in significant impacts on emergency vehicle access. (Less than Significant with Mitigation)

Development under the Plan, in combination with the proposed street network changes, has the potential to impact emergency vehicle access primarily by creating conditions that would substantially affect the ability of drivers to yield the right-of-way to emergency vehicles, or preclude the ability of emergency vehicles to access streets within the transportation study area. This assessment assumes that all of the proposed street network changes would be implemented (i.e., on Third, Fourth, Folsom, Howard, Harrison, Bryant, and Brannan Streets), and therefore represents the maximum possible impacts that could result from implementation of the Plan. The discussion below first provides a description of how subsequent projects are reviewed, how the proposed street network changes would be designed, and their potential effects on emergency vehicle access. An assessment of the combined effect of development under the Plan in combination with the proposed street network changes is also provided below.

Plans for development projects are required to undergo multidepartmental City review to ensure that proposed vehicular access and streetscape improvements do not impede emergency vehicle access to the proposed project's site or surrounding areas. The increases in vehicle, pedestrian and bicycle travel associated with new development projects would not substantially affect emergency vehicle access, however, the additional vehicles could increase delays at nearby intersections. Where intersection delay would not increase considerably there would be no significant impacts on emergency vehicle access. Where intersection delay would increase considerably, emergency vehicle access would not be significantly impacted because California law requires that drivers yield the right-of-way to emergency vehicles and remain stopped until the emergency vehicle passes. Generally multilane arterial roadways, such as those in Central SoMa, allow the emergency vehicle to travel at higher speeds and allow other traffic to maneuver out of the path of the emergency vehicle. On streets where transit-only lanes are currently provided (e.g., Third Street, Mission Street), emergency vehicles would be able to use the existing transit-only lane.

The proposed street network changes would be required to undergo more detailed design and review. As part of that work, there is a preliminary review conducted by SFMTA's Transportation Advisory Staff Committee (TASC) and the San Francisco Fire Department, along with other City agencies. For example, the TASC reviews the details of proposals that modify sidewalks (e.g., the proposed sidewalk widening) as part of the 'sidewalk legislation process.' In accordance with Public Works' Order No. 172,512, the Board of Supervisors must approve changes to the city's sidewalks. As part of this approval, public agencies and private contractors submit necessary plans and information to the Bureau of Street Use and Mapping (BSM), a division of the San Francisco Public Works, for review and approval. The BSM refers the plans to many City agencies, including the Department of Public Health, Fire Department, Port, SFPUC as well as outside utility companies, including PG&E and a number of telecommunications infrastructure providers. Similarly, the detailed design of the transit-only lane and bicycle lane improvements would also be reviewed by TASC. As discussed above, cycle tracks would be designed consistent with NACTO and FHWA standards that would ensure that

adequate sight distances and turning radii are provided. Thus, the TASC review ensures that any safety issues, including emergency vehicle access, are resolved prior to permit issuance.

In general, implementation of the Plan's proposed street network changes would not introduce unusual design features, nor would the Plan change the street network to hinder or preclude emergency vehicle access. As noted above, the designs of protected transit-only lanes and cycle tracks would be reviewed by the San Francisco Fire Department as part of the TASC review to make sure that they meet all applicable standards and to ensure that emergency vehicle access at specific locations is maintained. Emergency vehicles would be able to travel within the transit-only lanes, which would have fewer vehicles than the mixed-flow travel lanes. If needed, fire and rescue vehicles would be able to mount the raised separation between the travel lanes and the protected cycle track or transit-only lane as they travel along the street to access their destination. A fire truck would also be able to access the two-way cycle track, which would be wide enough to accommodate a fire truck. Emergency vehicle access would not be affected on streets where cycle tracks and transit-only lanes are proposed.

The conversion of one-way to two-way streets, as proposed for Howard and Folsom Streets, could generally improve emergency vehicle response times by increasing the number of potential access routes to buildings within the Plan Area. Conversion to two-way traffic on Howard and Folsom Streets would decrease travel distances for emergency response vehicles (San Francisco Fire Department Station 1 is located on Folsom Street between Fifth and Sixth Streets—Figure IV.D-1, Transportation Study Area, p. IV.D-2, presents the locations of fire stations within and in the vicinity of the Central SoMa transportation study area), but increased congestion due to mixed-flow travel lane reductions associated with the street network changes and increased vehicle trips generated by development under the Plan could increase response times by slowing emergency vehicles.

The Plan's proposed street network changes would result in fewer mixed-flow travel lanes on a number of streets, which would reduce the available capacity for vehicles and thereby increase the number of vehicles in the remaining travel lanes, reduce the roadway width available for drivers to pull over to allow emergency vehicles to pass (e.g., due to raised buffers associated with cycle tracks), and result in additional vehicle delay on these streets; however, the Plan's street network changes would not cause any complete permanent roadway closures or disruption to emergency vehicle access (the exception would be the closure of Essex Street which extends for one block between Folsom and Harrison Streets). While California law requires that drivers yield the right-of-way to emergency vehicles and remain stopped until the emergency vehicle passes, and emergency vehicles are equipped with flashing lights and sirens to facilitate movement through congested streets and have the right-of-way, and emergency personnel are typically familiar with the best response routes, it is likely that the increased number of vehicles in the remaining travel lanes and increased levels of traffic congestion would occasionally impede emergency vehicle access in the Plan Area during periods of peak traffic volumes. Therefore, the proposed Plan street network changes, in combination with increases in vehicle traffic generated by development under the Plan, would result in a *significant* impact on emergency vehicle access.

Implementation of **Mitigation Measure M-TR-8, Emergency Vehicle Access Consultation**, would ensure that the final design of each street network project would adequately allow emergency vehicles to access streets within the transportation study area considering the location of the proposed street network changes, the number of mixed-flow travel lanes available to general traffic, and raised buffers between the mixed-flow travel lanes and transit-only lanes and/or cycle tracks. It would also ensure that private vehicles would not be precluded from yielding the right-of-way to approaching emergency vehicles. This measure would not result in secondary transportation-related impacts. Implementation of **Mitigation Measure M-TR-8, Emergency**

Vehicle Access Consultation, would ensure that emergency vehicle access would not be precluded on streets affected by the proposed street network changes and would reduce the potential for delays to emergency vehicles within the Central SoMa area; therefore, the Plan's impacts on emergency vehicle access would be *less than significant with mitigation*.

Mitigation Measures

Mitigation Measure M-TR-8: Emergency Vehicle Access Consultation. During the design phase of each street network project, SFMTA shall consult with emergency service providers, including the San Francisco Fire Department and the San Francisco Police Department. Through the consultation process, the street network design shall be modified as needed to maintain emergency vehicle access. SFMTA shall identify design modifications through this process, as needed to meet the following performance criteria:

- No physical barriers shall be introduced that would preclude emergency vehicle access.

Street design modifications should achieve the goals of the project without precluding emergency vehicle access. Design modifications selected by SFMTA, as needed to meet the performance criteria, shall be incorporated into the final design of each street network project and could include, but shall not be limited to: mountable concrete buffers, mountable curbs and corner or sidewalk bulbs, modification of corner or sidewalk bulbs and curb locations to accommodate turning emergency vehicles, and emergency vehicle signal priority. Any subsequent changes to the streetscape designs shall be subject to a similar consultation process.

Significance after Mitigation: Implementation of **Mitigation Measure M-TR-8** would ensure that the significant emergency vehicle access impact would be reduced to a *less-than-significant* level.

Construction-Related Transportation Impacts

Impact TR-9: Construction activities associated with development under the Plan, including the proposed open space improvements and street network changes, would result in substantial interference with pedestrian, bicycle, or vehicle circulation and accessibility to adjoining areas, and would result in potentially hazardous conditions. (Significant and Unavoidable with Mitigation)

In general, the analysis of construction impacts are specific to individual projects, and include a discussion of temporary roadway and sidewalk closures, relocation of bus stops, effects on roadway circulation due to construction trucks, and the increase in vehicle trips, transit trips and parking demand associated with construction workers. It should be noted that construction-related transportation impacts associated with individual development, open space, or transportation projects are temporary and generally of short-term duration (e.g., typically between two and three years), and are conducted in accordance with City requirements, described below, to ensure that they do not substantially affect transit, pedestrian or bicycle conditions or circulation in the area. To the extent construction of several development projects occurs simultaneously, within close proximity to each other, or at the same time as the proposed street network changes are being implemented, there could be detours and delays to vehicles, including transit, and bicyclists, and construction-related transportation impacts would occur.

Prior to construction, as part of the building permit process, the project sponsor and construction contractor(s) would be required to meet with San Francisco Public Works and SFMTA staff to develop and review truck routing plans for disposal of excavated materials, materials delivery and storage, as well as staging for construction vehicles. The construction contractor would be required to meet the City's Regulations for Working in San Francisco Streets, the Blue Book, including those regarding sidewalk and lane closures, and would meet with SFMTA staff to determine if any special traffic permits would be required.²²⁶ Prior to construction, the project contractor would coordinate with Muni's Street Operations and Special Events Office to coordinate construction activities and avoid impacts to transit operations. 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.

Implementation of transit-only lanes, which would involve demarcation of travel lanes with a solid red paint and a raised separation for the protected transit-only lanes, and implementation of protected cycle tracks would require temporary travel lane closures. Transit-only and bicycle lanes are often striped on weekends or other non-peak weekday times when traffic volumes are lower on the affected roadway. The widening of sidewalks along Howard, Folsom, Harrison, Bryant, Brannan, Third, and Fourth Streets would occur gradually over time, as these streets are redeveloped, and/or funding is available for implementation by the City.

In general, construction-related activities typically occur Monday through Friday, between 6:00 a.m. and 6:00 p.m., with limited construction activities on weekends (on an as-needed basis). Construction staging typically occurs within project sites and from the adjacent sidewalks. These sidewalks along the site frontages are usually closed throughout the construction duration, with temporary pedestrian walkways constructed in the adjacent parking lanes as needed. Temporary travel lane closures are required to be coordinated with the City in order to reduce the impacts on local traffic.

During a project's construction period, temporary and intermittent traffic and transit impacts may result from truck movements to and from project sites. Truck movements during periods of peak traffic flow would have greater potential to create conflicts than truck movements during non-peak hours because of the greater number of vehicles on the streets during the peak hour that would have to maneuver around queued trucks. Temporary parking demand from construction workers' vehicles and impacts on local intersections from construction worker traffic would occur in proportion to the number of construction workers who would use automobiles. Parking of construction workers' vehicles would temporarily increase occupancy levels in off-street parking facilities, either by those vehicles or by vehicles currently parking in on-street spaces that would be displaced by construction workers vehicles.

Sidewalk and travel lane closures during construction are required to be coordinated with the City in order to minimize the impacts on vehicles, including transit, bicyclists, and pedestrians. In general, travel lane and sidewalk closures are subject to review and approval by the SFMTA's Transportation Advisory Staff Committee (TASC) for permanent travel lane and sidewalk closures, and the Interdepartmental Staff Committee on Traffic and Transportation (ISCOTT) for temporary sidewalk and travel lane closures, including temporary construction closures. Both TASC and ISCOTT are interdepartmental committees that include representatives from Public Works, SFMTA, the Police Department, the Fire Department, and the Planning Department.

²²⁶ San Francisco Municipal Transportation Agency (SFMTA), *Parking and Traffic Regulations for Working in San Francisco Streets (The Blue Book)*, 8th Edition. Available at <http://www.sfmta.com/services/streets-sidewalks/construction-regulations>, accessed September 1, 2016.

As noted above, given the magnitude of projected development in the Plan Area and the transportation and streetscape projects anticipated to occur, and the uncertainty concerning construction schedules, construction activities associated with multiple overlapping projects could result in multiple travel lane closures, high volumes of trucks in the local vicinity, and travel lane and sidewalk closures, which in turn could disrupt or delay transit, pedestrians, or bicyclists, or result in potentially hazardous conditions (e.g., high volumes of trucks turning at intersections). Despite the best efforts of the project sponsors and project construction contractors, it is possible that simultaneous construction subsequent development projects, street network changes, and/or open space improvements could result in significant disruptions to traffic, transit, pedestrian, and bicycle circulation, even if each individual project alone would not have significant impacts. In some instances, depending on construction activities, the overlap of two or more construction projects may not result in significant impacts. However, for conservative purposes, given the anticipated concurrent construction of multiple buildings that could be under construction in the Plan Area, some in close proximity to each other, the expected intensity (i.e., the projected number of truck trips) and duration, and likely impacts to transit, bicyclists, and pedestrians, construction-related transportation impacts would be considered a *significant impact*.

Mitigation Measure M-TR-9, Construction Management Plan and Construction Coordination, (described below) would require the project sponsor, or its contractor(s) to consult with various City departments such as SFMTA and Public Works through ISCOTT, and other interdepartmental meetings, as needed, to develop a Construction Management Plan, and, if required, an additional Coordinated Construction Management Plan that would address construction-related vehicle routing, detours, and transit, bicycle, and pedestrian movements adjacent to the construction area for the duration of construction overlap. Key coordination meetings would be held jointly between project sponsors and contractors of other projects for which the City departments determine impacts could overlap. Implementation of **Mitigation Measure M-TR-9** would minimize, but would not eliminate, the significant impacts related to conflicts between construction activities and pedestrians, transit, bicyclists, and autos. Other measures, such as imposing sequential (i.e., non-overlapping) construction schedules for all projects in the vicinity, were considered but deemed infeasible due to potentially lengthy delays in implementation of subsequent projects. Therefore, construction-related transportation impacts would remain *significant and unavoidable with mitigation*.

Mitigation Measures

Mitigation Measure M-TR-9: Construction Management Plan and Construction Coordination.

Construction Management Plan. For projects within the Plan Area, the project sponsor shall develop and, upon review and approval by the SFMTA and Public Works, implement a Construction Management Plan, addressing transportation-related circulation, access, staging and hours of delivery. The Construction Management Plan would disseminate appropriate information to contractors and affected agencies with respect to coordinating construction activities to minimize overall disruption and ensure that overall circulation in the project area is maintained to the extent possible, with particular focus on ensuring transit, pedestrian, and bicycle connectivity. The Construction Management Plan would supplement and expand, rather than modify or supersede, and manual, regulations, or provisions set forth by the SFMTA, Public Works, or other City departments and agencies, and the California Department of Transportation.

If construction of the proposed project is determined to overlap with nearby adjacent project(s) as to result in transportation-related impacts, the project sponsor or its contractor(s) shall consult with

various City departments such as the SFMTA and Public Works through ISCOTT, and other interdepartmental meetings as deemed necessary by the SFMTA, Public Works, and the Planning Department, to develop a Coordinated Construction Management Plan. The Coordinated Construction Management Plan shall address construction-related vehicle routing, detours, and maintaining transit, bicycle, vehicle, and pedestrian movements in the vicinity of the construction area for the duration of the construction period overlap. Key coordination meetings shall be held jointly between project sponsors and contractors of other projects for which the City departments determine construction impacts could overlap.

The Construction Management Plan and, if required, the Coordinated Construction Management Plan, shall include, but not be limited to, the following:

- *Restricted Construction Truck Access Hours*—Limit construction truck movements to the hours between 9:00 a.m. and 4:00 p.m., or other times if approved by the SFMTA, to minimize disruption to vehicular traffic, including transit during the a.m. and p.m. peak periods.
- *Construction Truck Routing Plans*—Identify optimal truck routes between the regional facilities and the project site, taking into consideration truck routes of other development projects and any construction activities affecting the roadway network.
- *Coordination of Temporary Lane and Sidewalk Closures*—The project sponsor shall coordinate travel lane closures with other projects requesting concurrent lane and sidewalk closures through the ISCOTT and interdepartmental meetings process above, to minimize the extent and duration of requested lane and sidewalk closures. Travel lane closures shall be minimized especially along transit and bicycle routes, so as to limit the impacts to transit service and bicycle circulation and safety.
- *Maintenance of Transit, Vehicle, Bicycle, and Pedestrian Access*—The project sponsor/construction contractor(s) shall meet with Public Works, SFMTA, the Fire Department, Muni Operations and other City agencies to coordinate feasible measures to include in the Coordinated Construction Management Plan to maintain access for transit, vehicles, bicycles and pedestrians. This shall include an assessment of the need for temporary transit stop relocations or other measures to reduce potential traffic, bicycle, and transit disruption and pedestrian circulation effects during construction of the project.
- *Carpool, Bicycle, Walk and Transit Access for Construction Workers*—The construction contractor shall include methods to encourage carpooling, bicycling, walk and transit access to the project site by construction workers (such as providing transit subsidies to construction workers, providing secure bicycle parking spaces, participating in free-to-employee ride matching program from www.511.org, participating in emergency ride home program through the City of San Francisco (www.sferh.org), and providing transit information to construction workers).
- *Construction Worker Parking Plan*—The location of construction worker parking shall be identified as well as the person(s) responsible for monitoring the implementation of the proposed parking plan. The use of on-street parking to accommodate construction worker parking shall be discouraged. All construction bid documents shall include a requirement for the construction contractor to identify the proposed location of construction worker parking. If on-site, the location, number of parking spaces, and area where vehicles would enter and exit the site shall be required. If off-site parking is proposed to accommodate construction workers, the location of the off-site facility, number of parking spaces retained, and description of how workers would travel between off-site facility and project site shall be required.

- *Project Construction Updates for Adjacent Businesses and Residents*—To minimize construction impacts on access for nearby institutions and businesses, the project sponsor shall 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. At regular intervals to be defined in the Construction Management Plan and, if necessary, in the Coordinated Construction Management Plan, a regular email notice shall be distributed by the project sponsor that shall provide current construction information of interest to neighbors, as well as contact information for specific construction inquiries or concerns.

Significance after Mitigation: Even with implementation of these mitigation measures, this impact would remain *significant and unavoidable with mitigation*.

IV.D.5 Cumulative Impacts

The geographic context for the analysis of cumulative transportation impacts includes the sidewalks and roadways within the Plan Area. The discussion of cumulative transportation impacts assesses the degree to which the proposed project would affect the transportation network in conjunction with overall citywide growth and other reasonably foreseeable future development and transportation projects within Central SoMa and vicinity. See the “Overview” section at the beginning of Chapter IV, Environmental Setting, Impacts, and Mitigation Measures, for a more detailed description of cumulative projects. As described in the Section Travel Demand Methodology and Results, above, future 2040 cumulative vehicle, transit, and pedestrian forecasts were estimated based on cumulative development and growth identified by the Transportation Authority’s SF-CHAMP travel demand model. In addition to the reasonably foreseeable future development projects, the cumulative analysis includes the following present and reasonably foreseeable transportation network projects.

Central Subway Project. The Central Subway Project is the second phase of the Third Street light rail line (i.e., T Third), which opened in 2007. Construction is currently underway, and the Central Subway will extend the T Third line northward from its current terminus at Fourth and King Streets to a surface station south of Bryant Street and go underground at a portal under I-80. From there it will continue north to stations at Moscone Center (i.e., on the west side of Fourth Street between Folsom and Clementina Streets), Union Square—where it will provide passenger connections to the Powell Street Station and BART—and in Chinatown, where the line will terminate at Stockton and Clay Streets.

Construction associated with utility relocation has been completed. Work is underway on the 1.5 miles of twin-bore tunnels underneath Fourth Street and Stockton Street, from I-80 to North Beach. Major components of the tunnel project include construction of the Tunnel Boring Machine launch box and cross passages; construction of an extraction shaft and portal; and monitoring and protection of existing utilities, buildings, and BART tunnels. Construction of the Central Subway is scheduled to be completed in 2017, and revenue service is scheduled for 2019.

Second Street Improvement Project. San Francisco Public Works, SFMTA, and the Planning Department have been working with community members on design improvements on Second Street between Market and King Streets, consistent with the *San Francisco Bicycle Plan*. Bicycle Route 11 runs on Second Street, and in accordance with the *San Francisco Bicycle Plan*, the project would provide separated bicycle lanes along the entire length of Second Street, as well as a pedestrian refuge space at a number of locations. The project also includes sewer and

water main upgrades, roadway resurfacing, concrete curb reconstruction, the installation of ADA-compliant curb ramps, and upgrades to the traffic signal system. The preferred concept would reduce the number of travel lanes from two to one travel lane in each direction, limit general parking, and relocate some commercial loading spaces and passenger loading/unloading zones. Construction of this project was initiated in 2016.

Vision Zero. The City adopted Vision Zero in 2014. Vision Zero SF is a road safety policy focused on eliminating traffic deaths in San Francisco by 2024. SFMTA, in collaboration with other City agencies prioritized over 24 street engineering projects and improvements on high injury corridors at more than 170 locations (identified through the WalkFirst pedestrian safety planning process), and bicycle-related safety improvement projects. Specific projects implemented or proposed include: a buffered bicycle lane on Howard Street, painted pedestrian zones, continental crosswalks, signal retiming, Safer Market Streets Project, Jessie Street Signalization Project, and the Howard Street Signal Project.²²⁷

San Francisco Bicycle Plan. The *San Francisco Bicycle Plan* includes planned short-term improvements to Bicycle Route 19 on Fifth Street. Fifth Street improvements include the construction of Class II bicycle lanes and Class III bicycle routes in both directions between Market and Townsend Streets. Similar to the ongoing Second Street Improvement Project described above, Bicycle Plan improvements on Fifth Street would reduce the number of travel lanes and prohibit northbound and southbound left turns, as well as implement other minor changes to lane geometry and on-street parking.

Transit Center District Plan. Adopted in 2012, the Transit Center District Plan (TCDP) builds on the City's 1985 Downtown Plan to create new land use, urban form, building design, and public realm improvements in and around the new Transbay Transit Center that is currently under construction. The TCDP increases the zoned capacity of the area, roughly bounded by Steuart Street to the east, Folsom Street to the south, Annie Street/Kaplan Lane (just east of Third Street) to the west, and Market Street to the north. In rezoning, the TCDP includes changes to the transportation network, including conversions of one-way streets to two-way traffic (i.e., Howard and Folsom Streets), reductions in travel lanes, provision of new transit-only lanes, sidewalk widening, bulb-out installations, creation of new multi-use paths, and other improvements.

Muni Forward. Muni Forward anticipates changing routes within the transportation study area, as described above under Local Muni Service on p. IV.D-4. Year 2040 cumulative analysis assumes changes to the capacity of the lines as identified by route changes and headway changes indicated within the recommended Muni Forward improvements.

Better Market Street. Public Works, in coordination with the San Francisco Planning Department and the SFMTA proposes to redesign and provide various transportation and streetscape improvements to the 2.2-mile segment of Market Street between Octavia Boulevard and The Embarcadero, and potentially to the 2.3-mile segment of Mission Street between Valencia Street and The Embarcadero, as well as Valencia Street between McCoppin and Market Streets, and 10th Street between Market and Mission Streets. Better Market Street project elements consist of both transportation and streetscape improvements, including changes to

²²⁷ Since publication of the Notice of Preparation (April 24, 2013), the SFMTA has recently proposed and approved (November 15, 2016) three additional Vision Zero projects outside the Central SoMa Plan Area: Seventh Street, Eighth Street, and Turk Street. Based on the analyses conducted for environmental review for each of these three projects, substantial traffic diversion would not be anticipated from implementation of these projects. Therefore, it is not anticipated that these projects would alter the conclusions of the cumulative impact analysis presented below.

roadway configuration and private vehicle access; traffic signals; surface transit, including transit-only lanes, stop spacing, service, stop location, stop characteristics and infrastructure; bicycle facilities; pedestrian facilities; streetscapes; commercial and passenger loading; vehicular parking; plazas; and utilities. Design, environmental review, selection of the preferred alternative, and approvals will continue through 2017, and construction of improvements is currently anticipated for completion sometime in 2018.²²⁸

SFMTA Capital Improvement Program. On July 19, 2016, the SFMTA Board of Directors adopted the Capital Improvement Program (CIP) for Fiscal Years 2017–2021.²²⁹ The CIP designates funding for a variety of transportation improvements, such as transit fleet replacement, communications equipment upgrades, streetscape projects, taxi programs, and transit optimization. Some of the improvements identified in the CIP are in the advanced design or construction phases, such as the Central Subway and Van Ness Bus Rapid Transit projects, and others that are in the early stages of planning and do not yet have specific physical features identified. Among those in the latter category in the Central SoMa Plan Area are the Fifth Street Bicycle Strategy and the Townsend Street Bicycle Strategy, both of which are anticipated to begin visioning and public outreach processes during the CIP timeframe to identify possible street changes that would improve bicycle safety and access.

Cumulative VMT Impacts

Impact C-TR-1: Development under the Plan, including the proposed open space improvements and the street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in significant impacts related to VMT. (Less than Significant)

Development under the Plan (Programmatic Level Analysis). As discussed in Impact TR-1 for existing plus Plan conditions, the TAZs that comprise the Central SoMa Plan Area are located within a Priority Development Area in *Plan Bay Area*, and the Plan does not include development in outlying areas or areas specified as open space or priority conservation areas. Consistency with the SCS goal of reducing VMT per capita by 10 percent compared to year 2005 levels by the year 2040 is, by its very nature, a cumulative analysis. As shown above in Table IV.D-5, Average Daily VMT per Capita, Plan Bay Area Data, 2005 Baseline and 2040 (with Central SoMa Plan) Conditions, p. IV.D-37, under 2040 cumulative conditions, the Plan Area is expected to attain the *Plan Bay Area* goal of reducing VMT per capita for residential uses by more than 10 percent compared to year 2005 levels, both with and without implementation of the Central SoMa Plan. As shown in Table IV.D-5, the average daily VMT per resident within the Central SoMa area would decrease from 2.8 VMT per capita in 2005 to 2.0 VMT per capita in 2040, a 30.7 percent reduction. Thus, development specified in the Plan would lead to a residential VMT per capita reduction that would be greater than the SCS reduction goal. Thus, cumulative impacts related to VMT would be *less than significant*.

Street Network Changes (Project-Level Analysis). As discussed in Impact TR-1 for existing plus Plan conditions, the transportation features of the proposed Plan fit within the general types of projects identified by OPR in the “Approach to Analysis” section, beginning on p. IV.D-25, that would not substantially induce

²²⁸ Better Market Street Project information available at <http://www.bettermarketstreetsf.org/about-common-questions.html>, accessed February 4, 2015.

²²⁹ San Francisco Municipal Transportation Agency, *Capital Improvement Program Fiscal Year 2017–2021*. Adopted July, 19, 2016 by SFMTA Board of Directors Resolution No. 16-097. Available at <https://www.sfmta.com/sites/default/files/reports/2016/SFMTA%20FY%202017-2021%20CIP.pdf>, accessed November 21, 2016.

automobile travel. The reasonably foreseeable cumulative projects listed above consist of safety improvements, conversion of mixed-flow travel lanes to transit-only lanes and cycle tracks, installation of new traffic control devices including signalized midblock pedestrian crossings, signal timing optimization, removal of on-street parking, removal and modification of on-street commercial loading regulations, and creation of new transit services. These cumulative projects also fit within the general types of projects determined by OPR to not substantially induce automobile travel. Therefore, the Central SoMa street network changes, in conjunction with other reasonably foreseeable projects, would not induce automobile travel, and therefore, cumulative impacts related to increases in automobile travel would be *less than significant*.

Future Project-Level Analysis of Subsequent Development Projects. As discussed in Impact TR-1 for existing plus Plan conditions, the majority of subsequent development projects under the Plan would likely consist of a variety of mixed-use office, residential, hotel, retail, PDR (production, distribution, and repair), and similar uses. Table IV.D-7, Average Daily VMT per Capita for Central SoMa Plan Area TAZs by Land Use, Existing (2012) and 2040 Cumulative Conditions, p. IV.D-40, presents the 2040 cumulative daily average VMT per capita for the TAZs that comprise the Central SoMa Plan Area. These VMT per capita projections were calculated using SF-CHAMP, which includes the transportation network changes that are reasonably foreseeable transportation projects included in the latest adopted Regional Transportation Plan, San Francisco Transportation Plan and/or are actively undergoing environmental review or is anticipated to take undertake environmental in the near future because sufficient project definition has been established.²³⁰ The projected 2040 cumulative average daily VMT per capita for residential and hotel uses is projected to range between 1.5 to 2.5 for the TAZs that comprise the Central SoMa Plan Area, which is 85 to 91 percent below the 2040 cumulative regional average daily VMT per capita of 16.1 for residential and hotel uses. The projected 2040 cumulative daily average VMT per capita for the Central SoMa TAZs for office and PDR uses is projected to range between 6.1 and 7.4, which is 56 to 64 percent below the 2040 cumulative regional average daily VMT per capita of 17.0 for office and PDR uses. The projected 2040 cumulative daily average VMT per capita for the Central SoMa TAZs for retail uses is projected to range between 7.1 and 9.7, which is 34 to 51 percent below the 2040 cumulative regional average daily VMT per capita of 14.6 for retail uses. Because the 2040 cumulative VMT per capita in all of the Central SoMa Plan Area TAZs would be substantially below the Bay Area regional average (i.e., between 34 and 91 percent, as noted above), it is anticipated that most subsequent mixed-use, office, residential, hotel, retail, or PDR projects pursuant to the Plan would not result in cumulative VMT impacts. Furthermore, as noted in Impact TR-1, all parcels within the Central SoMa Plan Area meet the Proximity to Transit Stations screening criterion (provided such projects also meet the floor area ratio and parking requirements of this screening criterion), which also indicates that subsequent projects in the Plan Area would not cause substantial additional VMT. This determination would be confirmed through project level environmental review at the time when subsequent projects are proposed and considered for approval through the entitlement review process.

Therefore, for the above reasons, implementation of the Plan, in combination with past, present and reasonably foreseeable development in San Francisco, would result in *less-than-significant* cumulative impacts on VMT.

Mitigation: None required.

²³⁰ Manoj Madhavan and Chris Espiritu, San Francisco Planning Department, Memo to Transportation Team, "CEQA – 2040 SF-CHAMP Modeling Methodology Assumptions", April 25, 2016.

Cumulative Traffic Hazards Impacts

Impact C-TR-2: Development under the Plan, including the proposed open space improvements and the street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in significant impacts related to traffic hazards. (Less than Significant)

As described above, a number of cumulative transportation network projects are currently underway, planned, or proposed that would enhance the transportation network in the Central SoMa vicinity, particularly for pedestrians and bicyclists. These include the Vision Zero projects aimed at eliminating traffic deaths by 2024, the Second Street Improvement Project, and Better Market Street project, among others. Cumulative transportation projects, including the Plan's proposed street network changes, would not introduce unusual design features, and these projects would be designed to meet City, NACTO and FHWA standards, as appropriate. Increases in vehicle, pedestrian and bicycle travel associated with cumulative development, including development under the Plan, could result in the potential for increased vehicle-pedestrian and vehicle-bicycle conflicts, even with the cumulative transportation network projects. However, the increased potential for conflicts would not be considered new traffic hazard. For these reasons, implementation of the Plan, in combination with past, present and reasonably foreseeable development in San Francisco, would result in *less-than-significant* cumulative impacts related to traffic hazards.

Mitigation: None required.

Cumulative Transit Impacts

Impact C-TR-3: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would contribute considerably to significant cumulative transit impacts on local and regional transit providers. (Significant and Unavoidable with Mitigation)

Capacity Utilization Analysis

The 2040 cumulative transit analysis accounts for ridership and/or capacity changes associated with Muni Forward, the Central Subway Project (which is scheduled to open in 2019), the new Transbay Transit Center, the electrification of Caltrain, and expanded WETA ferry service. 2040 cumulative No Project and 2040 cumulative plus Plan conditions for the weekday a.m. and p.m. peak hours were developed for the Muni downtown screenlines, the Central SoMa cordons, and for the regional screenlines.

Muni Downtown Screenlines. Table IV.D-18, **Muni Downtown Screenlines—Weekday AM and PM Peak Hours—2040 Cumulative Conditions**, presents the Muni downtown screenlines for the a.m. and p.m. peak hours for year 2040 cumulative conditions without and with implementation of the Plan. Overall, under 2040 cumulative plus Plan conditions, capacity utilization on the Muni downtown screenlines would be 77.4 percent during the a.m. peak hour and 75.4 percent during the p.m. peak hour, which would be less than Muni's 85 percent capacity utilization standard. However, under year 2040 cumulative plus Plan conditions, the capacity utilization on the Northwest and Southwest screenlines and on eight corridors (i.e., the California,

TABLE IV.D-18 MUNI DOWNTOWN SCREENLINES—WEEKDAY AM AND PM PEAK HOURS—2040 CUMULATIVE CONDITIONS

Muni Screenline and Corridor	2040 Cumulative No Project			2040 Cumulative plus Plan	
	Ridership	Capacity	Capacity Utilization	Ridership	Capacity Utilization
AM PEAK HOUR (INBOUND)					
Northeast					
Kearny/Stockton	6,978	9,473	73.7%	7,406	78.2%
Other Lines	752	1,785	42.1%	763	42.7%
<i>Screenline Total</i>	7,729	11,258	68.7%	8,168	72.6%
Northwest					
Geary	2,576	3,764	68.4%	2,673	71.0%
California	1,914	2,306	83.0%	1,989	86.3%
Sutter/Clement	455	756	60.2%	581	76.9%
Fulton/Hayes	1,906	1,977	96.4%	1,965	99.4%
Balboa	669	1,008	66.4%	693	68.8%
<i>Screenline Total</i>	7,519	9,810	76.6%	7,900	80.5%
Southeast					
Third Street	2,356	5,712	41.2%	2,422	42.4%
Mission	3,027	3,008	100.6%	3,126	103.9%
San Bruno/Bayshore	1,858	2,197	84.6%	1,959	89.2%
Other lines	1,651	2,027	81.5%	1,836	90.6%
<i>Screenline Total</i>	8,892	12,944	68.7%	9,343	72.2%
Southwest					
Subway lines	6,093	7,020	86.8%	6,403	91.2%
Haight/Noriega	1,312	1,596	82.2%	1,417	88.8%
Other lines	171	560	30.5%	175	31.3%
<i>Screenline Total</i>	7,577	9,176	82.6%	7,996	87.1%
<i>Muni Screenlines Total</i>	31,718	43,187	73.4%	33,408	77.4%
PM PEAK HOUR (OUTBOUND)					
Northeast					
Kearny/Stockton	6,099	8,329	73.2%	6,304	75.7%
Other lines	1,216	2,065	58.9%	1,238	59.9%
<i>Screenline Total</i>	7,314	10,394	70.4%	7,541	72.6%
Northwest					
Geary	2,944	3,621	81.3%	2,996	82.7%
California	1,765	2,021	87.3%	1,765	87.3%
Sutter/Clement	700	756	92.7%	749	99.1%
Fulton/Hayes	1,554	1,877	82.8%	1,775	94.5%
Balboa	735	974	75.5%	775	79.6%
<i>Screenline Total</i>	7,699	9,248	83.2%	8,061	87.2%
Southeast					
Third Street	2,179	5,712	38.2%	2,300	40.3%
Mission	2,673	3,008	88.9%	2,687	89.3%
San Bruno/Bayshore	1,641	2,134	76.9%	1,823	85.4%
Other lines	1,465	1,927	76.0%	1,605	83.3%
<i>Screenline Total</i>	7,958	12,781	62.3%	8,415	65.8%
Southwest					
Subway lines	5,435	6,804	79.9%	5,756	84.6%
Haight/Noriega	1,211	1,596	75.9%	1,276	80.0%
Other lines	376	840	44.8%	380	45.2%
<i>Screenline Total</i>	7,023	9,240	76.0%	7,413	80.2%
<i>Muni Screenlines Total</i>	29,994	41,664	72.0%	31,430	75.4%

SOURCE: SF Planning Department Memorandum, *Transit Data for Transportation Impact Studies*, May 2015, Fehr & Peers, 2016.

NOTES:

Bold indicates capacity utilization of 85 percent or greater.**Shaded** indicates cumulatively considerable contribution from implementation of the Plan.

Sutter/Clement, and Fulton/Hayes corridors of the Northwest screenline, the Mission, San Bruno/Bayshore, and Other Lines corridors of the Southeast screenline, and the Subway Lines and Haight/Noriega corridors of the Southwest screenline), would exceed Muni's 85 percent capacity utilization standard during the a.m. and/or p.m. peak hours. These capacity utilization standard exceedances would constitute *significant* cumulative impacts.

Based on the contribution of the Plan ridership to year 2040 cumulative plus Plan conditions for the Muni downtown screenlines and corridors operating at more than the 85 percent capacity utilization standard, the Plan would contribute considerably (i.e., more than five percent contribution to total transit ridership) to cumulative transit impacts at the following Muni downtown screenlines and corridors:

- California corridor of the Northwest screenline (a.m.);
- Sutter/Clement corridor of the Northwest screenline (p.m.);
- Fulton/Hayes corridor of the Northwest screenline (p.m.);
- Northwest screenline (p.m.);
- San Bruno/Bayshore corridor of the Southeast screenline (a.m., p.m.);
- Other Lines corridor of the Southeast screenline (a.m.);
- Haight/Noriega corridor of the Southwest screenline (a.m.); and
- Southwest screenline (a.m.).

The Plan would not contribute considerably (i.e., less than five percent contribution to total transit ridership) to cumulative transit impacts on the California corridor of the Northwest screenline (p.m.), Fulton/Hayes corridor of the Northwest screenline (a.m.), Mission corridor of the Southeast screenline (a.m. and p.m.), and the Subway Lines corridor of the Southwest screenline (a.m.).

As described under Impact TR-3, implementation of **Mitigation Measure M-TR-3a, Transit Enhancements**, particularly transit frequency increases, would reduce the effect of increased ridership on Muni capacity utilization. However, because it is not known whether or how much additional funding would be generated for transit service and whether SFMTA would provide additional service on the impacted routes to fully mitigate project impacts, the Plan's transit impact on capacity utilization on the Muni downtown screenlines under 2040 cumulative conditions is considered *significant and unavoidable with mitigation*.

Muni Central SoMa Cordons. Table IV.D-19, Central SoMa Cordons—Weekday AM and PM Peak Hours—2040 Cumulative Conditions, presents the Central SoMa Cordons for the a.m. and p.m. peak hours for 2040 cumulative conditions without and with implementation of the Plan. Under 2040 cumulative plus Plan conditions, the capacity utilization on the Northwest and Southwest cordon and on eight corridors (i.e., the Northern, Middle, and Southern corridors of the Northwest cordon, the Middle and Western corridors of the Southeast cordon, and the Northern, Middle, and Southern corridors of the Southwest cordon), would exceed Muni's 85 percent capacity utilization standard during the a.m. and/or p.m. peak hours, indicating *significant* 2040 cumulative impacts.

TABLE IV.D-19 CENTRAL SoMa CORDONS — WEEKDAY AM AND PM PEAK HOURS — 2040 CUMULATIVE CONDITIONS

Central SoMa Cordon and Corridor	2040 Cumulative No Project			2040 Cumulative plus Plan	
	Ridership	Capacity	Capacity Utilization	Ridership	Capacity Utilization
AM PEAK HOUR (INBOUND)					
Northeast Cordon					
Eastern Corridor	568	1,190	47.7%	574	48.2%
Middle Corridor	2,595	3,761	69.0%	2,742	72.9%
Western Corridor	636	1,004	63.4%	652	65.0%
<i>Cordon Subtotal</i>	3,799	5,955	63.8%	3,968	66.6%
Northwest Cordon					
Northern Corridor	319	378	84.4%	385	101.9%
Middle Corridor	2,256	3,076	73.3%	2,323	75.5%
Southern Corridor	1,356	1,540	88.1%	1,377	89.5%
<i>Cordon Subtotal</i>	3,931	4,994	78.7%	4,085	81.8%
Southeast Cordon					
Eastern Corridor	3,028	6,594	45.9%	3,139	47.6%
Middle Corridor	1,984	2,449	81.0%	2,144	87.5%
Western Corridor	2,775	2,773	100.1%	2,839	102.4%
<i>Cordon Subtotal</i>	7,787	11,816	65.9%	8,122	68.7%
Southwest Cordon					
Northern Corridor	2,829	3,436	82.3%	3,046	88.6%
Middle Corridor	2,019	2,282	88.5%	2,097	91.9%
Southern Corridor	2,264	2,520	89.8%	2,378	94.4%
<i>Cordon Subtotal</i>	7,112	8,238	86.3%	7,521	91.3%
<i>SoMa Cordon Total</i>	22,629	31,002	73.0%	23,696	76.4%
PM PEAK HOUR (OUTBOUND)					
Northeast Cordon					
Eastern Corridor	963	1,470	65.5%	981	66.7%
Middle Corridor	1,951	2,617	74.5%	2,119	81.0%
Western Corridor	681	1,004	67.8%	683	68.0%
<i>Cordon Subtotal</i>	3,594	5,091	70.6%	3,782	74.3%
Northwest					
Northern Corridor	409	378	108.2%	434	114.8%
Middle Corridor	2,523	2,991	84.4%	2,544	85.1%
Southern Corridor	1,189	1,440	82.6%	1,392	96.7%
<i>Cordon Subtotal</i>	4,121	4,809	85.7%	4,370	90.9%
Southeast Cordon					
Eastern Corridor	2,910	6,594	44.1%	3,088	46.8%
Middle Corridor	1,774	2,386	74.4%	1,963	82.3%
Western Corridor	2,245	2,673	84.0%	2,245	84.0%
<i>Cordon Subtotal</i>	6,929	11,653	59.5%	7,296	62.6%
Southwest Cordon					
Northern Corridor	2,644	3,220	82.1%	2,807	87.2%
Middle Corridor	1,745	2,282	76.5%	1,838	80.5%
Southern Corridor	1,957	2,520	77.7%	2,070	82.2%
<i>Cordon Subtotal</i>	6,346	8,022	79.1%	6,715	83.7%
<i>SoMa Cordon Total</i>	20,991	29,575	71.0%	22,164	74.9%

SOURCE: SF Planning Department Memorandum, *Transit Data for Transportation Impact Studies*, May 2015; Fehr & Peers, 2016.

NOTES:

Bold indicates capacity utilization of 85 percent or greater.**Shaded** indicates cumulatively considerable contribution from the Plan.

Based on the contribution of the Plan ridership to 2040 cumulative plus Plan conditions for the Central SoMa cordons and corridors operating at more than the 85 percent capacity utilization standard, the Plan would contribute considerably to cumulative transit impacts on the following Central SoMa cordons and corridors:

- Northern corridor of the Northwest cordon (a.m., p.m.);
- Middle corridor of the Northwest cordon (p.m.);
- Southern corridor of the Northwest cordon (p.m.);
- Northwest cordon (p.m.);
- Middle corridor of the Southeast cordon (a.m.); and
- Northern corridor of the Southwest cordon (a.m., p.m.).

Development under the Plan would not contribute considerably to cumulative transit impacts at the Southern corridor of the Northwest cordon (a.m.), the Western corridor of the Southeast cordon (a.m.), the Middle corridor of the Southwest cordon (a.m.), the Southern corridor of the Southwest cordon (a.m.), or the Southwest cordon (a.m.).

Implementation of **Mitigation Measure M-TR-3a, Transit Enhancements**, would potentially reduce the effect of increased ridership on Muni capacity utilization. However, because it is not known whether or how much additional funding would be generated for transit service and whether SFMTA could provide additional service on the impacted routes to fully mitigate project impacts, the Plan's transit impact on capacity utilization on the Central SoMa cordons under 2040 cumulative conditions is considered *significant and unavoidable with mitigation*.

Regional Screenlines. Table IV.D-20, Regional Transit Screenlines—Weekday AM and PM Peak Hours—2040 Cumulative Conditions presents the regional transit screenline analysis for both 2040 cumulative No Project and 2040 cumulative plus Plan conditions. With exception of BART from the East Bay during the a.m. peak hour, and to the East Bay during the p.m. peak hour, no regional transit providers or regional screenlines are expected to exceed the regional provider capacity utilization threshold of 100 percent under 2040 cumulative conditions. Development under the Plan would add about 1,100 trips to BART from the East Bay during the a.m. peak hour, and about 1,000 trips to BART to the East Bay during the p.m. peak hour, which would be a considerable contribution to cumulative impacts on BART and the East Bay screenline. Therefore, for both a.m. and p.m. peak hour conditions, development under the Plan would contribute considerably to cumulative impacts on the regional screenlines.

Implementation of **Mitigation Measure M-TR-3a, Transit Enhancements**, would potentially reduce the effect of increased ridership on BART capacity utilization. However, because it is not known whether or how much additional funding would be generated for transit service and whether additional service to fully mitigate project impacts would be provided, the Plan's transit impact on regional capacity utilization under 2040 cumulative conditions is considered *significant and unavoidable with mitigation*.

Transit Delay Analysis

As described in Impact TR-3 for existing plus Plan conditions, a transit delay analysis was conducted for Muni routes traveling within the Central SoMa study area to determine the impact associated with additional vehicles generated by new development under the Plan, as well as for conditions for development under the Plan with

TABLE IV.D-20 REGIONAL TRANSIT SCREENLINES — WEEKDAY AM AND PM PEAK HOURS — 2040
CUMULATIVE CONDITIONS

Regional Screenline	2040 Cumulative No Project			2040 Cumulative plus Plan	
	Ridership	Capacity	Capacity Utilization	Ridership	Capacity Utilization
AM PEAK HOUR (INBOUND)					
East Bay					
BART	36,923	32,100	115.4%	38,000	118.4%
AC Transit	6,791	12,000	56.6%	7,000	58.3%
Ferry	4,577	5,940	77.1%	4,682	78.8%
<i>Subtotal</i>	<i>48,291</i>	<i>50,040</i>	<i>96.8%</i>	<i>49,682</i>	<i>99.3%</i>
North Bay					
GGT Buses	1,734	2,543	70.1%	1,990	78.3%
Ferry	1,606	1,959	82.0%	1,619	82.6%
<i>Subtotal</i>	<i>3,340</i>	<i>4,502</i>	<i>75.3%</i>	<i>3,609</i>	<i>80.2%</i>
South Bay					
BART	20,539	28,800	71.9%	21,000	72.9%
Caltrain	1,945	3,600	55.4%	2,310	64.2%
SamTrans	281	520	54.0%	271	52.1%
Ferries	59	200	29.5%	59	29.5%
<i>Subtotal</i>	<i>22,824</i>	<i>33,120</i>	<i>71.9%</i>	<i>23,640</i>	<i>71.4%</i>
<i>Total All Screenlines</i>	<i>74,455</i>	<i>87,662</i>	<i>85.4%</i>	<i>76,931</i>	<i>87.8%</i>
PM PEAK HOUR (OUTBOUND)					
East Bay					
BART	34,999	32,100	109.9%	36,000	112.1%
AC Transit	6,873	12,000	57.3%	7,000	58.3%
Ferry	5,153	5,940	86.8%	5,319	89.5%
<i>Subtotal</i>	<i>47,025</i>	<i>50,040</i>	<i>94.5%</i>	<i>48,39</i>	<i>96.6%</i>
North Bay					
GGT Buses	1,904	2,817	69.3%	2,070	73.5%
Ferry	1,601	1,959	81.7%	1,619	82.6%
<i>Subtotal</i>	<i>3,505</i>	<i>4,776</i>	<i>74.4%</i>	<i>3,689</i>	<i>77.2%</i>
South Bay					
BART	19,392	28,808	68.3%	20,000	69.4%
Caltrain	2,243	3,600	63.6%	2,529	70.3%
SamTrans	126	320	39.4%	150	46.9%
Ferries	60	200	30.0%	59	29.5%
<i>Subtotal</i>	<i>22,821</i>	<i>32,928</i>	<i>67.2%</i>	<i>22,738</i>	<i>69.1%</i>
<i>Total All Screenlines</i>	<i>72,351</i>	<i>87,744</i>	<i>83.2%</i>	<i>74,746</i>	<i>85.2%</i>

SOURCE: SF Planning Department Memoranda, *Transit Data for Transportation Impact Studies*, May 2015 and *Updated BART Regional Screenlines*, October 2016, Fehr & Peers, 2016.

NOTE:

Bold indicates capacity utilization of 100 percent or greater.

the proposed street network changes. Under existing plus Plan conditions, implementation of the Plan would result in increased congestion and significant and unavoidable impacts related to transit delay for ten Muni routes (i.e., the 8 Bayshore, 8AX Bayshore Express, 8BX Bayshore Express, 10 Townsend, 14 Mission, 14R Mission

Rapid, 27 Bryant, 30 Stockton, 45 Union-Stockton, 47 Van Ness routes), and on Golden Gate Transit and SamTrans routes that travel on Mission, Howard, Folsom, and Harrison Streets. Under 2040 cumulative plus Plan conditions, average vehicle delay at intersections are projected to increase from existing conditions due to other background traffic growth, and would result in increased delays to these and all other Muni, Golden Gate Transit, and SamTrans routes operating within Central SoMa. This would be considered a significant cumulative impact related to transit delay on Muni, Golden Gate Transit and SamTrans operations, and development under the Plan with the proposed street network changes) would contribute considerably to this cumulative impact.

Implementation of **Mitigation Measure M-TR-3a, Transit Enhancements**, could potentially result in additional funding that could be dedicated to increased Muni, Golden Gate Transit, and SamTrans service, however, it would be speculative at this time to presume that sufficient funding could be available to offset project effects related to increased congestion. If implemented, **Mitigation Measures M-TR-3b, Boarding Improvements, M-TR-3c, Signalization and Intersection Restriping at Townsend/Fifth Streets, and M-TR-3d, Implement Tow-away Transit-only Lanes on Fifth Street**, may potentially reduce peak period transit delays on Muni, Golden Gate Transit, and SamTrans routes operating in the Central SoMa transportation study area; however, the feasibility of these mitigation measures is uncertain, and under 2040 cumulative conditions would not be adequate to mitigate impacts to less-than-significant levels. Therefore, the cumulative transit impact on Muni, Golden Gate Transit, and SamTrans operations would remain *significant and unavoidable with mitigation*.

Summary of Impact C-TR-3

Implementation of the Plan would result in significant cumulative impacts, or contribute considerably to cumulative impacts, on capacity utilization on multiple Muni downtown screenlines and corridors, and Central SoMa cordons and corridors. Under 2040 cumulative conditions, development under the Plan would contribute considerably to BART ridership for travel from the East Bay during the a.m. peak hour and to the East Bay during the p.m. peak hours, and the BART East Bay screenlines would operate at more than the 100 percent capacity utilization standard. All other regional screenlines and transit providers were not projected to exceed the capacity utilization standard under 2040 cumulative conditions. Implementation of the Plan would contribute considerably to cumulative impacts, as a result of increased congestion and transit delay on Muni, Golden Gate Transit, and SamTrans routes that operate within the Central SoMa transportation study area. The feasibility of identified mitigation measures is uncertain and may not be adequate to mitigate cumulative impacts to less-than-significant levels. Therefore, for the above reasons, implementation of the Plan, in combination with past, present and reasonably foreseeable development in San Francisco, would contribute considerably to the *significant and unavoidable with mitigation* cumulative local and regional transit impacts.

Mitigation: Implement **Mitigation Measures M-TR-3a, Transit Enhancements; M-TR-3b, Boarding Improvements; M-TR-3c, Signalization and Intersection Restriping at Townsend/Fifth Streets; and M-TR-3d, Implement Tow-away Transit-only Lanes on Fifth Street**.

Significance after Mitigation: Even with these mitigation measures, this impact would remain *significant and unavoidable with mitigation*.

Cumulative Pedestrian Impacts

Impact C-TR-4: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would contribute considerably to significant cumulative pedestrian impacts. (Significant and Unavoidable with Mitigation)

Pedestrian Safety Hazards Assessment

Between existing and year 2040 cumulative conditions, without and with development under the Plan, the number of pedestrians on the transportation study area crosswalks, sidewalks and corners are anticipated to increase substantially. In addition to increases in pedestrians in the study area, there would be an increase in vehicle and bicycle travel, which would result in an increase in the potential for vehicle-pedestrian and bicycle-pedestrian conflicts at intersections in the study area. The SFMTA is currently implementing a number of projects within the Central SoMa transportation study area including sidewalk widening, new traffic signals, leading pedestrian intervals, continental crosswalks, corner sidewalk extensions, daylighting (i.e., restricting parking adjacent to corners to enhance visibility for pedestrians and drivers at the intersection), and travel lane reductions. Upcoming Vision Zero projects include improvements on streets within Central SoMa, including on Sixth, Seventh, Eighth, Folsom, and Howard Streets. The Plan's proposed street network changes, in combination with other cumulative projects would improve the pedestrian network in Central SoMa and enhance pedestrian safety, including for seniors and persons with disabilities. Thus, under 2040 cumulative conditions, impacts related to cumulative pedestrian safety hazards would be *less than significant*.

Crosswalk, Sidewalk, and Corner Pedestrian LOS Impact Analysis

Future year 2040 cumulative pedestrian volumes were estimated based on cumulative development and growth identified by the Transportation Authority's SF-CHAMP travel demand model, using model output that represents existing conditions and model output for year 2040 cumulative conditions. **Table IV.D-21, Pedestrian Crosswalk Level of Service—Weekday Midday Peak Hour—2040 Cumulative Conditions**, and **Table IV.D-22, Pedestrian Crosswalk Level of Service—Weekday PM Peak Hour—2040 Cumulative Conditions**, present the pedestrian volumes and LOS conditions for the year 2040 cumulative conditions at the crosswalk locations for the weekday midday and p.m. peak hours, respectively. **Table IV.D-23, Pedestrian Sidewalk Level of Service—Weekday Midday Peak Hour**, and **Table IV.D-24, Pedestrian Sidewalk Level of Service—Weekday PM Peak Hour—2040 Cumulative Conditions**, present the pedestrian volumes and LOS conditions for the 2040 cumulative conditions at the sidewalk locations for the weekday midday and p.m. peak hours, respectively. **Table IV.D-25, Pedestrian Corner Level of Service—Weekday Midday Peak Hour—2040 Cumulative Project Conditions**, and **Table IV.D-26, Pedestrian Corner Level of Service—Weekday PM Peak Hour—2040 Cumulative Conditions**, present the pedestrian volumes and LOS conditions for the year 2040 cumulative conditions at the corner locations for the weekday midday and p.m. peak hours, respectively. For the year 2040 cumulative conditions with implementation of the Plan, two scenarios are presented: for conditions with only the additional pedestrian trips generated by only development under the Plan (i.e., the Land Use Plan Only Alternative), and for conditions including development under the Plan with the proposed street network changes. As noted in Impact TR-4 above, the proposed street network changes include signal timing upgrades, sidewalk widening, and corner sidewalk extensions to meet the standards in the *Better Streets Plan*, where possible.

TABLE IV.D-21 PEDESTRIAN CROSSWALK LEVEL OF SERVICE—WEEKDAY MIDDAY PEAK HOUR—2040 CUMULATIVE CONDITIONS

Intersection and Crosswalk Locations	2040 Cumulative No Project			2040 Cumulative plus Land Use Plan Only Alternative (see Section V.I.F, Alternatives)			2040 Cumulative plus Plan ^c		
	Pedestrians	sf/ped ^a	LOS ^b	Pedestrians	sf/ped	LOS	Pedestrians	sf/ped	LOS
Third/Mission									
North	1,951	17	D	2,060	16	D	2,076	19	D
South	2,146	14	E	2,266	13	E	2,283	16	D
East	2,253	12	E	2,379	11	E	2,397	<8	F
West	1,851	19	D	1,954	18	D	1,969	<8	F
Third/Howard									
North	1,312	30	C	1,386	29	C	1,396	32	C
South	1,439	37	C	1,519	35	C	1,531	51	B
East	1,461	19	D	1,543	18	D	1,554	29	C
West	1,379	23	D	1,456	22	D	1,467	<8	F
Fourth/Mission									
North	2,353	14	E	2,485	14	E	2,504	19	D
South	2,795	12	E	2,952	11	E	2,974	15	D
East	3,601	14	E	3,803	13	E	3,831	<8	F
West	3,306	16	D	3,491	15	E	3,517	<8	F
Fourth/Howard									
North	1,344	42	B	1,420	40	C	1,430	41	B
South	1,166	14	E	1,231	13	E	1,240	37	C
East	2,150	29	C	2,270	27	C	2,288	41	B
West	1,244	10	E	1,313	10	E	1,323	12	E
Fourth/Folsom									
North	50	>60	A	76	>60	A	76	>60	A
South	375	34	C	566	21	D	570	>60	A
East	591	24	D	893	15	E	899	18	D
West	449	>60	A	678	>60	A	683	>60	A
Fourth/Harrison									
North	253	>60	A	383	>60	A	385	>60	A
South	253	57	B	383	37	C	385	>60	A
East	889	41	B	1,342	26	C	1,351	25	C
West	41	>60	A	62	>60	A	62	>60	A
Ramp	294	56	B	444	35	C	447	33	C
Fourth/Bryant									
North	32	>60	A	48	>60	A	48	>60	A
South	296	42	B	447	27	C	450	40	B
East	816	19	D	1,232	12	E	1,241	12	E
West	36	>60	A	55	>60	A	55	>60	A
Ramp	12	>60	A	18	>60	A	18	>60	A
Fourth/Brannan									
North	305	>60	A	590	>60	A	595	>60	A
South	356	>60	A	689	44	B	694	42	B
East	650	50	B	1,258	24	D	1,268	32	C
West	424	52	B	822	25	C	828	22	D
Fourth/Townsend									
North	665	40	B	1,287	19	D	1,298	30	C
South	398	>60	A	771	39	C	777	30	C
East	664	43	B	1,285	21	D	1,295	27	C
West	670	19	D	1,298	9	E	1,308	<8	F
Fourth/King									
North	412	>60	A	798	35	C	804	35	C
South	615	53	B	1,192	25	C	1,201	25	C
East	1,021	53	B	1,976	26	C	1,992	26	C
West	1,055	48	B	2,043	24	D	2,059	23	D

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

- Square feet per pedestrian. Inputs into this metric include signal cycle length, pedestrian green time, crosswalk square footage, and pedestrian volumes. Changes to any of these inputs across the scenarios (e.g. change in signal cycle from 60 to 90 seconds) lead to changes in the metric value and the resulting LOS.
- Shaded indicates cumulatively considerable contribution from the Plan or the Land Use Plan Only Alternative.
- With Plan analysis assumes that crosswalks would be widened to width of adjacent sidewalks, and travel lane and signal control changes would be implemented.

TABLE IV.D-22 PEDESTRIAN CROSSWALK LEVEL OF SERVICE—WEEKDAY PM PEAK HOUR—2040 CUMULATIVE CONDITIONS

Intersection and Crosswalk Locations	2040 Cumulative No Project			2040 Cumulative plus Land Use Plan Only Alternative (see Section V.I.F, Alternatives)			2040 Cumulative plus Plan ^c		
	Pedestrians	sf/ped ^a	LOS ^b	Pedestrians	sf/ped	LOS	Pedestrians	sf/ped	LOS
Third/Mission									
North	2,098	16	D	2,215	15	D	2,232	18	D
South	1,316	25	C	1,390	23	D	1,400	28	C
East	2,198	15	D	2,321	14	E	2339	<8	F
West	1,772	20	D	1,872	19	D	1866	<8	F
Third/Howard									
North	948	44	B	1,002	41	B	9	47	B
South	1,063	56	B	1,123	52	B	1,131	77	A
East	1,714	18	D	1,810	17	D	1,824	27	C
West	1,511	25	C	1,596	24	D	1,608	<8	F
Fourth/Mission									
North	2,259	15	D	2,385	11	E	2,403	20	D
South	2,914	11	E	3,077	8	E	3,100	15	E
East	4,771	10	E	5,037	8	F	5,076	<8	F
West	3,872	13	E	4,089	10	E	4,120	<8	F
Fourth/Howard									
North	1,196	50	B	1,263	47	B	1,272	46	B
South	878	20	D	927	19	D	931	51	B
East	2,534	21	D	2,676	20	D	2,696	34	C
West	1,212	11	E	1,280	10	E	1,289	12	E
Fourth/Folsom									
North	44	>60	A	66	>60	A	67	>60	A
South	373	28	C	563	18	D	567	>60	A
East	977	13	E	1,495	<8	F	1,485	10	E
West	491	>60	A	742	>60	A	747	>60	A
Fourth/Harrison									
North	335	>60	A	506	>60	A	510	>60	A
South	335	42	B	506	27	C	510	49	B
East	1,436	21	D	2,169	13	E	2,184	12	E
West	32	>60	A	48	>60	A	48	>60	A
Ramp	367	43	B	554	27	C	558	25	C
Fourth/Bryant									
North	29	>60	A	44	>60	A	44	>60	A
South	312	55	B	472	35	C	475	53	B
East	1,400	10	E	2,114	<8	F	2,129	<8	F
West	53	>60	A	80	>60	A	81	>60	A
Ramp	23	>60	A	34	>60	A	35	>60	A
Fourth/Brannan									
North	640	51	B	1,239	24	D	1,249	23	D
South	525	49	B	1,016	23	D	1,024	23	D
East	937	39	C	1,814	18	D	1,828	24	D
West	870	30	C	1,684	14	E	1,697	12	E
Fourth/Townsend									
North	806	51	B	1,561	24	D	1,574	38	C
South	1,045	36	C	2,024	17	D	2,040	12	E
East	775	46	B	1,500	21	D	1,512	28	C
West	2,087	<8	F	4,040	<8	F	4,072	<8	F
Fourth/King									
North	1,158	27	C	2,242	12	E	2,260	12	E
South	1,089	28	C	2,109	13	E	2,126	13	E
East	989	42	B	1,915	20	D	1,930	20	D
West	2,634	20	D	5,099	9	E	5,139	9	E

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

- Square feet per pedestrian. Inputs into this metric include signal cycle length, pedestrian green time, crosswalk square footage, and pedestrian volumes. Changes to any of these inputs across the scenarios (e.g. change in signal cycle from 60 to 90 seconds) lead to changes in the metric value and the resulting LOS.
- Shaded** indicates cumulatively considerable contribution from the Plan or the Land Use Plan Only Alternative.
- With Plan analysis assumes that crosswalks would be widened to width of adjacent sidewalks, and travel lane and signal control changes would be implemented.

TABLE IV.D-23 PEDESTRIAN SIDEWALK LEVEL OF SERVICE—WEEKDAY MIDDAY PEAK HOUR—2040 CUMULATIVE CONDITIONS

Intersection and Sidewalk Location	2040 Cumulative No Project			2040 Cumulative plus Land Use Plan Only Alternative (see Section V.IF, Alternatives)			2040 Cumulative plus Plan ^c		
	Pedestrians	ped/min/ft ^a	LOS ^b	Pedestrians	ped/min/ft	LOS	Pedestrians	ped/min/ft	LOS
Fourth Street between Market and Mission^d									
West	2,529	7.7	D	3,821	11.7	E	3,847	4.5	C
East	2,135	4.1	C	3,225	6.2	D	6,247	4.6	C
Fourth Street between Mission and Howard^e									
West	1,011	1.9	B	5,128	2.8	B	1,538	1.6	B
East	3,407	12.5	E	5,147	>18	F	5,182	4.1	C
Fourth Street between Folsom and Harrison^f									
West	270	0.6	B	408	0.9	B	410	0.6	B
East	1,359	3.3	C	2,052	5.1	C	2,066	3.1	C
Fourth Street between Bryant and Brannan^g									
West	185	0.5	B	359	1.0	B	362	1.0	B
East	385	1.1	B	745	2.1	B	751	2.1	B
Fourth Street between Brannan and Townsend^g									
West	367	0.9	B	710	1.8	B	716	1.8	B
East	580	1.5	B	1,122	3.0	B	1,131	3.0	C

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

- Pedestrians per foot per minute.
- Shaded indicates cumulatively considerable contribution from the Plan or the Land Use Plan Only Alternative.
- With Plan analysis assumes that sidewalks on one or both sides of the street would be widened by about five feet between Market and Harrison Streets as detailed below. Analysis assumes implementation of Howard/Folsom One-Way Option, although pedestrian conditions under the Howard/Folsom Two-Way Option would be similar.
- On Fourth Street between Market and Mission Streets, with the proposed street network improvements, the west sidewalk would be widened from 10 to 17.5 feet, and the east sidewalk would remain the same as under existing conditions.
- On Fourth Street between Mission and Howard Streets, with the proposed street network improvements, the west sidewalk would be widened from 18 to 20 feet, and the east sidewalk would be widened from 12 to 25 feet.
- On Fourth Street between Folsom and Harrison Streets, with the proposed street network improvements, the west sidewalk would be widened from 12 to 17 feet, and the east sidewalk would be widened from 10 to 15 feet.
- On Fourth Street between Bryant and Brannan Streets, and between Brannan and Townsend Streets, the west and east sidewalks would remain the same as under existing conditions.

**TABLE IV.D-24 PEDESTRIAN SIDEWALK LEVEL OF SERVICE — WEEKDAY PM PEAK HOUR — 2040
CUMULATIVE CONDITIONS**

Intersection and Sidewalk Location	2040 Cumulative No Project			2040 Cumulative plus Land Use Plan Only Alternative (see Section V.IF, Alternatives)			2040 Cumulative plus Plan ^c		
	Pedestrians	ped/ min/ft ^a	LOS ^b	Pedestrians	ped/ min/ft	LOS	Pedestrians	ped/ min/ft	LOS
Fourth Street between Market and Mission^d									
West	2,801	8.6	D	4,231	12.8	E	4,259	5.0	C
East	3,107	6.0	C	4,693	9.0	D	4,725	6.7	D
Fourth Street between Mission and Howard^e									
West	1,136	2.1	B	1,716	3.1	C	1,727	1.8	B
East	2,921	10.7	D	4,412	16.1	E	4,442	3.5	C
Fourth Street between Folsom and Harrison^f									
West	240	0.6	B	362	1.0	B	364	0.7	B
East	1,638	3.7	C	2,474	5.6	C	2,491	3.5	C
Fourth Street between Bryant and Brannan^g									
West	492	1.3	B	952	2.4	B	960	2.5	B
East	1,028	2.6	B	1,990	5.1	C	2,005	5.1	C
Fourth Street between Brannan and Townsend^g									
West	1,295	3.3	C	2,508	6.3	D	2,528	6.4	D
East	740	2.1	B	1,434	4.1	C	1,445	4.2	C

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

- Pedestrians per foot per minute.
- Shaded indicates cumulatively considerable contribution from the Plan or the Land Use Plan Only Alternative.
- With Plan analysis assumes that sidewalks on one or both sides of the street would be widened by about five feet between Market and Harrison Streets as detailed below. Analysis assumes implementation of Howard/Folsom One-Way Option, although pedestrian conditions under the Howard/Folsom Two-Way Option would be similar.
- On Fourth Street between Market and Mission Streets, with the proposed street network improvements, the west sidewalk would be widened from 10 to 17.5 feet, and the east sidewalk would remain the same as under existing conditions.
- On Fourth Street between Mission and Howard Streets, with the proposed street network improvements, the west sidewalk would be widened from 18 to 20 feet, and the east sidewalk would be widened from 12 to 25 feet.
- On Fourth Street between Folsom and Harrison Streets, with the proposed street network improvements, the west sidewalk would be widened from 12 to 17 feet, and the east sidewalk would be widened from 10 to 15 feet.
- On Fourth Street between Bryant and Brannan Streets, and between Brannan and Townsend Streets, the west and east sidewalks would remain the same as under existing conditions.

**TABLE IV.D-25 PEDESTRIAN CORNER LEVEL OF SERVICE — WEEKDAY MIDDAY PEAK HOUR — 2040
CUMULATIVE PROJECT CONDITIONS**

Intersection and Corner Locations	2040 Cumulative No Project			2040 Cumulative plus Land Use Plan Only Alternative (see Section V.IF, Alternatives)			2040 Cumulative plus Plan ^c		
	Pedestrians	sf/ped ^a	LOS ^b	Pedestrians	sf/ped	LOS	Pedestrians	sf/ped	LOS
Third/Mission									
Northwest	4,182	<2	F	4,916	<2	F	4,450	6	C
Northeast	4,624	<2	F	4,883	<2	F	4,920	6	D
Southwest	4,397	<2	F	4,643	<2	F	4,678	4	D
Southeast	4,839	<2	F	5,109	<2	F	5,148	4	D
Third/Howard									
Northwest	2,960	>13	A	3,125	>13	A	3,149	>13	A
Northeast	3,050	>13	A	3,221	>13	A	3,246	>13	A
Southwest	3,099	>13	A	3,272	>13	A	3,297	>13	A
Southeast	3,190	<2	F	3,368	<2	F	3,794	>13	A
Fourth/Mission									
Northwest	6,225	8	C	6,573	7	C	6,623	>13	A
Northeast	6,550	>13	A	6,916	>13	A	6,969	9	C
Southwest	6,711	>13	A	7,086	>13	A	7,140	>13	A
Southeast	7,036	<2	F	7,430	<2	F	7,486	12	B
Fourth/Howard									
Northwest	2,847	>13	A	3,006	>13	A	3,029	>13	A
Northeast	3,844	>13	A	4,059	>13	A	4,090	>13	A
Southwest	2,650	>13	A	2,799	>13	A	2,820	>13	A
Southeast	3,647	<2	F	3,851	<2	F	3,881	>13	A
Fourth/Folsom									
Northwest	549	>13	A	829	>13	A	835	>13	A
Northeast	706	>13	A	1,066	>13	A	1,073	>13	A
Southwest	906	>13	A	1,368	>13	A	1,377	>13	A
Southeast	1,063	>13	A	1,605	>13	A	1,616	>13	A
Fourth/Harrison									
Northwest	324	>13	A	489	>13	A	492	>13	A
Northeast	1,256	>13	A	1,887	>13	A	1,910	>13	A
Southwest	324	>13	A	489	12	B	492	>13	A
Southeast	1,256	>13	A	1,897	>13	A	1,910	>13	A
Fourth/Bryant									
Northwest	75	>13	A	113	>13	A	114	>13	A
Northeast	932	>13	A	1,408	>13	A	1,418	>13	A
Southwest	365	>13	A	552	>13	A	556	>13	A
Southeast	1,223	>13	A	1,847	7	C	1,859	>13	A
Fourth/Brannan									
Northwest	802	>13	A	1,554	>13	A	1,566	>13	A
Northeast	1,050	>13	A	2,033	12	B	2,050	>13	A
Southwest	858	>13	A	1,662	>13	A	1,675	>13	A
Southeast	1,106	>13	A	2,142	>13	A	2,159	>13	A
Fourth/Townsend									
Northwest	1,469	>13	A	2,844	>13	A	2,866	>13	A
Northeast	1,461	>13	A	2,829	>13	A	2,852	>13	A
Southwest	1,176	>13	A	2,276	>13	A	2,294	>13	A
Southeast	1,168	>13	A	2,262	>13	A	2,280	>13	A
Fourth/King									
Northwest	1,614	>13	A	3,125	>13	A	3,150	>13	A
Northeast	1,576	>13	A	3,052	>13	A	3,076	>13	A
Southwest	1,838	>13	A	3,558	>13	A	3,586	>13	A
Southeast	1,800	>13	A	3,485	>13	A	3,512	>13	A

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

a. Square feet per pedestrian.

b. Shaded indicates cumulatively considerable contribution from the Plan or the Land Use Plan Only Alternative.

c. With Plan analysis assumes that sidewalks would be widened to width of adjacent sidewalks, and travel lane and signal control changes would be implemented.

TABLE IV.D-26 PEDESTRIAN CORNER LEVEL OF SERVICE—WEEKDAY PM PEAK HOUR—2040 CUMULATIVE CONDITIONS

Intersection and Corner Locations	2040 Cumulative No Project			2040 Cumulative plus Land Use Plan Only Alternative (see Section V.I.F, Alternatives)			2040 Cumulative plus Plan ^c		
	Pedestrians	sf/ped ^a	LOS ^b	Pedestrians	sf/ped	LOS	Pedestrians	sf/ped	LOS
Third/Mission									
Northwest	4,257	<2	F	4,496	<2	F	4,530	6	C
Northeast	4,726	<2	F	4,990	<2	F	5,028	6	C
Southwest	3,398	<2	F	3,588	<2	F	3,615	8	C
Southeast	3,866	<2	F	4,082	<2	F	4,113	7	C
Third/Howard									
Northwest	2,706	>13	A	2,857	>13	A	2,879	>13	A
Northeast	2,929	>13	A	3,093	>13	A	3,116	>13	A
Southwest	2,832	>13	A	2,990	>13	A	3,013	>13	A
Southeast	3,055	<2	F	3,226	<2	F	3,250	>13	A
Fourth/Mission									
Northwest	6,744	8	C	7,121	8	C	7,176	>13	A
Northeast	7,732	>13	A	8,165	>13	A	8,227	9	C
Southwest	7,465	11	B	7,882	10	B	7,942	11	B
Southeast	8,453	<2	F	8,926	<2	F	8,994	8	C
Fourth/Howard									
Northwest	2,648	>13	A	2,796	>13	A	2,818	>13	A
Northeast	4,103	>13	A	4,332	>13	A	4,365	>13	A
Southwest	2,299	>13	A	2,428	>13	A	2,446	>13	A
Southeast	3,753	<2	F	3,963	<2	F	3,993	>13	A
Fourth/Folsom									
Northwest	589	>13	A	889	>13	A	895	>13	A
Northeast	1,123	>13	A	1,696	>13	A	1,707	>13	A
Southwest	951	>13	A	1,436	>13	A	1,446	>13	A
Southeast	1,485	>13	A	2,242	>13	A	2,258	>13	A
Fourth/Harrison									
Northwest	404	>13	A	610	11	B	614	>13	A
Northeast	1,948	>13	A	2,943	>13	A	2,963	>13	A
Southwest	404	>13	A	610	8	C	614	>13	A
Southeast	1,948	>13	A	2,943	5	D	2,963	>13	A
Fourth/Bryant									
Northwest	90	>13	A	136	>13	A	137	>13	A
Northeast	1,571	>13	A	2,373	12	B	2,390	>13	A
Southwest	402	>13	A	607	>13	A	611	12	B
Southeast	1,883	3	D	2,845	<2	F	2,864	>13	A
Fourth/Brannan									
Northwest	1,661	>13	A	3,215	12	B	3,241	>13	A
Northeast	1,735	>13	A	3,359	6	D	3,385	>13	A
Southwest	1,534	>13	A	2,970	3	D	2,993	12	B
Southeast	1,608	>13	A	3,113	5	D	3,138	>13	A
Fourth/Townsend									
Northwest	3,182	>13	A	6,162	4	D	6,211	4	D
Northeast	1,739	>13	A	3,368	>13	A	3,394	>13	A
Southwest	3,445	>13	A	6,671	>13	A	6,724	>13	A
Southeast	2,002	>13	A	3,877	>13	A	3,907	>13	A
Fourth/King									
Northwest	4,171	>13	A	8,075	>13	A	8,139	>13	A
Northeast	2,362	>13	A	4,573	>13	A	4,609	>13	A
Southwest	4,095	>13	A	7,929	3	D	7,992	3	D
Southeast	2,286	>13	A	4,427	>13	A	4,462	>13	A

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

- Square feet per pedestrian.
- Shaded indicates cumulatively considerable contribution from the Plan or the Land Use Plan Only Alternative.
- With Plan analysis assumes that sidewalks would be widened to width of adjacent sidewalks, and travel lane and signal control changes would be implemented.

Crosswalks. As described in Impact TR-4 for existing plus Plan conditions, implementation of the Plan would result in project-specific pedestrian impacts at one or more crosswalks at the intersections of Third/Mission, Fourth/Mission, Fourth/Brannan, Fourth/Townsend, and Fourth/King, and these impacts would also be considered significant cumulative pedestrian impacts of the Plan. Under year 2040 cumulative conditions, the Plan would contribute considerably to significant cumulative pedestrian impacts at one or more crosswalks at the intersections of Third/Mission, Third/Howard, Fourth/Mission, Fourth/Howard, Fourth/Folsom, Fourth/Harrison, Fourth/Bryant, Fourth/Brannan, Fourth/Townsend, and Fourth/King during the midday and/or p.m. peak hours. As noted in Table IV.D-21 and Table IV.D-22, implementation of the proposed street network changes would eliminate year 2040 cumulative No Project LOS E or LOS F conditions at the south crosswalk at the intersection of Third/Mission, at the north and south crosswalks at the intersection of Fourth/Mission, and at the south crosswalk at the intersection of Fourth/Howard during the midday peak hour. The proposed signal timing changes would result in a cumulative impact at the west crosswalks at the intersections of Third/Mission and Third/Howard, and at the south crosswalk at the intersection of Fourth/Townsend.

Implementation of **Mitigation Measure M-TR-4, Upgrade Central SoMa Crosswalks**, would improve the crosswalk LOS operating conditions at the four intersections of Third/Mission, Fourth/Mission, Fourth/Brannan, and Fourth/Townsend to LOS D or better under existing plus Plan conditions. However, under 2040 cumulative conditions, the cumulative pedestrian crosswalk impacts at these four intersections and at crosswalks at the intersections of Third/Howard, Fourth/Howard, Fourth/Folsom, Fourth/Harrison, Fourth/Bryant, Fourth/Brannan, and Fourth/King, would require additional crosswalk widening. Because the feasibility of the crosswalk widening beyond the current width and those identified in Mitigation Measure M-TR-4 is uncertain due to roadway or other physical constraints (e.g., presence of bus stops or platforms), the cumulative pedestrian impacts at the crosswalks at these ten intersections would remain *significant and unavoidable with mitigation*. One or more crosswalks at the intersections of Third/Mission, Fourth/Mission, Fourth/Townsend, and Fourth/King would require crosswalks greater than 40 feet, which would not be feasible at these locations. Therefore implementation of the Plan would contribute considerably to significant and unavoidable cumulative pedestrian impacts at one or more crosswalks at the intersections of Third/Mission, Third/Howard, Fourth/Mission, Fourth/Howard, Fourth/Folsom, Fourth/Harrison, Fourth/Brannan, Fourth/Bryant, Fourth/Townsend, and Fourth/King, and cumulative pedestrian crosswalk impacts would be *significant and unavoidable with mitigation*.

Sidewalks. As shown on Table IV.D-23 and Table IV.D-24, under 2040 cumulative conditions with development under the Plan and the proposed street network changes, pedestrian LOS at the study sidewalks would remain similar to or improve over cumulative No Project conditions. With implementation of the proposed sidewalk widening as part of the Plan street network changes, the LOS for all study sidewalks would be LOS D or better, and 2040 cumulative pedestrian sidewalk impacts would be *less than significant*.

Corners. As shown on Table IV.D-25 and Table IV.D-26, under 2040 cumulative conditions with development under the Plan and the proposed street network changes (including sidewalk widening), all corners would operate at LOS D or better during the midday and p.m. peak hours, and 2040 cumulative pedestrian corner impacts would be *less than significant*.

Overall, implementation of the Plan, in combination with past, present and foreseeable development in San Francisco, would contribute to cumulative pedestrian impacts at multiple crosswalk locations that could not

be mitigated to less-than-significant levels, and cumulative pedestrian impacts would be *significant and unavoidable with mitigation*.

Mitigation: Implement Mitigation Measure M-TR-4, Upgrade Central SoMa Crosswalks.

Significance after Mitigation: Even with mitigation, impacts would remain *significant and unavoidable*.

Cumulative Bicycle Impacts

Impact C-TR-5: Development under the Plan, including the proposed open space improvements and the street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in cumulative bicycle impacts. (Less than Significant)

The Plan includes improvements to existing bicycle facilities on Howard and Folsom Streets, and provides new protected cycle tracks on Brannan, Third, and Fourth Streets. These improvements would be in addition to the planned bicycle lanes on Fifth Street that would be consistent with the adopted *Bicycle Plan* (design of facility on Fifth Street is being developed by SFMTA), as well as other bicycle facility improvements included as part of Vision Zero projects. These bicycle improvements would enhance cycling conditions within the transportation study area. As bicycling continues to increase throughout San Francisco, the number of bicyclists on the transportation study area bicycle routes and lanes is also anticipated to increase. While there would be a general increase in vehicle traffic that is expected through the future 2040 cumulative conditions, development under the Plan and/or the proposed street network changes would not create potentially hazardous conditions for bicycles, or otherwise interfere with bicycle accessibility to the transportation study area and adjoining areas, or substantially affect the existing, planned, and proposed bicycle facilities in Central SoMa. If implemented, **Improvement Measures I-TR-5a, Cycle Track Public Education Campaign, and I-TR-5b, Cycle Track Post-Implementation Surveys**, would further reduce potential, less-than-significant conflicts between bicyclists and pedestrians, transit, trucks, and autos. Therefore, for the above reasons, implementation of the Plan, in combination with past, present and reasonably foreseeable development in San Francisco, would result in *less-than-significant* cumulative impacts on bicyclists.

Mitigation: None required.

Cumulative Loading Impacts

Impact C-TR-6: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would contribute considerably to significant cumulative loading impacts. (Significant and Unavoidable with Mitigation)

Commercial vehicle and passenger loading/unloading impacts are by their nature localized and site-specific, and generally would not contribute to impacts from other development projects outside of the Central SoMa Plan Area. However, as described in Impact TR-6, to the extent that loading demand associated with development under the Plan is not accommodated on-site, or could not be accommodated within existing or

new on-street commercial loading spaces, double-parking, illegal use of sidewalks and other public space is likely to occur with associated disruptions and impacts to traffic and transit operations, as well as to bicyclists and pedestrians. Thus, development under the Plan in combination with street network changes associated with other cumulative projects, such as the Transit Center District Plan or the Second Street Improvement Project to the east, the Sixth Street Improvement project to the west, and the Muni Forward Travel Time Reduction Proposal (TTRP) project on Mission Street to the north, could result in cumulative loading impacts. The cumulative impact related to the loss of on-street commercial loading spaces as a result of the various street network projects would depend on the number of commercial loading spaces that would be eliminated, the location of the spaces, the availability of alternate locations to accommodate loading/unloading activities, and whether the loss of loading would result in potentially hazardous conditions or significant delays affecting transit, traffic, bicycles, or pedestrians. In situations where large amounts of commercial loading spaces are removed, where loading demand cannot be reasonably accommodated within existing nearby spaces, and roadway right-of-way is constrained such that a potential hazardous condition is created or significant delay affecting transit, bicycles, or pedestrians occurs, potential significant cumulative impacts to loading may result, and development under the Plan would contribute considerably to these significant cumulative impacts.

Implementation of the Plan's street network changes would also contribute considerably to the significant cumulative impact on loading. The proposed street network changes would result in the permanent removal of about 60 on-street commercial loading spaces, and access to about 70 on-street commercial loading spaces would be restricted during peak periods. A small portion of the permanent and peak period reduction in commercial loading spaces would be offset by new commercial loading spaces that could be installed within recessed commercial loading bays within the sidewalks. In addition, some commercial loading spaces could be relocated to the other side of the street where on-street parking would be maintained, however, these spaces may not be in proximity to the need for these spaces. The permanent and peak period removal of on-street commercial loading spaces would require existing delivery and service vehicles using these spaces to seek alternative locations, particularly during the morning peak period when commercial deliveries are greatest, and would also result in fewer on-street loading spaces being available for future development. Even with implementation of **Mitigation Measures M-TR-6a, Driveway and Loading Operations Plan**, and **M-TR-6b, Accommodation of On-Street Commercial Loading Spaces and Passenger Loading/Unloading Zones**, it is anticipated that the development under the Plan and the street network changes could result in double-parking along streets that could adversely affect local vehicular, transit, and bicycle circulation, particularly where protected transit and bicycle facilities are not provided, and lead to congestion and delays. These conditions would worsen with cumulative projects that also remove on-street commercial loading spaces (such as the Transit Center District Plan, the Second Street Improvement Project, the Sixth Street Improvement Project, the Muni Forward TTRP project on Mission Street noted above), and increase in loading demand associated with development projects outside of the proposed rezoning area but on streets affected by the Plan's proposed street network changes. Therefore, for the above reasons, implementation of the Plan, in combination with past, present and reasonably foreseeable development in San Francisco, would result in *significant and unavoidable with mitigation* cumulative commercial vehicle loading impacts.

Similar to commercial loading spaces, the design of the Plan's street network changes would consider the potential relocation of passenger loading/unloading zones, particularly those serving the hotel and Moscone Center uses on Third and Fourth Streets, and the Bessie Carmichael School/Filipino Education Center on

Harrison Street between Fourth and Fifth Streets. The need for and location of passenger loading/unloading zones on study area streets could be affected by nearby development outside of Central SoMa that would also contribute to cumulative passenger loading/unloading impacts. Implementation of **Mitigation Measure M-TR-6b: Accommodation of On-Street Commercial Loading Spaces and Passenger Loading/Unloading Zones**, would serve to ensure that existing and future passenger loading/unloading needs are accommodated. However, the feasibility of providing replacement passenger loading/unloading zones cannot be assured in every situation, and the Plan's impact on passenger loading/unloading operations was determined to be significant and unavoidable under existing plus Plan conditions. As described in Impact TR-6 above, the impacts of inadequate passenger loading/unloading zones could result in double-parking along streets that could adversely affect local vehicular, transit, and bicycle circulation, particularly where protected transit and bicycle facilities are not provided, and lead to congestion and delays, and could worsen with nearby cumulative projects. Therefore, for the above reasons, implementation of the Plan, in combination with past, present and reasonably foreseeable development in San Francisco, would result in *significant and unavoidable* cumulative passenger loading/unloading impacts with mitigation.

Mitigation: Implement **Mitigation Measure M-TR-6a, Driveway and Loading Operations Plan**, and **Mitigation Measure M-TR-6b: Accommodation of On-Street Commercial Loading Spaces and Passenger Loading/Unloading Zones**.

Significance after Mitigation: Even with these mitigation measures, this impact would remain *significant and unavoidable with mitigation*.

Cumulative Parking Impacts

Impact C-TR-7: Development under the Plan, including the proposed open space improvements and the street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in cumulative parking impacts. (Less than Significant)

Over time, due to the land use development and increased density anticipated within the city, parking demand and competition for on-street and off-street parking is likely to increase. As described in Impact TR-7, the new off-street parking supply provided as part of development projects within Central SoMa would not be expected to accommodate the projected parking demand, and would result in a shortfall in parking spaces that would need to be accommodated in other off-street public parking facilities and on-street. Other cumulative development projects would further increase the projected parking shortfall. Additionally, through the implementation of the City's Transit First Policy, the City's *Better Streets Plan*, Vision Zero projects, and related projects, on-street parking spaces may be further removed to promote sustainable travel modes and sustainable street designs including cycle tracks, bicycle lanes, transit bulbs, and corner bulb-outs. These projects would encourage transit use through the reduction of transit travel time and increase of transit reliability, and would encourage bicycle use through provision of separate bicycle facilities that would offer a higher level of security than bicycle lanes and would be attractive to a wider spectrum of the public. The Plan's proposed street network changes include peak period and permanent removal of on-street parking on Howard, Folsom, Brannan, Bryant, Third, and Fourth Streets. The parking demand associated with development and displaced through on-street parking removal would need to be accommodated within on-site facilities, and in nearby public parking facilities, and, as a result, the midday and overnight on-street and

off-street parking occupancy in the study area would increase. Under 2040 cumulative conditions, within Central SoMa, 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, may induce drivers to shift to other modes of travel, or change their overall travel habits. Implementation of **Mitigation Measure M-NO-1a, TDM Plan for Development Projects**, may further lead to a mode shift from private passenger vehicles to transit or other modes of travel. As noted in section “Regulatory Framework” above, the Planning Department is currently pursuing an ordinance amending the *Planning Code* to establish a citywide TDM Program. Resolution 19628 of intent to initiate these *Planning Code* amendments was approved by the Planning Commission on August 4, 2016. If the proposed *Planning Code* amendments are legislated by the Board of Supervisors, all cumulative development projects within San Francisco would be subject to the requirements of the TDM Program.

Under 2040 cumulative conditions, it is anticipated that on-street parking management would be active within the Central SoMa Plan Area. As noted in Impact TR-7 above, the SFMTA and the U.S. Department of Transportation are currently evaluating the data collected as part of the *SFpark* pilot program. Implementation of *SFpark* would include on-street parking management to facilitate short-term parking and reduce the around-the-block maneuvers associated with drivers searching for parking, and discourage long-term on-street parking to support a shift in travel from auto to public transit or other modes. In addition, it is anticipated that the pilot program to use on-street parking spaces as carshare spaces would be active in Central SoMa under 2040 cumulative conditions.

Considering the location in the downtown area with multiple alternative public parking facilities and travel modes available (including local and regional transit, bicycling, and walking), proposed improvements to the transit, pedestrian, and bicycle network, the cumulative increase in parking demand as part of new development and associated parking shortfall, and on-street parking loss in the Central SoMa vicinity as a result of the proposed street network changes would not be considered substantial, nor would the on-street parking loss be expected to result in hazardous conditions such as impairing visibility on narrow streets (e.g., at midblock alleys), blocking sidewalks or crosswalks, or blocking access to fire hydrants. Discussion of potential hazards such as double-parking, illegal use of sidewalks and other public space that could result from removal of on-street commercial or passenger loading spaces is provided in Impact C-TR-6 above.

Therefore, for the above reasons, implementation of the Plan, in combination with past, present and reasonably foreseeable development in San Francisco, would result in *less-than-significant* cumulative impacts on parking.

Mitigation: None required.

Cumulative Emergency Vehicle Access Impacts

Impact C-TR-8: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, could contribute considerably to significant cumulative emergency vehicle access impacts. (Less than Significant with Mitigation)

Implementation of the Plan could contribute considerably to cumulative emergency vehicle access conditions in Central SoMa. Cumulative growth in housing and employment within Central SoMa and San Francisco would result in an increased demand of emergency response calls, and would also increase the number of vehicles on Central SoMa streets, and result in increased vehicle delays. As described above, a number of cumulative projects would affect the street network in the vicinity of Central SoMa, however, none of these projects would introduce physical barriers that would preclude emergency vehicle access. The Plan's proposed street network changes, in combination with street network changes of other cumulative projects noted above, would result in fewer mixed-flow travel lanes on a number of study area streets, which would reduce the available capacity for vehicles, and would thereby increase the number of vehicles in the remaining travel lanes and result in additional vehicle delay on these streets. As described in Impact TR-8 for existing plus Plan conditions, a number of the Plan's street network changes would also reduce the available roadway width available for drivers to pull over to allow emergency vehicles to pass as these street network changes include barriers between the mixed-flow travel lanes and adjacent transit-only lanes or cycle tracks. Emergency vehicle providers may need to adjust travel routes to respond to incidents, and would be subject to increased congestion associated with cumulative development and street network changes. Thus, as under existing plus Plan conditions, under 2040 cumulative conditions, the increased number of vehicles in the remaining mixed-flow travel lanes and increased levels of traffic congestion would occasionally impede emergency vehicle access in the transportation study area during peak periods of peak traffic volumes, resulting in significant cumulative impacts on emergency vehicle access. Development under the Plan and the proposed street network changes would contribute considerably to these significant cumulative impacts on emergency vehicle access.

Implementation of **Mitigation Measure M-TR-8, Emergency Vehicle Access Consultation**, would reduce the Plan's potential to delay emergency vehicles within Central SoMa. As described in Impact TR-7, this mitigation measure would require that final design of each street network projects be reviewed by the San Francisco Fire Department and the San Francisco Police Department to ensure that private vehicles would not be precluded from yielding the right-of-way to approaching emergency vehicles. **Mitigation Measure M-TR-8, Emergency Vehicle Access Consultation**, would mitigate cumulative impacts on emergency vehicle access to a less-than-significant level. Therefore, for the above reasons, implementation of the Plan, in combination with past, present and reasonably foreseeable development in San Francisco, would result in *less-than-significant with mitigation* cumulative emergency vehicle access impacts.

Mitigation: Implement **Mitigation Measure M-TR-8, Emergency Vehicle Access Consultation**.

Significance after Mitigation: Implementation of **Mitigation Measure M-TR-8** would ensure that the significant cumulative emergency vehicle access impact would be reduced to a *less-than-significant* level.

Construction-Related Transportation Impacts

Impact C-TR-9: Development under the Plan, including the proposed open space improvements and the street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in significant cumulative construction-related transportation impacts. (Less than Significant)

Construction of proposed development under the Plan, the street network changes, and streetscape improvements may overlap with the construction of other cumulative projects, including, among others, the Moscone Center Expansion, 706 Mission Street, 250 Fourth Street, and the 942 Mission Street projects for which building permits have already been approved and/or are under construction, and the 5M Project which has been approved, although the timing of construction is not currently known. The Central Subway project, including the Central Subway Moscone Station on Fourth Street between Clementina and Folsom Streets, is currently under construction, and construction is anticipated to be completed by 2017 (and revenue service initiated in 2019). Other cumulative transportation projects include Muni Forward and Vision Zero projects which include a number of ongoing and planned/proposed changes to the transportation network, and the proposed Better Market Street.

The combined impacts of implementation of the Plan, in combination with construction of other projects outside of the Plan Area would not result in significant cumulative construction-related transportation impacts for the following reasons:

- Many of the identified cumulative projects are currently underway, and/or will be completed in the near term, prior to initiation of construction of development projects, open space improvements, or transportation projects under the Plan.
- Transportation-related construction impacts are typically located in the immediate vicinity of the construction activities, and are of limited duration (e.g., typically two to three years for development projects, and one to two years for street network changes).
- There are no forecasted development, open space, or transportation projects in the vicinity of the Plan Area that would overlap in location and schedule, so as to result in significant disruptions to traffic, transit, pedestrians, or bicyclists.

Therefore, for the above reasons, development under the Plan with the proposed street network changes, in combination with past, present and reasonably foreseeable development in San Francisco, would result in *less-than-significant* cumulative construction-related transportation impacts.

Mitigation: None required.

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IV.E Noise and Vibration

IV.E.1 Introduction

This section evaluates the potential noise and vibration impacts associated with construction of subsequent development projects and changes in traffic noise levels due to development resulting from implementation of the Central SoMa Plan and from proposed changes to the Plan Area street network. The study area for noise impacts is generally the same as for transportation impacts bounded by Market, Second, King and Sixth Streets (see Figure IV.D-1, Transportation Study Area, in Section IV.D, Transportation and Circulation). Some of the proposed streetscape improvements extend beyond the area of proposed land use changes, and because some transportation noise effects of the proposed land use program may extend beyond the area to be rezoned, the study area for noise impacts was expanded beyond the Plan Area boundaries. The study area also extends to Mission, 12th, and Bryant Streets on the west, and Folsom Street, The Embarcadero, and Bryant Street on the east, and Market, Second, and Sixth Streets on the north.

This section characterizes the existing noise environment in the Study Area based on noise measurements collected in the area and citywide modeling of traffic noise, describes relevant noise standards and guidelines, identifies sensitive receptors, and evaluates construction and operational noise, including changes in traffic noise levels, resulting from both development allowed by the Plan and from the proposed street network changes (both within and outside the Plan Area), as well as from cumulative development generating traffic on Plan Area streets.

IV.E.2 Environmental Setting

Sound Descriptors

Decibel

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 at which it travels, and the pressure level or energy content of a given sound. The sound pressure level is the most common descriptor used to characterize the loudness of an ambient sound, and the decibel (dB) scale is used to quantify sound intensity. Because sound can vary in intensity by over one million times within the range of human hearing, a logarithmic loudness scale is used to keep sound intensity numbers at a convenient and understandable level. Since the human ear is not equally sensitive to all sound frequencies within the entire spectrum, human response is factored into sound descriptions in a process called “A-weighting,” expressed as “dBA.” The dBA, or A-weighted decibel, refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies. On this scale, the normal range of human hearing extends from about zero dBA to about 140 dBA. A 10 dBA increase in the level of a continuous noise represents a perceived doubling of loudness. With respect to traffic noise, increases of three dBA are barely perceptible to people, while a five dBA increase is readily

noticeable; an increase of less than three dBA is generally not perceptible outside of controlled laboratory conditions.²³¹ The equivalent noise level, L_{eq} , is the steady-state energy level of noise measured over a given time period. Because of many receptors' typically greater sensitivity to unwanted noise at night, a 24-hour noise descriptor, called the day-night noise level (L_{dn}), adds an artificial 10 dBA increment to nighttime noise levels (10:00 p.m. to 7:00 a.m.) to "penalize," or more heavily weight, nighttime noise in calculating average (24-hour) noise levels.²³² **Table IV.E-1, Typical Sound Levels Measured in the Environment**, shows some representative noise sources and their corresponding noise levels in dBA.²³³

TABLE IV.E-1 TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT

Examples of Common, Easily Recognized Sounds	Decibels (dBA) at 50 feet	Subjective Evaluations
Near Jet Engine	140	Deafening
Threshold of Pain (Discomfort)	130	
Threshold of Feeling – Hard Rock Band	120	
Accelerating Motorcycle (at a few feet away)	110	
Loud Horn (at 10 feet away)	100	Very Loud
Noisy Urban Street	90	
Noisy Factory	85 ^{1a}	
School Cafeteria with Untreated Surfaces	80	Loud
Near Freeway Auto Traffic	60 ^b	Moderate
Average Office	50 ²	
Soft Radio Music in Apartment	40	Faint
Average Residence Without Stereo Playing	30	
Average Whisper	20	Very Faint
Rustle of Leaves in Wind	10	
Human Breathing	5	
Threshold of Audibility	0	

SOURCE: U.S. Department of Housing and Urban Development, *The Noise Guidebook*, 1985.

NOTES:

- a. Continuous exposure above 85 dBA requires implementation of a Hearing Conservation Plan under regulations of the Occupational Health and Safety Administration.
- b. Range of speech is 50 to 70 dBA.

²³¹ California Department of Transportation, Division of Environmental Analysis, "Technical Noise Supplement," November 2009; pp. 2-48–2-49. Available at http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf, accessed on August 29, 2016. This document (and all other documents cited in this report, unless otherwise noted), is available for review at 1650 Mission Street, Suite 400, San Francisco, CA, as part of Case No. 2011.1356E.

²³² Another descriptor, the Community Noise Equivalent Level (CNEL) similarly adds a 10 dBA penalty for nighttime noise, and also adds a 5 dBA penalty for evening (7:00 to 10:00 p.m.) noise.

²³³ U.S. Department of Housing and Urban Development, *The Noise Guidebook*, 1985. Available at <https://www.hudexchange.info/resource/313/hud-noise-guidebook/>, accessed on August 29, 2016.

Noise levels decrease with distance. In urban areas, traffic noise (a “line source,” in which the noise emanates not from a single location but from multiple locations along a street or roadway) typically is reduced by about three dBA for each doubling of distance. Noise from construction activities and other similar “point sources” generally attenuates at a rate of six dBA per doubling of distance. In areas without the hard, reflective ground surface of an urban streetscape, attenuation of noise from a point source is typically about 1.5 dBA greater.²³⁴

Health Effects of Environmental Noise

The World Health Organization (WHO) is perhaps the best source of current knowledge regarding health impacts of noise as European nations have continued to study noise and its health effects, while the U.S. Environmental Protection Agency all but eliminated its noise investigation and control program in the 1970s.²³⁵ According to the WHO, sleep disturbance can occur when continuous indoor noise levels exceed 30 dBA or when intermittent interior noise levels reach 45 dBA, particularly if background noise is low.²³⁶ With a bedroom window slightly open (a reduction from outside to inside noise levels of 15 dB), the WHO criteria would suggest exterior continuous (ambient) nighttime noise levels in residential areas, particularly those with older housing stock, should be 45 dBA or below, and short-term events should not generate noise in excess of 60 dBA.²³⁷ An acoustically well-insulated building with windows and doors closed can provide 30–35 dB of noise attenuation, while more-conventional residential construction provides 20–25 dB of noise reduction with windows closed and only about 15 dB of noise reduction when windows are open.²³⁸

Other potential health effects of noise identified by the WHO include decreased performance on complex cognitive tasks, such as reading, attention, problem solving, and memorization; physiological effects such as hypertension and heart disease (after many years of constant exposure, often by workers, to high noise levels); and hearing impairment (again, generally after long-term occupational exposure, although shorter-term exposure to very high noise levels, for example, several times a year to concert noise at 100 dBA, can also cause hearing impairment). Noise can also disrupt speech intelligibility at relatively low levels; for example, in a classroom setting, a noise level as low as 35 dBA can disrupt clear understanding. Finally, noise can cause annoyance and can trigger emotional reactions like anger, depression, and anxiety. The WHO reports that, during daytime hours, few people are seriously annoyed by activities with noise levels below 55 dBA, or moderately annoyed with noise levels below 50 dBA.²³⁹

²³⁴ California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013. Available at http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf, accessed on August 29, 2016.

²³⁵ *San Francisco General Plan*, Land Use Compatibility Guidelines for Community Noise, presented in Figure IV.E-3, were created during the same era.

²³⁶ World Health Organization (WHO), *Guidelines for Community Noise*. Geneva, 1999. Available at <http://www.who.int/docstore/peh/noise/guidelines2.html>, accessed on August 29, 2016.

²³⁷ It is noted that these noise levels represent ambient noise and are not comparable with the day-night noise level, L_{dn} , which, as noted above, adds a 10-dB “penalty” to nighttime noise. Thus, for example, the L_{dn} calculated for two 24-hour noise measurements in the Plan Area was 7 to 8 dBA higher than the measured nighttime noise level.

²³⁸ Harris, David A., *Noise Control Manual for Residential Buildings*, 1997; Wyle Laboratories, Wyle Research Report WR 94-23, Raleigh-Durham International Airport New Construction Acoustical Design Guide, prepared for Raleigh-Durham Airport Authority, September 30, 1994; and California Governor’s Office of Planning and Research, *General Plan Guidelines*, 2003.

²³⁹ World Health Organization (WHO), *Guidelines for Community Noise*. Geneva, 1999. Available at <http://www.who.int/docstore/peh/noise/guidelines2.html>, accessed on August 29, 2016.

Fundamentals of Vibration

As described by the Federal Transit Administration (FTA), ground-borne vibration, in contrast to airborne noise, is not a common environmental problem, and it is uncommon for vibration caused by heavy vehicles, such as trucks and buses, to be perceptible, even close to major roads. However, the FTA notes that “ground-borne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard.” Another common source of vibration is certain construction activities, such as pile driving and the operation of heavy earthmoving equipment.²⁴⁰

Several different methods are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal in inches per second (in/sec). The PPV is most frequently used to describe vibration impacts to buildings. Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration from construction activity typically include fragile structures (especially older masonry structures) and vibration-sensitive equipment; however, the latter is generally a concern only in laboratory and similar settings, which are typically installed in buildings constructed and/or renovated to provide for needed isolation from exterior vibration, and thus impacts to vibration-sensitive equipment are unlikely to result in a significant impact.

The effects of ground-borne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of activities such as pile driving during construction. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by only a small margin. However, a vibration level that causes annoyance would be well below the damage threshold for normal buildings, and would not be expected to reach a level of significance in the case of temporary and intermittent construction activities, which is the only vibration-inducing activity anticipated as a result of Plan implementation.

Existing Noise Environment

To characterize the existing noise environment in the Study Area, a series of both short-term (10-minute) and long-term (48-hour) noise measurements were conducted in May 2014, and available noise data collected as part of other recent environmental documents were compiled. Two areas of focus were (1) nighttime entertainment activities in the Study Area, including the area of the proposed Central SoMa Special Use District (SUD) Entertainment Subarea (the area generally bounded by Bryant, Townsend, Fourth, and Sixth Streets), and (2) existing and planned locations of residential uses.

The results of the 2014 noise monitoring, presented in **Table IV.E-2, Study Area Noise Measurements (2014)**, and illustrated in **Figure IV.E-1, Noise Monitoring Results**, show that day-night noise levels in the study area average about 75 dBA (L_{dn}) except in relatively quieter locations, such as along mid-block alleys, where noise levels are up to about 10 decibels quieter. Monitored noise levels ranged between 69 dBA and 74 dBA, except

²⁴⁰ Federal Transit Administration, Office of Planning and Environment, Transit Noise and Vibration Impact Assessment, May 2006. Available at http://www.hmmh.com/cmsdocuments/FTA_cover_sec01.pdf, accessed on August 29, 2016.

that one location (#2), on Folsom Street between Third and Fourth Streets, exhibited a noise level of 78 dBA (L_{dn}) in a long-term (24-hour) measurement. This location is two blocks east of San Francisco Fire Department Station No. 1 at 935 Folsom Street, and is on the route that fire apparatus travel when responding to calls north and east of the station, because all major streets in the area are one-way. A review of Fire Department response records determined that apparatus from Station 1 was dispatched during the hours when the highest noise levels were recorded. Therefore, it appears likely that average noise levels at this location can be strongly influenced by fire apparatus pass-bys, depending on response patterns on a given day and time.

TABLE IV.E-2 STUDY AREA NOISE MEASUREMENTS (2014)

No.	Date	Location	Street/ Alley	Duration	Noise Level (dBA, L_{dn}) ^a
1	5/29/14–5/30/14	Fourth Street south of Bryant Street ^b	S	LT (24 hrs.)	74
2	5/29/14–5/30/14	Folsom Street at Mabini Street (between Third and Fourth Streets) ^c	S	LT (24 hrs.)	78
3	5/19/14	Minna Street west of Sixth Street	A	ST (10 min., p.m. peak hr.)	67
4	5/19/14	Fourth & Howard Streets (SW corner)	S	ST (10 min., p.m. peak hr.)	74
5	5/19/14	Fifth Street between Folsom & Harrison Streets	S	ST (10 min., p.m. peak hr.)	69
6	5/19/14	Harrison Street between Fifth & Sixth Streets	S	ST (10 min., p.m. peak hr.)	72
7	5/20/14	Bluxome Street east of Fifth Street	A	ST (10 min., p.m. peak hr.)	66
8	5/20/14	Second and Bryant Streets (NE corner) ^b	S	ST (10 min., p.m. peak hr.)	76
Average^d					75

NOTES:

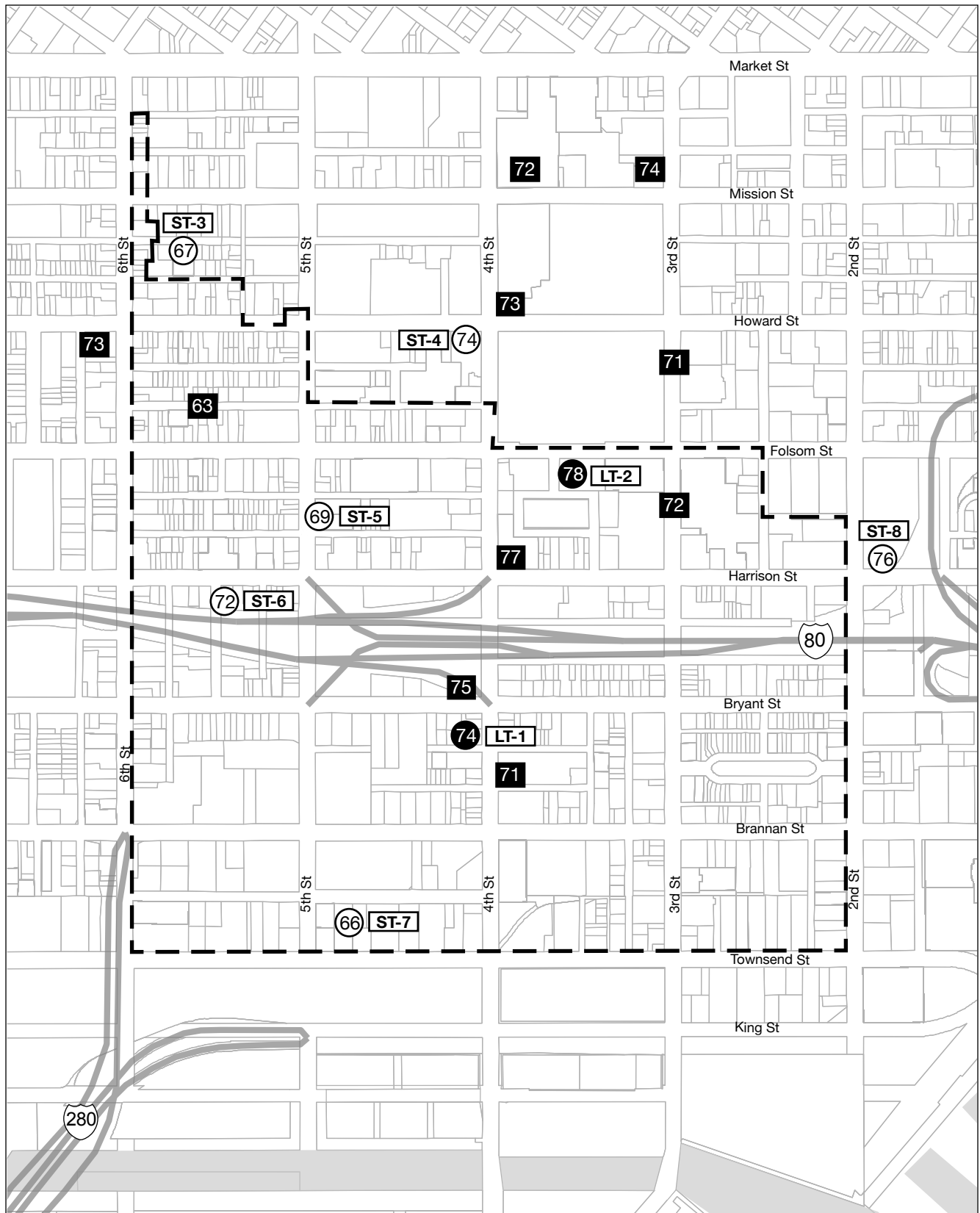
dBA = Decibel (A-weighted); S = Street; LT = Long-term noise measurement (minimum 24 hours); L_{dn} = Day-Night Noise Level; A = Alley; ST = Short-term noise measurement (i.e., 10 or 15 minutes)

- Short-term noise measurements during the peak traffic hours approximate the day-night noise level (generally within two dBA), according to the Caltrans document Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013. Available at http://sfwater.org/index.aspx?page=616://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf, accessed on August 29, 2016.
- Likely affected by traffic noise from nearby elevated I-80 freeway.
- Based on dispatch information from the San Francisco Fire Department, the average noise level at this location is influenced from fire apparatus traveling from Station No. 1 at 935 Folsom Street, two blocks east, when responding to calls north and east of the station.
- Average (calculated logarithmically) excludes the two alley measurements, where noise levels are lower than the major street noise levels.

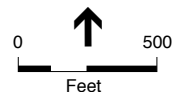
As is the case elsewhere in San Francisco, and particularly in the greater Downtown area, traffic is the predominant overall noise source. In the Study Area, many streets carry relatively larger volumes of heavy trucks and, on bus routes, buses, than elsewhere in the city, and traffic volumes are generally high.

The noise levels measured in the 2014 monitoring are consistent with noise modeling undertaken by the San Francisco Department of Public Health (DPH) and incorporated as Map 1 in the *San Francisco General Plan* Environmental Protection Element's Noise section.²⁴¹ The portion of the *General Plan* noise map that includes the Plan Area is presented in **Figure IV.E-2, Traffic Noise in the Central SoMa Transportation Study Area**, which

²⁴¹ *San Francisco General Plan*, Background Noise Levels, 2009. Available at http://www.sf-planning.org/ftp/General_Plan/images/I6.environmental/ENV_Map1_Background_Noise%20Levels.pdf, accessed on August 29, 2016.



- — Plan Area Boundary
- Ⓢ Short-term (ST) Noise Measurement
- Ⓛ Long-term (LT) Noise Measurement
- Previously Reported Noise Measurement



also depicts the study area and its vicinity, including the area in which the proposed street network changes would be implemented. The modeling shows that virtually all major streets in the Study Area are subject to traffic noise levels in excess of 70 dBA (L_{dn}). The 2014 monitoring results are also consistent with monitoring undertaken in connection with several Planning Department CEQA documents for projects in the study area. For comparison purposes, noise measurement data collected as part of other recent environmental documents are presented in **Table IV.E-3, Previous Noise Measurements in Study Area**, and also shown on Figure IV.E-1. Measurement data indicate similar noise levels along streets within the study area, with noise levels of around 74 dBA (L_{dn}) and a range of between 71 and 77 dBA on major streets, with one alley location being considerably quieter, at 63 dBA (L_{dn}).

TABLE IV.E-3 PREVIOUS NOISE MEASUREMENTS IN STUDY AREA

Date	Location	Street/ Alley	Duration	Noise Level (dBA, L_{dn}) ^a	Source
2/28/11	Howard Street at Sixth Street	S	LT (24 hrs.)	72	200-214 Sixth Street Initial Study (Case No. 2011.0119E)
2/28/11	Sixth Street at Howard Street	S	LT (24 hrs.)	73	
4/4/11	Third & Mission Streets	S	ST (15 min., Mid-day)	74*	706 Mission DEIR (Case No. 2008.1084E) <i>Avg. of 6 readings: 74 dBA</i>
4/4/11	Third & Mission Streets	S	ST (15 min., Mid-day)	74*	
4/4/11	Third & Mission Streets	S	ST (15 min., Mid-day)	75*	
4/4/11	Third & Jessie Streets	S	ST (15 min., Mid-day)	71*	
4/4/11	Third Street south of Jessie Street	S	ST (15 min., Mid-day)	76*	
4/4/11	Mission Street near Fourth Street	S	ST (15 min., Mid-day)	72*	
9/27/11	Clementina Street btw. Fifth & Sixth Streets	A	LT (41 hrs.)	63	465 Tehama/468 Clementina MND (Case No. 2005.0424E)
11/14/07	Fourth & Howard Streets	S	ST (15 min., Mid-day)	73	Central Subway SEIS/R (Case No. 96.281E)
11/15/07	Fourth & Harrison Streets	S	ST (15 min., mid-day)	77	
11/14/07	Fourth & Bryant Streets	S	ST (15 min., mid-day)	75	
11/14/07	Fourth Street south of Bryant Street	S	LT (24 hrs.)	71	
7/29/97	Third Street between Harrison & Folsom Streets	S	ST (15 min., mid-day)	72	
Average^b				74	

NOTES:

dBA = Decibel (A-weighted); S = Street; LT = Long-term noise measurement (minimum 24 hours); L_{dn} = Day-Night Noise Level; A = Alley; ST = Short-term noise measurement (i.e., 10 or 15 minutes)

- Short-term noise measurements during the peak traffic hours approximate the day-night noise level; short-term measurements taken outside peak traffic hours, where not already adjusted, have been increased by two dBA (noted with asterisk [*]), based on the relationship between non-peak-hour and daily noise levels reported in the Central Subway SEIS/R.
- Average (calculated logarithmically) excludes the one alley measurement, on Clementina Street between Third and Fourth Streets, where the noise level was much lower than the major street noise levels.

The existing noise levels mean that, in accordance with the *San Francisco General Plan Noise Element*, most major streets in the study area are considered too noisy for unprotected residential and other sensitive land uses, and such development should only be undertaken when “a detailed analysis of the noise reduction requirements [is] made and needed noise insulation features included in the design.” In practice, this means

that project-specific noise studies must be undertaken for individual residential (and other noise-sensitive) land uses and the project must include noise-reducing design features such as noise-insulating glass, often with mechanical ventilation provided so that residents can obtain fresh air without having to open windows, along with sound-dampening wall assemblies and doors. For residential and certain other uses, this requirement of the *General Plan* is consistent with and implemented by the noise insulation requirements in the *California Building Code* (discussed further in the Regulatory Framework section below).

Sensitive Receptors

Sensitive noise receptors are land uses that are generally considered to include residences, schools, child care facilities, religious facilities (churches), hospitals, skilled nursing/convalescent care facilities, and libraries. Land uses within the study area are described in Section IV.A, Land Use and Land Use Planning. In summary, residential uses occur throughout the study area, with the highest concentration of housing occurring in the northwestern portion of the Plan Area (a good deal of the area bounded by Fifth, Seventh, Mission, and Harrison Streets, a portion of which is within the Plan Area, is developed with residential uses). In particular, the Plan Area contains a concentration of senior housing developments, home to roughly 2,000 seniors, south and west of Moscone Center within the former Yerba Buena Redevelopment Area, in the blocks bounded by Howard, Fifth, Harrison, and Fourth Streets. Relatively newer residential development is located along Folsom Street (both sides) between Third and Fifth Streets (a portion of this area is within the Plan Area) and along or near Fourth Street south of the I-80 freeway. In general, much of the residential development in the eastern portion of the Plan Area is located on mid-block alleys and around South Park.

Schools include Bessie Carmichael Middle School on Harrison Street (just west of Fourth Street) and various Academy of Arts facilities located mostly in the northeastern Plan Area. There are three child development facilities located within the study area, but not within the Plan Area: at 95 Hawthorne Street between Harrison and Folsom Streets, 303 Second Street at Folsom Street, 790 Folsom Street at Fourth Street, 375 Seventh Street (in the Bessie Carmichael Elementary School), and in the Federal Building at Seventh and Mission Streets. Religious facilities within the study area include St. Patrick's Catholic Church, which is located on Mission Street across from Yerba Buena Gardens.

There are no hospitals, skilled nursing facilities, or libraries within the Plan Area. The closest library is the Mission Bay Library, located at 960 Fourth Street, just south of the Plan Area.

IV.E.3 Regulatory Framework

Federal Regulations

Federal regulations establish noise limits for medium and heavy trucks.²⁴² The federal truck pass-by noise standard is 80 dBA at 50 feet from the vehicle pathway centerline, under specified test procedures. These controls are implemented by regulation of truck manufacturers. There are no comparable standards for vibration, which are dependent on the roadway surface, the vehicle load, and other factors.

²⁴² The standards are codified in 40 CFR, Part 205, Subpart B.

State Regulations

The 2013 *California Building Code* (Title 24, Part 2, of the *California Code of Regulations* [CCR]) requires that interior noise levels from outside sources not exceed 45 dBA (L_{dn} or CNEL) in any habitable room (rooms for sleeping, living, cooking, and eating, but excluding bathrooms, closets, and the like) or a residential unit (*Building Code* Section 1207.4). The *Building Code* (Section 1207.2) also mandates that walls and floor/ceiling assemblies separating dwelling units from each other or from public or service areas have a Sound Transmission Class (STC) of at least 50, meaning they can reduce noise by a minimum of 50 dB.

In addition, the 2013 *Green Building Standards Code* (also part of the *California Building Code*; CCR Title 24, Part 11) specifies the following insulation standards for Environmental Comfort (Section 5.507) to minimize exterior noise transmission into interior spaces for non-residential buildings:

Section 5.507.4.1, Exterior Noise Transmission, requires wall and roof-ceiling assemblies to have an STC of at least 50 and exterior windows to have a minimum STC of 30 for any of the following building locations: (1) within the 65 dBA, L_{dn} , noise contour of a freeway, expressway, railroad, or industrial source; and (2) within the 65 dBA noise contour of an airport. Exceptions include buildings with few or no occupants and where occupants are not likely to be affected by exterior noise, such as factories, stadia, parking structures and storage or utility buildings.

Section 5.507.4.3, Interior Sound Transmission, requires wall and floor-ceiling assemblies separating tenant spaces and public places to have an STC of at least 40. There are no State standards for vibration, outside of California Title 24 Building Standards Code for earthquake safety.

Local Regulations

San Francisco General Plan

The Environmental Protection Element of the *San Francisco General Plan* contains Land Use Compatibility Guidelines for Community Noise.²⁴³ These guidelines, which are similar to state guidelines promulgated by the Governor's Office of Planning and Research, indicate maximum acceptable noise levels for various newly developed land uses. These guidelines are presented in **Figure IV.E-3, Land Use Compatibility Chart for Community Noise**. Although this figure presents a range of noise levels that are considered compatible or incompatible with various land uses, the maximum "satisfactory" noise level is 60 dBA (L_{dn}) for residential and hotel uses, 65 dBA (L_{dn}) for school classrooms, libraries, churches and hospitals, 70 dBA (L_{dn}) for playgrounds, parks, office buildings, retail commercial uses and noise-sensitive manufacturing/communications uses, and 77 dBA for other commercial uses such as wholesale, some retail, industrial/manufacturing, transportation, communications, and utilities. If these uses are proposed to be located in areas with noise levels that exceed these guidelines, a detailed analysis of noise reduction requirements would be necessary prior to final review and approval. None of the noise measurements made for this EIR, nor the previous noise measurements in or near

²⁴³ *San Francisco General Plan*, Environmental Protection Element, Policy 11.1. Available at http://generalplan.sfplanning.org/I6_Environmental_Protection.htm, accessed August 29, 2016.

LAND USE CATEGORY	Sound Levels and Land Use Consequences (see explanation below)						
	L _{dn} Value in Decibels						
	55	60	65	70	75	80	85
RESIDENTIAL All Dwellings, Group Quarters							
TRANSIENT LODGING Hotels, Motels							
SCHOOL CLASSROOMS, LIBRARIES, CHURCHES, HOSPITALS, NURSING HOMES, ETC.							
AUDITORIUMS, CONCERT HALLS, AMPHITHEATRES, MUSIC SHELLS							
SPORTS ARENA, OUTDOOR SPECTATOR SPORTS							
PLAYGROUNDS, PARKS							
GOLF COURSES, RIDING STABLES, WATER-BASED RECREATION AREAS, CEMETERIES							
OFFICE BUILDINGS Personal, Business, and Professional Services							
COMMERCIAL Retail, Movie Theatres, Restaurants							
COMMERCIAL Wholesale and Some Retail, Industrial/Manufacturing, Transportation, Communications and Utilities							
MANUFACTURING Noise-Sensitive COMMUNICATIONS Noise-Sensitive							



Satisfactory, with no special noise insulation requirements.



New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.



New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.



New construction or development should generally not be undertaken.

the Plan Area, nor any of the modeling of existing peak-hour traffic noise revealed existing noise levels of 65 dBA or less, with the exception of a single 24-hour noise measurement, were taken on Clementina Street between Fifth and Sixth Streets in 2011, and none of the results was 60 dBA or less. Therefore, it can be assumed that the entire Plan Area exceeds the *General Plan's* maximum "satisfactory" residential noise level of 60 dBA. The General Plan does not establish vibration standards or otherwise address vibration.

San Francisco Noise Ordinance

In the city, regulation of noise is addressed in Article 29 of the *Police Code* (the Noise Ordinance), which states the City's policy is to prohibit unnecessary, excessive, and offensive noises from all sources subject to police power. Sections 2907 and 2908 of Article 29 regulate construction equipment and construction work at night, while Section 2909 provides for limits on stationary-source noise from machinery and equipment. Sections 2907 and 2908 are enforced by the Department of Building Inspection, and Section 2909 is enforced by the Department of Public Health. Summaries of these and other relevant sections are presented below.

Section 2907(a) of the *Police Code* limits noise from construction equipment to 80 dBA when measured at a distance of 100 feet from such equipment, or an equivalent sound level at some other convenient distance. Exemptions to this requirement, pursuant to Section 2907(b), include impact tools with approved mufflers, pavement breakers and jackhammers with approved acoustic shields, and construction equipment used in connection with emergency work. Section 2908 prohibits nighttime construction (between 8:00 p.m. and 7:00 a.m.) that generates noise exceeding the ambient noise level by five dBA at the nearest property line unless a special permit has been issued by the City.

Section 2909 generally prohibits fixed mechanical equipment noise and music in excess of five dBA more than ambient noise from residential sources, eight dBA more than ambient noise from commercial sources, and 10 dBA more than ambient on public property at a distance of 25 feet. Section 2909(d) establishes maximum noise levels for fixed noise sources (e.g., mechanical equipment) of 55 dBA (7:00 a.m. to 10:00 p.m.) and 45 dBA (10:00 p.m. to 7:00 a.m.) inside any sleeping or living room in any dwelling unit located on residential property to prevent sleep disturbance. The Police Code does not establish vibration standards or otherwise address vibration.

San Francisco Building Code

The *San Francisco Building Code* was amended in 2015 to incorporate language included in Section 1207.4 (interior noise standards) of the *California Building Code*; (see discussion of State Regulations, above). San Francisco's current Section 1207.6.2 accordingly reads the same as Section 1207.4 of the *California Building Code*. The *San Francisco Building Code* also includes a requirement that residential structures in "noise critical areas, such as in proximity to highways, county roads, city streets, railroads, rapid transit lines, airports, nighttime entertainment venues, or industrial areas," be designed to exceed the *Code's* quantitative noise reduction requirements, and specifies, "Proper design to accomplish this goal shall include, but not be limited to, orientation of the residential structure, setbacks, shielding, and sound insulation of the building" (Section 1207.6.1). Section 1207.7 requires submittal of an acoustical report along with a project's building permit application to demonstrate compliance with the *Code's* interior noise standards. The Building Code does not establish vibration standards or otherwise address vibration.

Regulation of Noise from Places of Entertainment

In May 2015, in recognition of both the potential noise effects on nearby residences from Places of Entertainment (e.g., nightclubs, bars with live music and/or disc jockeys, theaters, and the like) and of the cultural and economic importance to the city of Places of Entertainment, the Board of Supervisors passed, and the Mayor signed into law, Ordinance 70-15, which made amendments to the *San Francisco Building Code*, *Administrative Code*, *Planning Code*, and *Police Code* that require attenuation of exterior noise for new residential structures and acoustical analysis (as described above under *San Francisco Building Code*); to require a process of consultation between the Planning Department and the Entertainment Commission regarding proposed residential uses within 300 feet of Places of Entertainment, including notifying a potential residential project sponsor if there are nearby Places of Entertainment; to allow the Entertainment Commission to conduct a hearing, attended by the residential project sponsor, on such a project and to provide comments and recommendations to the Planning Department regarding the project; to require the Planning Department to consider noise issues in reviewing the project; to preclude a Place of Entertainment from being declared a public or private nuisance on the basis of noise for residents of residential structures developed since 2005; and to require disclosure to residential renters and buyers of potential noise and other inconveniences associated with nearby Places of Entertainment. Additionally, the Entertainment Commission is authorized to impose noise conditions on a permit for a Place of Entertainment, including noise limits “that are lower or higher than those set forth in Article 29” of the *Police Code*.

IV.E.4 Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR, implementation of the Plan would have a significant noise or vibration impact if it would:

- Expose people to or generate noise levels in excess of standards established in the *San Francisco General Plan* or Noise Ordinance (Article 29 of the *Police Code*);
- Expose people to or generate excessive groundborne vibration or groundborne noise levels;
- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project; or
- Result in people being substantially affected by existing noise levels.

A project would also normally result in a significant impact with respect to noise if it is located within an airport land use plan area or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, or if the project would expose people residing or working in the vicinity of a private airstrip to excessive noise levels. The Planning Department published the Initial Study on February 12, 2014 (see Appendix B), in order to focus the scope of the EIR by assessing which of the Plan’s environmental topics would not result in significant impacts on the environment. As stated in the Initial Study, the Plan Area is not within an airport land use plan area, nor is it in the vicinity of a private airstrip. Therefore, these two topics need not be addressed in this Draft EIR.

Approach to Analysis

The Plan is a regulatory program and would result in new planning policies and controls for land uses to accommodate additional jobs and housing. With the exception of the street network changes and open space improvements, the Plan itself would not result in direct physical changes to the existing noise environment. Indirect effects from the Plan could result as subsequent development projects allowed under the Plan replace existing residences and businesses, or increase space for residences or businesses over time in the Plan Area.

In the *California Building Industry Association v. Bay Area Air Quality Management District* case decided in 2015,²⁴⁴ the California Supreme Court held that CEQA does not generally require lead agencies to consider how existing environmental conditions might impact a project's users or residents, except where the project would significantly exacerbate an existing environmental condition. Accordingly, the significance criteria above related to exposure of persons to noise levels in excess of standards in the General Plan or Noise Ordinance, exposure of persons to excessive groundborne vibration or groundborne noise levels, and people being substantially affected by existing noise levels are relevant only to the extent that the project significantly exacerbates the existing noise environment. Thus, the analysis below evaluates whether the proposed project could significantly exacerbate the existing or future noise environment. An impact is considered significant if implementation of subsequent projects that may be permitted by the Plan, or overall development under the Plan including proposed street network changes and open space improvements, would significantly exacerbate existing or future noise above levels that would occur without the project.

This analysis identifies potential noise impacts associated with future development that could result from implementation of the Plan. Noise issues evaluated in this section include (1) noise generated by future increases in traffic volumes under the Plan in combination with traffic volumes that would be redistributed as a result of implementation of the proposed street network changes; (2) noise that would be generated by fixed-noise sources and/or other sources of substantial noise; (3) compatibility of potential future uses with the San Francisco Land Use Compatibility Guidelines for Community Noise; and (4) construction noise and vibration. Land use development, including residential development has the potential to result in noise as vehicle trips associated with development may have indirect noise impacts and stationary equipment such as air handling equipment can result in direct noise exposure impacts to adjacent sensitive uses.

In general, traffic noise increases of less than three dBA are not perceptible to people, while a five dBA increase is readily noticeable.²⁴⁵ Therefore, permanent increases in ambient noise levels of five dBA or more are considered a significant impact, unless the resulting noise environment is unacceptable for the surrounding uses. Here, a permanent increase in ambient noise levels of three dBA is considered a significant impact because existing noise levels already exceed satisfactory standards for residential uses, as shown on Figure IV.E-3. The existing average ambient noise level in the Plan Area is approximately 74–75 dBA L_{dn} , which exceeds the levels considered satisfactory for all land uses (except for certain recreational or commercial uses); therefore, this EIR considers an increase in ambient noise levels from traffic above three dBA to be a significant impact.

²⁴⁴ *California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal.4th 369. Opinion Filed December 17, 2015.

²⁴⁵ California Department of Transportation, Division of Environmental Analysis, "Technical Noise Supplement," November 2009; pp. 2-48–2-49. Available at http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf, accessed on August 29, 2016.

For noise generating uses, noise impacts are determined based on compliance with Section 2909 of the Noise Ordinance. Section 2909 of the Noise Ordinance specifies noise limits for fixed stationary noise sources that do not specifically apply to all types of noise generating uses. However, the restrictions in the Noise Ordinance are designed to prevent sleep disturbance, protect public health, and prevent the acoustical environment from progressive deterioration and are therefore appropriate to apply to noise generating sources not specifically regulated under the Noise Ordinance with the exception of transportation sources, which are evaluated based on the criteria above.

Section 2909 of the Noise Ordinance establishes property line noise limits in excess of ambient noise levels that should not be exceeded at five dBA for residential uses, eight dBA for commercial uses, and 10 dBA for noise from public properties. Section 2909(d) also establishes that fixed noise sources cannot exceed 55 dBA at interior residential units during daytime hours (7:00 am to 10:00 pm) and 45 dBA during nighttime hours (10:00 pm to 7:00 am). Generally, if a noise generating use meets the property line noise levels additional analysis of compliance with Section 2909(d) requirements is not necessary. The exception would be in cases where residential uses directly abut the noise generating use.

Construction noise impacts are generally evaluated based on standards in the Noise Ordinance, specifically the standard in Section 2907(a) of the *Police Code*, which limits noise from construction equipment to 80 dBA at a distance of 100 feet from such equipment. As discussed in the Environmental Setting section above, construction noise is assumed to attenuate at a rate of six dBA per doubling of distance. Thus, for example, construction activity that generates a noise level of 80 dBA at a distance of 50 feet from the noise source would be reduced to 74 dBA at 100 feet, and to 68 dBA at 200 feet.

The FTA has developed criteria for judging the significance of vibration produced by construction equipment, which is the only vibration-producing activity anticipated to occur as a result of Plan implementation. The FTA establishes the following standards to prevent architectural damage: (1) 0.5 in/sec PPV for reinforced-concrete, steel, or timber (no plaster) construction and (2) 0.2 in/sec PPV for fragile buildings (i.e., non-engineered timber or masonry structures).²⁴⁶ These are used as the thresholds of significance for vibration impacts in this EIR.

Impact Evaluation

Impact NO-1: Development under the Plan, including the proposed street network changes, would generate noise that would result in exposure of persons to noise levels in excess of standards in the *San Francisco General Plan* or Noise Ordinance (Article 29 of the *Police Code*), and would result in a substantial permanent increase in ambient noise above existing levels. (Significant and Unavoidable with Mitigation)

Traffic Noise Impacts

Noise modeling was undertaken to evaluate the noise generated by increased traffic in the study area due to development allowed by the Plan and probable future cumulative projects that would generate traffic on study area streets (see Impact C-NO-1 for analysis of cumulative impacts), as well as the changes in traffic

²⁴⁶ FTA, *Transit Noise and Vibration Impact Assessment*; see Table 12-3, p. 12-13.

noise that would result from redistribution of traffic with implementation of the proposed street network changes. Changes in traffic noise were evaluated between existing conditions and each of the three development scenarios: (1) the addition of traffic volumes related to growth from implementation of the Plan; (2) this same Plan-generated growth plus changes in the street network, with Howard and Folsom Streets remaining one-way streets; and (3) Plan growth plus street network changes and including conversion of Howard and Folsom Streets to two-way traffic operations. In total, three different comparisons (as shown in **Table IV.E-4, Traffic Noise Analysis Scenario Comparisons**) were made between the following analysis scenarios:

- Existing Conditions
- Existing + Growth Attributed to the Plan
- Existing + Growth Attributed to the Plan with Street Improvements (Folsom/Howard one-way)
- Existing + Growth Attributed to the Plan with Street Improvements (Folsom/Howard two-way)

TABLE IV.E-4 TRAFFIC NOISE ANALYSIS SCENARIO COMPARISONS

Change in Traffic Noise	Components of Change
From Existing to Plan Land Use	Traffic noise from plan-generated growth only
From Existing to Existing plus Plan Land Use plus Street Network Changes (One-Way)	Traffic noise from plan growth plus Street Network Changes; Howard & Folsom remain one-way streets.
From Existing to Existing plus Plan Land Use plus Street Network Changes (Two-Way)	Traffic noise from plan growth plus Street Network Changes; Howard & Folsom converted to two-way streets.

The results of the traffic noise modeling revealed that effects of Plan-generated growth on the existing noise environment would be relatively limited. Of the nearly 149 street segments²⁴⁷ (generally one block long and each evaluated for the three analysis scenario comparisons representing a change from one development scenario to another), only two street segments would experience increases in traffic-generated noise that would exceed three dBA—Howard Street between 10th and 11th Streets and Howard Street west of 11th Street (both of which are outside the Plan Area). These two street segments would experience an increase in traffic noise of three dBA or more due to the Plan’s land use program plus the potential conversion of Howard and Folsom Streets to two-way operation. At the other locations, Plan traffic and the proposed street network changes would result in a noise increase of less than three dBA.

Table IV.E-5, Existing plus Plan Traffic Noise Analysis, presents the two street segments where traffic-generated noise would increase by three dBA or more. (Affected street segments within the study area are also shown in Figure IV.E-1.) The complete modeling for all street segments is included in Appendix D of this EIR.

²⁴⁷ In the Plan transportation analysis, 80 study intersections and the street segments between these same intersections were modeled for the above scenarios. Some of the study intersections are outside the Plan Area to capture the effect of traffic changes due to the proposed street network changes that extend east and west of the Plan Area, primarily on Howard, Folsom, and Harrison Streets. Other intersections outside the Plan Area analyze effects on key gateway intersections, such as those on King Street, which leads to and from Interstate Highway 280.

TABLE IV.E-5 EXISTING PLUS PLAN TRAFFIC NOISE ANALYSIS

Segment (Cross Streets)	Existing	Existing + Plan Land Uses		Existing + Plan Land Uses 1-Way Howard/ Folsom		Existing + Plan Land Uses 2-Way Howard/ Folsom	
	Noise (dBA)	Noise (dBA)	Change from Existing	Noise (dBA)	Change from Existing	Noise (dBA)	Change from Existing
Fourth (Bryant / Brannan)	68.5	69.5	1.0	69.4	0.9	68.7	0.2
Fourth (Brannan / Townsend)	69.0	70.2	1.2	69.6	0.6	68.4	-0.6
Fifth (Bryant / Brannan)	71.2	72.6	1.4	72.3	1.1	72.4	1.2
Fifth (Brannan / Townsend)	68.8	70.7	1.8	71.3	2.4	71.2	2.3
Howard (Fifth / Sixth)	71.7	72.2	0.5	72.7	1.0	73.9	2.2
Howard (Sixth / Seventh)	70.6	71.1	0.5	71.3	0.6	72.7	2.1
Howard (Seventh / Eighth)	70.7	71.3	0.6	71.3	0.6	72.9	2.2
Howard (Eighth / Ninth)	71.0	71.3	0.4	71.3	0.4	73.3	2.3
Howard (Ninth / Tenth)	69.6	70.0	0.4	70.1	0.4	72.1	2.5
Howard (Tenth / Eleventh)	67.9	68.5	0.6	68.6	0.7	71.0	3.1
Howard west of Eleventh	66.9	67.0	0.2	67.0	0.2	72.1	5.2
Bryant east of Second	66.5	67.8	1.3	67.9	1.4	68.1	1.6
Bryant (Third / Fourth)	70.4	71.2	0.8	71.7	1.3	71.8	1.4
Increases of 3.0 dB or more		0		0		2	

SOURCE: Environmental Science Associates, 2016.

NOTE:

Bold-face type indicates significant impact (increase of 3.0 dBA or more over existing conditions).

Traffic Generated by Development under the Plan

The noise modeling indicates that traffic increases under the Existing plus Plan scenario would result in noise increases of 2.5 dBA or less.²⁴⁸ When compared to the three dBA perceptibility threshold, a 2.5 dBA noise increase would have a less-than-significant impact on existing residential and other noise-sensitive uses.

Under existing conditions, three-fourths of the street segments modeled experience traffic noise levels of 70 dBA (L_{dn}) or greater. As noted above, the *General Plan* Environmental Protection Element noise map indicates that nearly all major streets in the study area have traffic noise levels above 70 dBA, L_{dn} . Many of the street segments that were identified as having noise levels below 70 dBA are outside the Plan Area and away from the highest-traffic volume blocks near freeway on- and off-ramps. The addition of Plan traffic to existing conditions would increase the percentage of street segments with traffic noise levels of 70 dBA (L_{dn}) or greater from 74 percent to 77 percent, which would not substantially affect the overall ambient noise level in the study area. Moreover, as noted, none of the street segments would experience a noise increase of three dBA or greater. Therefore, traffic generated by anticipated Plan Area development alone would not result in a substantial permanent increase in

²⁴⁸ The location of this increase of 2.5 dBA, Fifth Street between Brannan and Townsend Streets, is not included in Table IV.E-5, as it would occur at a location that would not result in a 3 dBA increase in any analysis scenario, including cumulative analysis scenarios. This and all modeling results are included in Appendix D.

ambient noise levels, and would not expose persons to noise levels in excess of standards in the *San Francisco General Plan*. Given these findings, together with the fact that the study area already exceeds 60 dBA, the maximum “acceptable” noise level for residential uses, the Plan would not result in people being substantially affected by noise levels, and would not significantly exacerbate the existing noise environment.

Proposed Street Network Changes

The additional consideration of the proposed changes to the street network results in minor changes to the foregoing analysis. When compared to existing conditions, the one-way Howard and Folsom street network changes (that is, Plan growth plus the street network changes) would result in increases of 2.4 dBA or less along study segments; these increases of less than three dBA would not be noticeable and would be *less than significant*.

The two-way Howard and Folsom Streets network changes would result in noise increases greater than three dBA along study segments at two locations: a 3.1 dBA and 5.2 dBA increase along two segments of Howard Street, 10th to 11th Street and west of 11th Street, respectively, when compared to existing conditions (see Table IV.E-5). This would be a significant noise impact at these two locations. At all other locations, traffic noise increases would be less than three dBA and thus would be *less than significant*.

There is no feasible way to reduce traffic noise, short of reducing traffic volumes. Increased traffic noise would primarily affect residents of existing buildings, particularly residents living in early 20th century residential structures that are less likely than newer buildings to have adequate noise insulation. **Mitigation Measure M-NO-1a, Transportation Demand Management for New Development**, would reduce traffic noise by reducing traffic volumes generated in the study area. The Transportation Demand Management (TDM) measures would encourage drivers to switch to alternative modes of travel, such as walking, biking, and transit. However, it cannot be stated with certainty that the reduction in traffic volume would be sufficient to avoid significant impacts to existing land uses in and near the study area.

With implementation of **Mitigation Measure M-NO-1a, Transportation Demand Management Plan for Development Projects**, sustainable modes would be encouraged and the use of single-occupant vehicles would be discouraged, which would increase the use of taxi/rideshare, transit, bicycle, and pedestrian modes. The impacts resulting from such a shift of vehicle trips to other modes are difficult to predict. If many vehicle trips were to shift to transit and pedestrian trips, it is possible that **Mitigation Measure M-NO-1a** could contribute to Plan-related significant and unavoidable transit and pedestrian impacts (see Impact TR-2 for transit and Impact TR-3 for pedestrians), but not likely to a substantial degree. The potential for such contributions to occur as a result of **Mitigation Measure M-NO-1a** is speculative because it is unknown which TDM specific measures subsequent development project sponsors would select. Moreover, current literature does not document which travel modes people would choose in response to implementation of several TDM measures from the menu provided as part of **Mitigation Measure M-NO-1a**. In addition, most subsequent development projects that would be subject to **Mitigation Measure M-NO-1a** would also be subject to the Transportation Sustainability Fee.²⁴⁹ The Transportation Sustainability Fee requires developers to pay a portion of their fair share to enhance intersections, sidewalks, and transit facilities to accommodate the

²⁴⁹ San Francisco Planning Code Section 411A.

increase in trips associated with new development. Therefore, implementation of **Mitigation Measure M-NO-1a** would not cause any significant effects in addition to those that would be caused by the Plan as proposed.

As discussed in the Regulatory Framework section above, new residential buildings would be subject to the interior noise standards in Title 24 of the *California Building Code*, which requires that interior noise levels from outside sources not exceed 45 dBA L_{dn} . Therefore, new residential uses would not be substantially affected by Plan-generated traffic noise. Subsequent development under the Plan could also include new non-residential noise-sensitive land uses. However, the 2013 *San Francisco Green Building Code*, which incorporates the 2013 *California Green Building Standards Code*, requires that non-residential buildings that are exposed to one-hour traffic noise levels of 65 dBA, L_{eq} , or greater be constructed with minimum noise insulation properties or meet a maximum hourly noise level of 50 dBA in occupied interior areas (*California Green Building Code* Sections 5.507.4.1.1 and 5.507.4.2). Therefore, new non-residential noise-sensitive land uses would be sufficiently insulated from substantial exterior noise, and like new residential uses, the noise impact would be *less than significant*.

In summary, Plan traffic growth, along with the potential two-way operation of Howard and Folsom Streets, would subject existing residents and possibly other sensitive receptors on Howard Street west of 10th Street to perceptible increases in ambient noise in excess of three dBA, resulting in a significant impact. Implementation of Mitigation Measure M-NO-1a, Transportation Demand Management for New Development, would require subsequent development projects that propose 10 or more units, new non-residential uses greater than 10,000 square feet, or a change of use covering greater than 25,000 square feet of non-residential space to implement a suite of TDM measures. Mitigation Measure M-NO-1a would encourage the use of sustainable modes of transportation and discourage travel by vehicle, thereby reducing vehicle trips and associated traffic noise generated by subsequent development projects. However, the effectiveness of Mitigation Measure M-NO-1a to reduce traffic noise to less-than-significant levels is unknown at this time; therefore, noise impacts associated with implementation of the Plan and the Folsom and Howard two-way street network operation would be considered *significant and unavoidable with mitigation*.

Proposed Open Space Improvements

Any new open spaces and related improvements, such as landscaped, pedestrian-oriented alleys, and privately owned, publicly-accessible open spaces (POPOS) in the Plan Area would primarily serve local residents and employees. No large-scale, city-serving or regional open space improvements are planned or anticipated. Therefore, the proposed open space improvements would generate little, if any, new vehicular traffic and, accordingly, would result in little or no increase in indirect traffic-generated noise.

Noise Generating Sources

Development under the Plan

Development of certain commercial uses in proximity to existing residential uses would increase the potential for noise disturbance or conflicts. Sources of noise typically associated with non-residential uses can include loading/unloading activities, delivery trucks, parking cars, garbage trucks, and use of refuse bins. In addition, production, distribution, and repair (PDR) uses, such as light industrial uses, trucking uses, and commercial contractors, may operate early in the morning and/or late at night, when residents would be expecting a

relatively quiet environment. Stationary sources of noise from commercial and PDR uses can include refrigeration, air conditioning, heating units, and generators. As stated in the Regulatory Framework section, above, the City's Noise Ordinance limits noise from residential and commercial properties. However, depending on the type of commercial activities, noise generated from the sources described above could result in a substantial permanent, temporary or periodic increase in ambient noise levels, creating noise conflicts between residential and commercial uses. Similar conflicts could arise in the case of other non-residential sensitive uses, such as child care centers, schools, and the like. Noise-generating uses that result in a substantial permanent, temporary, or periodic increase in noise levels in excess of the standards in Section 2909 of the Noise Ordinance would be a significant impact. Implementation of **Mitigation Measure M-NO-1b, Siting of Noise Generating Uses**, would ensure that development of new uses that could create substantial new sources of noise not already regulated by Section 2909 of the Noise Ordinance is properly evaluated and potential effects ameliorated so that potential conflicts between new noise-generating uses and existing noise-sensitive uses are avoided. This mitigation measure would reduce noise impacts from noise generating sources to a *less-than-significant* level.

Proposed Open Space Improvements

As noted above, proposed open space improvements in the Plan Area are likely to include landscaped, pedestrian-oriented alleys; POPOS; and, potentially, one or more small community parks. No large-scale, city-serving or regional open space improvements, such as ball fields, or other major active use areas are planned or anticipated. Therefore, proposed open space improvements that would be implemented as part of the Plan would not be expected to introduce a new source of substantial noise that could cause disturbance to residential or other noise-sensitive land uses.

Noise Compatibility of Future Uses

As indicated above, Plan-generated traffic noise under the Folsom/Howard two-way configuration would result in a significant increase in ambient noise levels, meaning that Plan-generated traffic would significantly exacerbate the existing noise environment. Therefore, this section analyzes whether the Plan would expose people to noise levels in excess of standards established in the *San Francisco General Plan* (significance criterion 1). As stated in the Environmental Setting, much of the study area has traffic noise levels that exceed 70 dBA along major streets, although conditions are quieter along mid-block alleys; as also noted in the Environmental Setting, noise levels in the entire Plan Area exceed 60 dBA, the maximum "satisfactory" noise level for residential uses as identified in the *San Francisco General Plan*. In compliance with the *San Francisco Building Code*, new development would be required to incorporate sufficient noise insulation to result in an interior noise level of 45 dBA in all habitable rooms. A typical new building with double-glazed windows can provide sufficient noise reduction with the windows closed; however, this requires that an alternative source of fresh air, such as mechanical ventilation, be provided. Therefore, residential development in the Plan Area would be required to incorporate sufficient noise insulation such that residents would not be exposed to noise levels in excess of established standards or be substantially affected by existing or existing plus project noise levels.

The Plan proposes to permit nighttime entertainment uses within a limited area, south of Harrison Street between Fourth and Sixth Streets, where the Plan would establish a new Central SoMa SUD. The underlying zoning in this area is proposed as MUO, which permits a variety of uses, including both office and residential use, along with small-scale light industrial uses. Because entertainment uses typically generate nighttime noise

and residential uses require quieter nighttime noise levels, noise conflicts could result where these land uses are in proximity to one another and where buildings may not be sufficiently insulated to prevent the intrusion of excessive noise. This potential would increase with development of new housing, which in some cases could result in a significant impact. There is currently only a small number of Places of Entertainment within the area proposed for the Central SoMa SUD and the Plan notes that “there is an opportunity to address potential conflicts before they occur, through soundproofing [of new venues] and policing measures already required by the City.” Depending on proximity of Places of Entertainment and presence of intervening buildings (which would serve as effective noise barriers) or other attenuating factors, it is possible that new residential development would have to be designed to minimize noise conflicts with existing entertainment uses, as required by the City’s recently adopted revisions to the *Building Code*, *Administrative Code*, *Planning Code*, and *Police Code*, described in the Regulatory Framework under Regulation of Noise from Places of Entertainment. Additionally, new entertainment uses would be required to be designed to minimize noise impacts on any nearby existing residential uses (Mitigation Measure M-NO-1b, Siting of Noise-Generating Uses, along with *Police Code* provisions that allow the Entertainment Commission to adopt noise-related permit conditions on Places of Entertainment). Combined implementation of the City code provisions and Mitigation Measure M-NO-1b, Siting of Noise Generating Uses, would reduce the potential for noise conflicts between new entertainment and residential uses to a *less-than-significant* level.

Proposed Street Network Changes

Implementation of proposed street network changes would alter traffic noise levels along roadways in the study area vicinity, and these changes are discussed above.

Proposed Open Space Improvements

Depending on the nature of the open spaces developed, including design and proximity to major streets, proposed public open space areas could be located in areas where noise levels exceed 70 dBA, L_{dn} , the level at which speech interference occurs. As shown in the land use compatibility chart (Figure IV.E-3, Land Use Compatibility Chart for Community Noise), the noise level in parks and playgrounds is considered unsatisfactory. However, in urban environments, playgrounds and parks (active recreation areas) are not considered a noise sensitive use. Users would be exposed to noise in open spaces of shorter duration and due to their use as recreational facilities are not likely to result in the adverse health effects from sleep disturbance. Therefore, impacts to proposed open spaces from noise generated by the Plan and subsequent development projects would not be considered a significant impact.

Mitigation Measures

Mitigation Measure M-NO-1a: Transportation Demand Management for New Development Projects. To reduce vehicle noise from subsequent development projects in the Plan Area, the project sponsor and subsequent property owners shall develop and implement a TDM Plan as part of project approval. The scope and number of TDM measures included in the TDM Plan shall be in accordance with Planning Department’s TDM Program Standards for the type of development proposed, and

accompanying appendices.²⁵⁰ The TDM Program Standards and accompanying appendices are expected to be refined as planning for the proposed TDM Ordinance continues. Each subsequent development project's TDM Plan shall conform to the most recent version of the TDM Program Standards and accompanying appendices available at the time of the project Approval Action, as defined in Section 31.04(h) of the San Francisco Administrative Code. The Planning Department shall review and approve the TDM Plan, as well as any subsequent revisions to the TDM Plan. The TDM Plan shall target a reduction in the vehicle miles traveled (VMT) rate (i.e., VMT per capita), monitor and evaluate project performance (actual VMT), and adjust TDM measures over time to attempt to meet VMT target reduction. This measure is applicable to all projects within the Plan Area that do not otherwise qualify for an exemption under Article 19 of the CEQA Guidelines. This measure may be superseded if a comparable TDM Ordinance is adopted that applies to projects in the Plan Area. The TDM Plan shall be developed by the project sponsor for each particular development project, and shall aim to achieve the maximum VMT rate reduction feasible. The TDM Plan shall be developed in consultation with the Planning Department and rely generally on implementation of measures listed in *Updating Transportation Impacts Analysis in the CEQA Guidelines* document published by California Office of Planning and Research on August 6, 2014, or whatever document supersedes it, and the Planning Department TDM Program Standards and accompanying appendices in effect at the time of the Project Approval Action. The TDM program may include, but is not limited to the types of measures, which are summarized below for explanatory example purposes. Actual development project TDM measures shall be applied from the TDM Program Standards and accompanying appendices, which describe the scope and applicability of candidate measures in detail:

1. Active Transportation: Provision of streetscape improvements to encourage walking, secure bicycle parking, shower and locker facilities for cyclists, subsidized bike share memberships for project occupants, bicycle repair and maintenance services, and other bicycle-related services
2. Car-Share: Provision of car-share parking spaces and subsidized memberships for project occupants
3. Delivery: Provision of amenities and services to support delivery of goods to project occupants
4. Family-Oriented Measures: Provision of on-site childcare and other amenities to support the use of sustainable transportation modes by families
5. High-Occupancy Vehicles: Provision of carpooling/vanpooling incentives and shuttle bus service
6. Information: Provision of multimodal wayfinding signage, transportation information displays, and tailored transportation marketing services
7. Land Use: Provision of on-site affordable housing and healthy food retail services in underserved areas
8. Parking: Provision of unbundled parking, short term daily parking provision, parking cash out offers, and reduced off-street parking supply.

²⁵⁰ San Francisco Planning Department, *Draft TDM Program Standards*, July 2016, and accompanying appendices. The most up-to-date *Draft TDM Program Standards* and accompanying appendices are available at <http://sf-planning.org/tdm-materials-and-resources>. Accessed on September 19, 2016.

Mitigation Measure M-NO-1b: Siting of Noise-Generating Uses. To reduce potential conflicts between existing sensitive receptors and new noise-generating uses, for new development including PDR, Places of Entertainment, or other uses that would potentially generate noise levels substantially in excess of ambient noise (either short-term during the nighttime hours, or as a 24-hour average), the Planning Department shall require the preparation of a noise 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 so as to be able to accurately describe maximum levels reached during nighttime hours), 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 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, and the incorporation of noise reduction measures as recommended by the noise assessment.

Significance after Mitigation: Implementation of Mitigation Measure M-NO-1b, Siting of Noise Generating Uses, and compliance with the *San Francisco Building Code*, *San Francisco Green Building Code*, and Regulation of Noise from Places of Entertainment would reduce noise impacts to the maximum extent feasible, consistent with the *San Francisco General Plan*, and would render impacts less than significant with respect to exposure of new residential receptors and other new sensitive land uses to excessive noise levels or permanent increases in ambient noise resulting from implementation of the Plan. However, existing sensitive land uses would be adversely affected by increased traffic noise levels generated by Plan traffic on Howard Street under two-way Howard and Folsom Streets network changes. This impact could be substantially reduced by implementation of Mitigation Measure M-NO-1a, but it is uncertain the degree to which this mitigation measure could reduce traffic noise to a less-than-significant level. Therefore, this impact is considered *significant and unavoidable* for the development of the Plan in combination with two-way street network changes only.

Construction-Related Noise Increases

Impact NO-2: Development under the Plan, including the proposed street network changes and open space improvements, would result in construction activities in the Plan Area that could expose persons to substantial temporary or periodic increases in noise levels substantially in excess of ambient levels. (Significant and Unavoidable with Mitigation)

Development under the Plan

Development that could result from implementation of the Plan would result in construction of new buildings, demolition, or retrofitting (if applicable) near existing residential or other noise-sensitive uses. Increased ambient noise levels from construction would be considered short-term and intermittent.

Construction activity noise levels at and near any construction site would fluctuate depending on the particular type, number, and duration of use of various pieces of construction equipment. Construction-related material haul trips would increase ambient noise levels along haul routes, with the magnitude of the

increase depending on the number of haul trips made and types of vehicles used. In addition, certain types of construction equipment generate percussive noises (such as pile driving), which can be particularly annoying. Due to the programmatic nature of the Plan, it is assumed that at least some development in the Plan Area would necessitate pile driving. **Table IV.E-6, Typical Construction Equipment Noise Levels**, shows typical noise levels generated by construction equipment.

TABLE IV.E-6 TYPICAL CONSTRUCTION EQUIPMENT NOISE LEVELS

Construction Equipment	Noise Level at 50 Feet (dB, L_{max})	Noise Level at 100 Feet (dB, L_{max})
Impact Pile Driver ^a	101 (intermittent)	95 (intermittent)
Hoe Ram (Impact Hammer) ^a	90	84
Concrete Saw	90	84
Jackhammer ^a	89	83
Grader	85	79
Auger Drill Rig	84	78
Tractor	84	78
Bulldozer	82	76
Concrete Pump Truck	81	75
Excavator	81	75
Crane	81	75
Roller	80	74
Front End Loader	79	73
Air Compressor	78	72
Backhoe	78	72
Paver	77	71
Dump Truck	76	70

SOURCE: Federal Highway Administration, *Roadway Construction Noise Model User's Guide*, 2006.

NOTE:

a. Impact Tool.

Construction of probable future projects in the Plan Area could occur adjacent to or near noise-sensitive receptors. As indicated in **Table IV.E-7, Vibration Levels for Construction Equipment**, p. IV.E-28, the noise level associated with, for example, a concrete saw, is 90 dBA at 50 feet and 84 dBA at 100 feet, which would substantially exceed the ambient noise levels of approximately 70 to 75 dBA, as described in the Environmental Setting and, absent noise controls, would exceed the limit specified in the *Police Code* of 80 dBA at 100 feet. This would be a significant impact. Similar noise levels could be reached with operation of multiple pieces of construction equipment, on the same site or on multiple sites, depending on their distance from sensitive receptors. Similarly, the duration of noise experienced by receptors may be increased due to overlapping construction projects. Compliance with the *Police Code* and implementation of **Mitigation Measure M-NO-2a, General Construction Noise-Control Measures**, would reduce construction noise to the maximum feasible extent. With implementation of this measure, construction noise from individual

development projects within the Plan Area would be reduced to levels that would not substantially exceed ambient noise, thus reducing potential construction-related noise impacts on adjacent or nearby noise-sensitive receptors to a less-than-significant level at individual development sites. However, if multiple projects were under construction simultaneously in close proximity to the same sensitive receptors, the combined effect of these construction noise impacts may result in noise levels for which the available, feasible measures identified in Mitigation Measure M-NO-2a would be insufficient to reduce noise impacts to a less-than-significant level. Therefore, potential construction-related noise impacts on adjacent or nearby noise-sensitive receptors would be *significant and unavoidable*.

In the event that pile driving is required for a subsequent development project, the sponsor of that project would be required to implement **Mitigation Measure M-NO-2b, Noise Control Measures for Pile Driving**, which would reduce pile-driving noise impacts to a less-than-significant level at individual development sites. However, as stated above for standard construction noise impacts, if multiple projects involving pile driving were to be under construction simultaneously in close proximity to the same sensitive receptors, the combined effect of these noise impacts may result in noise levels for which the available, feasible measures identified in Mitigation Measure M-NO-2b would be insufficient to reduce the construction-related noise impacts to a less-than-significant level. Therefore, adverse impacts from pile-driving noise upon sensitive receptors near multiple construction sites would be *significant and unavoidable*.

Proposed Street Network Changes and Proposed Open Space Improvements

Proposed street network changes and open space improvements in the Plan Area would include use of similar construction equipment as would development projects, although typically for a lesser duration and generally with fewer pieces of equipment than for a major development. Accordingly, construction noise impacts would be similar to, or somewhat less substantial than, those for subsequent development projects. Pile driving would not be necessary for the street network changes or open space improvements, but they could require the use of jackhammers. Construction of open space improvements and street network changes that require the use of impact tools could result in significant construction noise impacts. Accordingly, Mitigation Measure M-NO-2a would reduce construction noise impacts from individual open space and street network projects to a less-than-significant level. However, as stated above, construction noise from multiple projects, such as construction along city streets in proximity to construction of a subsequent development project could result in construction noise at nearby sensitive receptor locations that cannot be reduced to less than significant with mitigation and would therefore be considered *significant and unavoidable*. Mitigation Measure M-NO-2b would not be applicable to the street network changes or open space improvements because pile driving would not be necessary.

Mitigation Measures

Mitigation Measure M-NO-2a: General Construction Noise Control Measures. To ensure that project noise from construction activities is reduced to the maximum extent feasible, the project sponsor of a development project in the Plan Area that is within 100 feet of noise-sensitive receptors shall undertake the following:

- Require the general contractor to ensure that equipment and trucks used for project construction utilize the best available noise control techniques (e.g., improved mufflers,

equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds), wherever feasible.

- Require the general contractor to locate stationary noise sources (such as compressors) as far from adjacent or nearby sensitive receptors as possible, to muffle such noise sources, and to construct barriers around such sources and/or the construction site, which could reduce construction noise by as much as five dBA. To further reduce noise, the contractor shall locate stationary equipment in pit areas or excavated areas, if feasible.
- Require the general contractor to use impact tools (e.g., jack hammers, pavement breakers, and rock drills) that are hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used, along with external noise jackets on the tools, which could reduce noise levels by as much as 10 dBA.
- Include noise control requirements in specifications provided to construction contractors. Such requirements could include, but are not limited to, performing all work in a manner that minimizes noise to the extent feasible; use of equipment with effective mufflers; undertaking the most noisy activities during times of least disturbance to surrounding residents and occupants, as feasible; and selecting haul routes that avoid residential buildings to the extent that such routes are otherwise feasible.
- Prior to the issuance of each building permit, along with the submission of construction documents, submit to the Planning Department and Department of Building Inspection (DBI) a list of measures that shall be implemented and that shall respond to and track complaints pertaining to construction noise. These measures shall include (1) a procedure and phone numbers for notifying DBI and the Police Department (during regular construction hours and off-hours); (2) a sign posted on-site describing noise complaint procedures and a complaint hotline number that shall be answered at all times during construction; (3) designation of an on-site construction complaint and enforcement manager for the project; and (4) notification of neighboring residents and non-residential building managers within 300 feet of the project construction area at least 30 days in advance of extreme noise generating activities (defined as activities generating anticipated noise levels of 80 dBA or greater without noise controls, which is the standard in the *Police Code*) about the estimated duration of the activity.

Mitigation Measure M-NO-2b: Noise and Vibration Control Measures during Pile Driving. For individual projects that require pile driving, a set of site-specific noise attenuation measures shall be prepared under the supervision of a qualified acoustical consultant. These attenuation measures shall be included in construction of the project and shall include as many of the following control strategies, and any other effective strategies, as feasible:

- The project sponsor of a development project in the Plan Area shall require the construction contractor to erect temporary plywood or similar solid noise barriers along the boundaries of the project site to shield potential sensitive receptors and reduce noise levels;
- The project sponsor of a development project in the Plan Area shall require the construction contractor to implement “quiet” pile-driving technology (such as pre-drilling of piles, sonic pile drivers, and the use of more than one pile driver to shorten the total pile driving duration), where feasible, with consideration of geotechnical and structural requirements and

soil conditions (including limiting vibration levels to the FTA's 0.5 inch per second PPV to minimize architectural damage to adjacent structures);

- The project sponsor of a development project in the Plan Area shall require the construction contractor to monitor the effectiveness of noise attenuation measures by taking noise measurements, at a distance of 100 feet, at least once per day during pile-driving; and
- The project sponsor of a development project in the Plan Area shall require that the construction contractor limit pile driving activity to result in the least disturbance to neighboring uses.

Significance after Mitigation: Implementation of Mitigation Measures M-NO-2a and M-NO-2b would reduce the noise impact from future construction throughout the Plan Area to a less-than-significant level from individual construction sites. However, as discussed in Chapter IV, Overview, under Subsequent Development Projects, a number of projects have environmental applications on file and are dependent upon the Central SoMa Plan's proposed zoning. It is possible that such projects, some of which are located in close proximity to each other, could be under construction at the same time. The combined effect of these noise impacts may result in noise levels for which available feasible mitigation measures may not be sufficient to reduce the impact to less than significant. Thus, this impact is conservatively judged to be *significant and unavoidable*.

Construction-Related Vibration Effects

Impact NO-3: Development under the Plan, including the proposed street network changes, would result in construction activities that could expose persons to temporary increases in vibration substantially in excess of ambient levels. (Less than Significant with Mitigation)

Development under the Plan

Construction in the Plan Area could potentially expose people to the impacts of excess groundborne vibration or noise levels. Specifically, vibration created through construction activities such as pile driving could occur adjacent to sensitive receptors.

As shown in **Table IV.E-7, Vibration Levels for Construction Equipment**, p. IV.E-28, pile driving can generate vibration levels as high as 1.518 in/sec PPV. Where pile driving is not required, use of heavy equipment for project construction can generate vibration levels up to 0.089 in/sec PPV at a distance of 25 feet, for the largest typical construction equipment such as a large bulldozer. Because most streets in the study area are 82.5 feet wide, vibration from construction would have the greatest effect on receptors on adjacent parcels. Vibration levels, measured as PPV, across the street from construction sites would be reduced by more than 80 percent. Other pieces of equipment, such as a small bulldozer, would result in lower vibration levels. Therefore, with the exception of pile driving, most construction activities would generate ground-borne vibration levels that would not exceed the FTA criterion of 0.5 in/sec PPV for structural damage to typical construction (reinforced concrete), a less-than-significant vibration impact. However, if pile driving is required, vibration levels at adjacent buildings (within 65 feet, allowing for a 25 percent safety factor) could exceed the FTA's criterion of 0.5 in/sec PPV for structural damage, resulting in a significant vibration impact. Additionally, multiple projects under construction could increase vibration, although vibration tends to

dissipate quickly with distance and therefore effects from one project would not typically combine to result in a significant vibration impact from multiple simultaneous projects constructed under the Plan. Implementation of Mitigation Measure M-NO-2b, Noise and Vibration Control Measures during Pile Driving, would ensure that vibration impacts from any pile driving activities associated with future construction would be reduced to a *less-than-significant* level.

TABLE IV.E-7 VIBRATION LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	Peak Particle Velocity (PPV) (in/sec)
	At 25 Feet ^a
Pile Driver (upper range)	1.518
Pile Driver (typical)	0.644
Caisson Drilling, Large Bulldozer	0.089
Loaded Trucks	0.076
Jackhammer	0.035

SOURCE: FTA, *Transit Noise and Vibration Impact Assessment*, DTA-VA-90-1003-06, U.S. Department of Transportation, May 2006. Available on http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf (accessed February 1, 2012).

NOTE:

a. Vibration amplitudes for construction equipment assume normal propagation conditions.

Groundborne vibration associated with pile-driving activities could exceed the FTA criterion of 0.2 in/sec PPV for fragile buildings, which could affect historic resources, and result in a significant impact. Mitigation for this potential impact is addressed in Section IV.D, Cultural and Paleontological Resources. Mitigation identified in that section would require contractors to undertake certain best practices during construction and to conduct pre-construction surveys of historical resources within 125 feet of proposed construction (to allow for a 25 percent safety factor) and to conduct construction-period monitoring of these resources to ensure that potential construction impacts would be reduced by the maximum feasible degree, and would be *less than significant*.

Proposed Street Network Changes and Proposed Open Space Improvements

As with construction noise, vibration effects associated with construction of the proposed street network changes and open space improvements would be similar to, or somewhat less substantial than, those for subsequent development projects. However, because pile driving would not be necessary for the street network changes or open space improvements, vibration effects from the street network changes and open space improvements would be *less than significant*.

Mitigation: Implement **Mitigation Measures M-NO-2b, Noise and Vibration Control Measures During Pile Driving, M-CP-3a, Protect Historical Resources from Adjacent Construction Activities, and M-CP-3b, Construction Monitoring Program for Historical Resources.**

Significance after Mitigation: Implementation of Mitigation Measures M-NO-2b, M-CP-3a, and M-CP-3b would reduce the vibration impact from future construction to a *less-than-significant* level.

IV.E.5 Cumulative Impacts

The cumulative context for noise impacts is the vicinity surrounding the Plan Area and proposed street network changes (i.e., the study area). The analysis considers traffic noise from cumulative growth, which was forecast for the EIR transportation analysis by the San Francisco Transportation Authority's citywide travel demand model.

Impact C-NO-1: Development under the Plan, including the proposed street network changes and open space improvements, in combination with past, present, and reasonably foreseeable future projects, would result in cumulative noise impacts. (Significant and Unavoidable with Mitigation)

Changes in traffic noise were evaluated between cumulative 2040 conditions without Plan implementation and the same three development scenarios (listed below). The three cumulative growth scenarios were also evaluated against the existing condition to ensure that cumulative effects were captured.²⁵¹ These five scenarios, listed below, result in seven cumulative traffic noise analysis scenario comparisons, which are shown in **Table IV.E-8, Cumulative Traffic Noise Analysis Scenario Comparisons**.

- Existing Conditions
- 2040 Cumulative (No Project)
- 2040 Cumulative + Growth Attributed to the Plan
- 2040 Cumulative + Growth Attributed to the Plan with Street Improvements (Folsom/Howard one-way)
- 2040 Cumulative + Growth Attributed to the Plan with Street Improvements (Folsom/Howard two-way)

TABLE IV.E-8 CUMULATIVE TRAFFIC NOISE ANALYSIS SCENARIO COMPARISONS

Change in Traffic Noise	Components of Change
From Existing to Cumulative 2040	Traffic noise from cumulative growth excluding Plan-generated growth
From Existing to Cumulative 2040 plus Plan Land Use	Traffic noise from cumulative growth and Plan-generated growth
From Cumulative 2040 to Cumulative 2040 plus Plan Land Use	Traffic noise from plan-generated growth only
From Existing to 2040 Cumulative plus Plan Land Use plus Street Network Changes (One-Way)	Traffic noise from cumulative Growth plus Plan growth plus Street Network Changes; Howard & Folsom remain one-way streets.
From Cumulative 2040 to Cumulative 2040 plus Plan Land Use plus Street Network Changes (One-Way)	Traffic noise from plan growth plus Street Network Changes; Howard & Folsom remain one-way streets.
From Existing to 2040 Cumulative plus Plan Land Use plus Street Network Changes (Two-Way)	Traffic noise from cumulative Growth plus Plan growth plus Street Network Changes; Howard & Folsom converted to two-way streets.
From Cumulative 2040 to Cumulative 2040 plus Plan Land Use plus Street Network Changes (Two-Way)	Traffic noise from plan growth plus Street Network Changes; Howard & Folsom converted to two-way streets.

²⁵¹ The first cumulative scenario, Cumulative 2040 (Scenario 8), includes background growth to the year 2040 and Plan Area growth consistent with existing use districts and height and bulk limits.

The results of the cumulative traffic noise modeling are shown in **Table IV.E-9, Cumulative plus Plan Traffic Noise Analysis**, and reveal that effects of Plan-generated and cumulative traffic growth would be relatively minimal overall. Of the 149 street segments, each evaluated for seven analysis scenario comparisons representing a change from existing or cumulative traffic noise to noise generated by Plan development and, in some cases, the proposed street network changes, 15 street segments would experience increases in traffic-generated noise that would exceed three dBA, which is generally considered the minimum change that is perceptible to humans. Cumulative traffic alone (without the Plan) would result in an increase of 3.1 dBA on Fourth Street between Brannan and Townsend Street (Column D in Table IV.E-9).

TABLE IV.E-9 CUMULATIVE PLUS PLAN TRAFFIC NOISE ANALYSIS

Reference Column	Exist.	Cumulative		Cumulative + Plan Land Uses			Cumulative + 1-Way Howard/Folsom			Cumulative + 2-Way Howard/Folsom		
		D		E	F		G	H		J	K	
Segment (Cross Streets)	Noise (dBA)	Noise (dBA)	Δ fr. Exist.	Noise (dBA)	Δ fr. Exist.	Δ fr. Cum.	Noise (dBA)	Δ fr. Exist.	Δ fr. Cum.	Noise (dBA)	Δ fr. Exist.	Δ fr. Cum.
Fourth (Bryant-Brannan)	68.5	70.7	2.2	70.9	2.3	0.1	70.7	2.2	0.0	71.6	3.1	0.9
Fourth (Brannan-Townsend)	69.0	72.1	3.1	71.7	2.7	0.4	71.4	2.4	-0.7	71.9	2.9	-0.2
Fifth (Bryant-Brannan)	71.2	74.0	2.8	74.5	3.3	0.4	73.6	2.4	-0.3	73.1	1.9	-0.9
Fifth (Brannan-Townsend)	68.8	70.0	1.1	71.5	2.7	1.6	72.0	3.1	2.0	71.2	2.3	1.2
Howard (Fifth-Sixth)	71.7	73.0	1.3	73.4	1.7	0.4	73.3	1.6	0.3	74.8	3.1	1.8
Howard (Sixth-Seventh)	70.6	72.2	1.5	72.8	2.2	0.6	72.3	1.7	0.1	74.1	3.5	2.0
Howard (Seventh-Eighth)	70.7	72.2	1.5	72.7	2.0	0.5	72.4	1.7	0.2	74.2	3.5	1.9
Howard (Eighth-Ninth)	71.0	72.1	1.1	72.6	1.6	0.5	72.3	1.3	0.1	74.7	3.7	2.6
Howard (Ninth-Tenth)	69.6	71.2	1.6	71.8	2.2	0.6	71.7	2.1	0.5	73.9	4.3	2.7
Howard (Tenth-Eleventh)	67.9	69.9	2.0	70.5	2.6	0.6	70.6	2.7	0.6	72.6	4.7	2.7
Howard west of Eleventh	66.9	68.4	1.5	68.2	1.3	-0.1	68.3	1.5	0.0	73.3	6.5	5.0
Bryant east of Second	66.5	68.9	2.4	69.3	2.8	0.4	69.6	3.0	0.6	69.7	3.2	0.8
Bryant (Third-Fourth)	70.4	72.3	1.9	72.7	2.3	0.3	73.1	2.7	0.8	73.6	3.2	1.2
Increases of 3.0 dB or more	15 (Total)		1		1	0		2	0		10	1

SOURCE: Environmental Science Associates.

NOTES:

Δ = Change

Bold-face type indicates significant impact (increase of 3.0 dBA or more over existing conditions).

It is also noted that not all of these noise increases would occur, and some are mutually exclusive (i.e., Howard and Folsom Streets would either operate as one-way or two way streets, so three dBA exceedances that occur under one of these operational scenarios would not occur if the other scenario were implemented). As shown in Table IV.E-9, two-way operation of Howard and Folsom Streets would result in a substantially greater number of street segments experiencing significant noise impacts because this scenario would be anticipated to shift a relatively large amount of traffic from Folsom Street to Howard Street.

Traffic Generated by Development Under the Plan

When Plan growth alone is added to the 2040 baseline cumulative condition, traffic noise increases would generally be less than three dBA. However, when this analysis scenario is compared to existing conditions, one street segment on Fifth Street between Bryant and Brannan Streets would experience a noise increase greater than three dBA (Column E in Table IV.E-9); this would be a significant cumulative impact. However, the Plan contribution would be minimal (less than 0.5 dBA) and thus not a considerable contribution to the significant cumulative impact. By 2040, cumulative traffic growth alone (without the Plan) would increase the percentage of street segments with traffic noise levels of 70 dBA (L_{dn}) or greater from 74 percent under existing conditions to 83 percent. With Plan growth, it would increase further to 86 percent.

Proposed Street Network Changes

Comparing existing noise levels with the 2040 cumulative plus Plan scenario with street network changes, Howard Street between Fifth and 11th Streets would experience the greatest increases in traffic noise of three dBA or greater due to a combination of cumulative growth, Plan growth, and two-way operation of Howard and Folsom Streets and this would be a significant cumulative impact (Column J in Table IV.E-9). For the entire portion of Howard Street west of Fifth Street, the proposed two-way street network changes—which would result in traffic volumes increasing by a greater degree on Howard Street—would be responsible for between about 40 percent and 70 percent of the cumulative increase in traffic noise. In addition, a significant cumulative impact would occur on Fourth Street between Bryant and Brannan Streets and on Bryant Street east of Fourth Street (Column J in Table IV.E-9). Here, the two-way street network change would result in about one-third of the increase in traffic noise. Therefore, Plan growth plus the street network changes with two-way operation of Howard and Folsom Streets would make a considerable contribution to cumulative significant traffic noise impacts. Plan growth plus the street network changes with one-way operation of Folsom and Howard Streets would likewise make a considerable contribution to cumulative significant traffic noise impacts, albeit at fewer locations: there would be only two street segments under one-way operations with traffic noise increases greater than three dBA (Fifth Street between Brannan and Townsend Streets and Bryant Street east of Second Street), and Plan traffic would increase noise by 0.6 dBA or more (20 percent or more of the increase). Under both the land use plan plus one-way and two-way options for Folsom and Howard Streets, the impact would be *significant and unavoidable* with mitigation for existing noise-sensitive land uses, and *less than significant* for new development.

Cumulative Construction Noise

Cumulative construction impacts would occur from other projects in the vicinity. As discussed in Chapter VI, Approach to Cumulative Analysis, there are several projects for which the Planning Department has applications on file in the Plan Area. The simultaneous construction of projects dependent upon the Plan is addressed in the Plan-level analysis (Impact NO-2). Other cumulative projects include 5M, 706 Mission, Moscone Center Expansion, and the Central Subway, all of which are expected to be completed prior to construction of subsequent develop projects or streetscape and open space improvements enabled by the Plan. Thus, the construction from Plan projects would not overlap with construction of these projects to result in cumulative construction noise impacts. Other cumulative projects include Better Market Street and the Sixth Street Improvement Project. However, these projects are located outside the Plan Area and because streetscape projects are typically constructed block by block, they would not impact a nearby receptor for a substantial amount of time. Additionally, noise would attenuate with distance as streetscape projects advance away from the receptor. Therefore, it is not anticipated that construction noise from these projects would combine with that of subsequent development projects to result in a significant cumulative construction noise impact. Therefore, cumulative construction noise impacts would be *less than significant*.

IV.F Air Quality

IV.F.1 Introduction

This section addresses air quality impacts that could result from implementation of the Central SoMa Plan and from proposed changes in the Plan Area street network, including proposed street network changes that would extend beyond the boundaries of the Plan Area. This section discusses the existing air quality conditions in the Plan Area and vicinity, presents the regulatory framework for air quality management, and analyzes the potential for implementation of the proposed Plan, including the street network changes, to affect existing air quality conditions, both regionally and locally, due to activities that emit criteria and non-criteria air pollutants. It also analyzes the types and quantities of emissions that would be generated on a temporary basis due to construction activities as well as those generated over the long term due to development in the Plan Area. The analysis determines whether those emissions are significant in relation to applicable air quality standards and identifies feasible mitigation measures for significant adverse impacts. Emissions of greenhouse gases resulting from the proposed project's potential impacts on climate change and the State's goals for greenhouse gas emissions pursuant to Assembly Bill 32 were addressed in the Initial Study and determined to be less than significant (see Appendix B).

The study area for regional air quality impacts is the San Francisco Bay Area Air Basin (SFBAAB). The study area for localized air quality impacts is generally the same as for transportation impacts bounded by Market, Second, King and Sixth Streets (see Figure IV.D-1, Transportation Study Area). Some of the proposed streetscape improvements extend beyond the area of proposed land use changes, and because some transportation-related air quality effects of the proposed land use program may extend beyond the area to be rezoned, the study area for localized air quality impacts was expanded beyond the Plan Area boundaries. The study area also extends to Mission, 12th, and Bryant Streets on the west, and Folsom Street, The Embarcadero, and Bryant Street on the east, and Market, Second, and Sixth Streets on the north.

The analysis in this section is based on a review of existing air quality conditions in the region and air quality regulations administered by the United States Environmental Protection Agency (EPA), the California Air Resources Board (ARB), and the Bay Area Air Quality Management District (BAAQMD). This analysis includes methodologies identified in the 2012 BAAQMD *CEQA Air Quality Guidelines* and the health risk assessment methodology published by the Office of Environmental Health Hazard Assessment (OEHHA) in 2015.^{252,253}

²⁵² BAAQMD, *California Environmental Quality Act Air Quality Guidelines*, May 2012. Available at http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en. Accessed October 12, 2016.

²⁵³ California Environmental Protection Agency, *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessment*, February 2015. Available at <http://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>. Accessed October 12, 2016.

IV.F.2 Environmental Setting

The Plan Area is within the SFBAAB, which includes all of San Francisco, Alameda, Contra Costa, Marin, San Mateo, Santa Clara, and Napa counties, and the southern and southwestern portions, respectively, of Sonoma and Solano counties. BAAQMD is the regional agency responsible for air quality planning in the Air Basin.

Climate and Meteorology

The SFBAAB's moderate climate steers storm tracks away from the region for much of the year, although storms generally affect the region from November through April. San Francisco's proximity to the onshore breezes stimulated by the Pacific Ocean provides for generally good air quality in the Plan Area and the city as a whole.

Temperatures in the Plan Area vicinity average in the mid-50s annually, generally ranging from the low 40s on winter mornings to mid-70s during summer afternoons. Daily and seasonal oscillations of temperature are small because of the moderating effects of the San Francisco Bay. In contrast to the steady temperature regime, rainfall is highly variable and confined almost exclusively to the "rainy" period from November through April. Precipitation may vary widely from year to year as a shift in the annual storm track of a few hundred miles can mean the difference between a wet year and drought conditions.

Atmospheric conditions—such as wind speed, wind direction, and air temperature gradients—interact with the physical features of the landscape to determine the movement and dispersal of air pollutants regionally. The Plan Area lies within the Peninsula climatological subregion. Marine air traveling through the Golden Gate is a dominant weather factor affecting dispersal of air pollutants within the region. Wind measurements collected on the San Francisco mainland indicate a prevailing wind direction from the west and an average annual wind speed of 10.6 miles per hour.²⁵⁴ Increased temperatures create the conditions in which ozone formation can increase.

Ambient Air Quality - Criteria Air Pollutants

As required by the 1970 Federal Clean Air Act, the EPA initially identified six criteria air pollutants that are pervasive in urban environments and for which State and federal health-based ambient air quality standards have been established. EPA calls these pollutants "criteria air pollutants" because the agency has regulated them by developing specific public-health-based and welfare-based criteria as the basis for setting permissible levels. Ozone, carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead are the six criteria air pollutants originally identified by EPA. Since that time, subsets of particulate matter have been identified for which permissible levels have been established. These include particulate matter of 10 microns in diameter or less (PM₁₀) and particulate matter of 2.5 microns in diameter or less (PM_{2.5}). Refer to Section IV.F.3, Regulatory Framework, for further detail with regard to specific pollutants and their attainment status within the SFBAAB with respect to State and federal air quality standards.

The region's air quality monitoring network provides information on ambient concentrations of criteria air pollutants at various locations in the San Francisco Bay Area. **Table IV.F-1, Summary of San Francisco Air**

²⁵⁴ <http://www.wrcc.dri.edu/htmlfiles/westwinddir.html#CALIFORNIA>. Accessed October 11, 2016.

Quality Monitoring Data (2011–2015), presents a five-year summary for the period 2011 to 2015 of the highest annual criteria air pollutant concentrations, collected at the air quality monitoring station operated and maintained by BAAQMD at Sixteenth and Arkansas Streets, in San Francisco's lower Potrero Hill area, which is the closest monitoring station to the Plan Area, one mile to the south. Table IV.F-1 also compares measured pollutant concentrations with the most stringent applicable ambient air quality standards (State or federal). Concentrations shown in bold indicate an exceedance of the standard. Table IV.F-1 does not include SO₂ because monitors are not required for the Bay Area as SFBAAB has never been designated as non-attainment for SO₂.

TABLE IV.F-1 SUMMARY OF SAN FRANCISCO AIR QUALITY MONITORING DATA (2011–2015)

Pollutant	Most Stringent Applicable Standard	Number of Days Standards Were Exceeded and Maximum Concentrations Measured ^a				
		2011	2012	2013	2014	2015
Ozone						
Days 1-Hour Standard Exceeded	>0.090 ppm ^b	0	0	0	0	0
Maximum 1-Hour Concentration (ppm)		0.070	0.069	0.069	0.079	0.085
Days 8-Hour Standard Exceeded		0	0	0	0	0
Maximum 8-Hour Concentration (ppm)		>0.070 ppm ^c	0.054	0.048	0.059	0.069
Carbon Monoxide (CO)						
Days 1-Hour Standard Exceeded	>20 ppm ^b	0	0	0	0	0
Maximum 1-Hour Concentration (ppm)		1.8	2.0	1.8	1.6	1.8
Days 8-Hour Standard Exceeded		0	0	0	0	0
Maximum 8-Hour Concentration (ppm)		>9 ppm ^b	1.2	1.2	1.4	1.2
Suspended Particulates (PM ₁₀)						
Days 24-Hour Standard Exceeded	>50 µg/m ^{3b}	0	1	0	0	0
Maximum 24-Hour Concentration (µg/m ³)		46	51	44	36	47
Suspended Particulates (PM _{2.5})						
Days 24-Hour Standard Exceeded ^d	>35 µg/m ^{3c}	2	1	2	0	0
Maximum 24-Hour Concentration (µg/m ³)		47.5	35.7	48.5	33.2	35.4
Annual Average (µg/m ³)		>12 µg/m ^{3b, c}	9.5	8.2	10.1	7.7
Nitrogen Dioxide (NO ₂)						
Days 1-Hour Standard Exceeded	>0.100 ppm ^c	0	1	0	0	0
Maximum 1-Hour Concentration (ppm)		0.093	0.124	0.073	0.084	0.071

SOURCE: BAAQMD, Bay Area Air Pollution Summary, 2011–2015. Available at: <http://www.baaqmd.gov/about-air-quality/air-quality-summaries>.

NOTES:

Bold values are in excess of applicable standard.

ppm = parts per million; µg/m³ = micrograms per cubic meter

- Number of days exceeded is for all days in a given year, except for particulate matter. PM₁₀ was monitored every six days prior to 2013 and every 12 days thereafter. Therefore the number of days exceeded is out of approximately 60 annual samples and 30 annual samples during these respective periods.
- State standard, not to be exceeded.
- Federal standard, not to be exceeded.
- Federal standard was reduced from 65 µg/m³ to 35 µg/m³ in 2006.

Ozone

Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG, also sometimes referred to as volatile organic compounds or VOC by some regulating agencies) and nitrogen oxides (NO_x). The main sources of ROG and NO_x, often referred to as ozone precursors, are combustion processes (including motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the Bay Area, automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases, such as asthma, bronchitis, and emphysema.

Table IV.F-1 shows that, according to published data, the most stringent applicable standards (State one-hour standard of nine parts per hundred million [pphm] and the federal eight-hour standard of eight pphm) were not exceeded in San Francisco between 2011 and 2015. Measurements of ozone indicate hourly maximums ranging between 77 to 94 percent of the State standard, and maximum eight-hour ozone levels that are approximately 69 to 99 percent of the more stringent federal eight-hour standard.

Carbon Monoxide

CO is an odorless, colorless gas usually formed as a result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles; the highest emissions occur during low travel speeds, stop-and-go driving, cold starts, and hard acceleration. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue; impair central nervous system function; and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal. As shown in Table IV.F-1, the more stringent State CO standards were not exceeded between 2011 and 2015. Measurements of CO indicate hourly maximums ranging between eight and 10 percent of the more stringent State standard, and maximum eight-hour CO levels that are approximately 13 to 16 percent of the allowable eight-hour standard.

Particulate Matter (PM₁₀ and PM_{2.5})

Particulate matter is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from man-made and natural sources. Particulate matter regulated by the State and Federal Clean Air Acts is measured in two size ranges: PM₁₀ 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 one-half of the SFBAAB'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 ARB, studies in the United States and elsewhere "have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks," and studies of children's health in California have demonstrated that particle pollution "may significantly reduce lung function growth in children." ARB also reports that statewide attainment of particulate matter standards could prevent thousands of premature deaths, lower hospital admissions for cardiovascular and respiratory disease and asthma-related emergency room visits, and

avoid hundreds of thousands of episodes of respiratory illness in California. Among the criteria pollutants that are regulated, particulates appear to represent a serious ongoing health hazard. As long ago as 1999, BAAQMD was reporting, in its *CEQA Air Quality Guidelines*, that studies had shown that elevated particulate levels contribute to the death of approximately 200 to 500 people per year in the Bay Area. High levels of particulate matter can exacerbate chronic respiratory ailments, such as bronchitis and asthma, and have been associated with increased emergency room visits and hospital admissions.

Table IV.F-1 shows that an exceedance of the State PM_{10} standard occurred on one monitored occasion between 2011 and 2015 in San Francisco. It is estimated that the State 24-hour PM_{10} standard of 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) was exceeded on up to six days per year between 2011 and 2015.²⁵⁵ BAAQMD began monitoring $PM_{2.5}$ concentrations in San Francisco in 2002. Unlike PM_{10} , $PM_{2.5}$ is continuously monitored daily. The federal 24-hour $PM_{2.5}$ standard was not exceeded until 2006, when the standard was lowered from 65 $\mu\text{g}/\text{m}^3$ to 35 $\mu\text{g}/\text{m}^3$. The federal 24-hour $PM_{2.5}$ standard was exceeded on five days per year between 2011 and 2015.²⁵⁵ The State annual average standard was not exceeded between 2011 and 2015.

$PM_{2.5}$ is of particular concern because epidemiologic studies have demonstrated that people who live near freeways and high-traffic roadways have poorer health outcomes, including increased asthma symptoms and respiratory infections, and decreased pulmonary function and lung development in children.²⁵⁶

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. In 2010, EPA implemented a new 1-hour NO_2 standard presented in **Table IV.F-2, State and Federal Ambient Air Quality Standards and Attainment Status**. On November 15, 2012, the ARB approved a revision to the State Implementation Plan for implementing the 2010 federal NO_2 standards. All areas in California are designated as attainment/unclassified for the federal NO_2 standards.²⁵⁷ Table IV.F-1 shows that this new federal standard was exceeded on one day at the San Francisco station between 2011 and 2015.

EPA has also established requirements for a new monitoring network to measure NO_2 concentrations near major roadways in urban areas with a population of 500,000 or more. Sixteen new near-roadway monitoring sites are required in California, three of which will be in the Bay Area. These monitors are planned for Berkeley, Oakland, and San Jose. The Oakland station commenced operation in February 2014, and the San Jose station in August 2014. The Berkeley station is not yet operational but is due to begin monitoring by the end of 2016. The new

²⁵⁵ PM_{10} was sampled every sixth day prior to 2013 and every 12 days thereafter; therefore, actual days over the standard can be estimated to be six times the numbers listed in the table for years 2011 and 2012, and 12 times the numbers listed in the table for year 2013, 2014 and 2015.

²⁵⁶ San Francisco Department of Public Health, Assessment and Mitigation of Air Pollutant Health Effect from Intra-urban Roadways: Guidance for Land Use Planning and Environmental Review, May 2008, p. 7. Available at <http://www.sfhealthequity.org/component/downloads/summary/3-air/90-assessment-and-mitigation-of-air-pollutant-health-effects-from-intra-urban-roadways-guidance-for-land-use-planning-and-environmental-review?Itemid=62>.

²⁵⁷ ARB, State Implementation Plan Revision for Federal Nitrogen Dioxide Standard Infrastructure Requirements, October 2012. Available at <http://www.arb.ca.gov/design/no2isip.pdf>.

monitoring data may result in a need to change area designations in the future. ARB will revise the area designation recommendations, as appropriate, once the new monitoring data become available.

TABLE IV.F-2 STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS

Pollutant	Averaging Time	State (SAAQs ^a)		Federal (NAAQS ^b)	
		Standard	Attainment Status	Standard	Attainment Status
Ozone	1 hour	0.09 ppm	N	NA	See Note c
	8 hour	0.07 ppm	U ^d	0.075 ppm	N/Marginal
Carbon Monoxide (CO)	1 hour	20 ppm	A	35 ppm	A
	8 hour	9 ppm	A	9 ppm	A
Nitrogen Dioxide (NO ₂)	1 hour	0.18 ppm	A	0.100 ppm	U
	Annual	0.030 ppm	NA	0.053 ppm	A
Sulfur Dioxide (SO ₂)	1 hour	0.25 ppm	A	0.075	A
	24 hour	0.04 ppm	A	0.14	A
	Annual	NA	NA	0.03 ppm	A
Particulate Matter (PM ₁₀)	24 hour	50 µg/m ³	N	150 µg/m ³	U
	Annual ^e	20 µg/m ^{3 f}	N	NA	NA
Fine Particulate Matter (PM _{2.5})	24 hour	NA	NA	35 µg/m ³	N
	Annual	12 µg/m ³	N	12 µg/m ³	A
Sulfates	24 hour	25 µg/m ³	A	NA	NA
Lead	30 day	1.5 µg/m ³	A	NA	NA
	Cal. Quarter	NA	NA	1.5 µg/m ³	A
Hydrogen Sulfide	1 hour	0.03 ppm	U	NA	NA
Visibility-Reducing Particles	8 hour	See Note g	A	NA	NA

SOURCES: Bay Area Air Quality Management District (BAAQMD), Standards and Attainment Status, 2012, http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm, accessed April 19, 2013; and EPA National Ambient Air Quality Standards, 2011, <http://www.epa.gov/air/criteria.html>, accessed April 19, 2013.

NOTES:

A = Attainment; N = Nonattainment; U = Unclassified; NA = Not Applicable, no applicable standard; ppm = parts per million; µg/m³ = micrograms per cubic meter.

- SAAQS = State ambient air quality standards (California). SAAQS for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All other State standards shown are values not to be equaled or exceeded.
- NAAQS = national ambient air quality standards. NAAQS, other than ozone and particulates, and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The 8-hour ozone standard is attained when the three-year average of the fourth highest daily concentration is 0.08 ppm or less. The 24-hour PM₁₀ standard is attained when the three-year average of the 99th percentile of monitored concentrations is less than the standard. The 24-hour PM_{2.5} standard is attained when the three-year average of the 98th percentile is less than the standard.
- The United States Environmental Protection Agency (EPA) revoked the national 1-hour ozone standard on June 15, 2005.
- This State 8-hour ozone standard was approved in April 2005 and became effective in May 2006.
- State standard = annual geometric mean; national standard = annual arithmetic mean.
- In June 2002, The California Air Resources Board (ARB) established new annual standards for PM_{2.5} and PM₁₀.
- Statewide visibility-reducing particle standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Sulfur Dioxide

SO₂ 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. SO₂ 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.^{258, 259} Sulfur dioxide monitoring was terminated at the San Francisco station in 2009 because the State standard for SO₂ is being met in the Bay Area, and pollutant trends suggest that the SFBAAB will continue to meet this standard for the foreseeable future.

In 2010, the EPA implemented a new one-hour SO₂ standard presented in Table IV.F-2. The EPA has initially designated the SFBAAB as an attainment area for SO₂. Similar to the new federal standard for NO₂, the EPA has established requirements for a new monitoring network to measure SO₂ concentrations.²⁶⁰ No additional SO₂ monitors are required for the Bay Area because the SFBAAB has never been designated as non-attainment for SO₂ and no State Implementation Plan (SIP) or maintenance plans have been prepared for SO₂.²⁶¹

Lead

Leaded gasoline (phased out in the United States beginning in 1973), paint (on older houses, cars), smelters (metal refineries), and manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere. Lead has a range of adverse neurotoxic health effects, which put children at special risk. Some lead-containing chemicals cause cancer in animals. Lead levels in the air have decreased substantially since leaded gasoline was eliminated. Ambient lead concentrations are only monitored on an as-warranted, site-specific basis in California. On October 15, 2008, EPA strengthened the national ambient air quality standard for lead by lowering it from 1.5 µg/m³ to 0.15 µg/m³. EPA revised the monitoring requirements for lead in December 2010. These requirements focus on airports and large urban areas resulting in an increase in 76 monitors nationally.²⁶² Lead monitoring stations in the Bay Area are located at Palo Alto Airport, Reid-Hillview Airport (San Jose) and San Carlos Airport. Non-airport locations for lead monitoring are Redwood City and San Jose.

Air Quality Index

The EPA developed the Air Quality Index (AQI) scale, to make the public health impacts of air pollution concentrations easily understandable. The AQI, much like an air quality “thermometer,” translates daily air pollution concentrations into a number on a scale between 0 and 500. The numbers in the scale are divided into six color-coded ranges, with numbers 0–300 as outlined below:

²⁵⁸ BAAQMD, *CEQA Guidelines*, p. B-2.

²⁵⁹ BAAQMD, *CEQA Air Quality Guidelines*, May 2011. Available at <http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines%20May%202011.ashx>; p. C-16.

²⁶⁰ EPA, Fact Sheet: Revisions to the Primary National Ambient Air Quality Standard, Monitoring Network, and Data Reporting Requirements for Sulfur Dioxide. Available at <http://www.epa.gov/air/sulfurdioxide/pdfs/20100602fs.pdf>

²⁶¹ BAAQMD, *2012 Air Monitoring Network Plan*, July 2013. Available at www.baaqmd.gov/Divisions/Technical-Services/Ambient-Air-Monitoring/AAMN-Plan.aspx; p. 30

²⁶² EPA, Fact Sheet Revisions to Lead Ambient Air Quality Monitoring Requirements, http://www.epa.gov/air/lead/pdfs/Leadmonitoring_FS.pdf.

- Green (0–50) indicates “good” air quality. No health impacts are expected when air quality is in the green range.
- Yellow (51–100) indicates air quality is “moderate.” Unusually sensitive people should consider limited prolonged outdoor exertion.
- Orange (101–150) indicates air quality is “unhealthy for sensitive groups.” Active children and adults, and people with respiratory disease, such as asthma, should limit outdoor exertion.
- Red (151–200) indicates air quality is “unhealthy.” Active children and adults, and people with respiratory disease, such as asthma should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.
- Purple (201–300) indicates air quality is “very unhealthy.” Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit outdoor exertion.

The AQI numbers refer to specific amounts of pollution in the air, and are based on the federal air quality standards for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM₁₀ and PM_{2.5}. In most cases, the federal standard for these air pollutants corresponds to the number 100 on the AQI chart. If the concentration of any of these pollutants rises above its respective standard, it can be unhealthy for the public. In determining the air quality forecast, local air districts, including the BAAQMD, use the anticipated concentration measurements for each of the major pollutants, convert them into AQI numbers, and determine the highest AQI for each zone in a district.

Readings below 100 on the AQI scale would not typically affect the health of the general public (although readings in the moderate range of 50 to 100 may affect unusually sensitive people). Levels above 300 rarely occur in the United States, and readings above 200 have not occurred in the Bay Area in decades.²⁶³ Historical BAAQMD data indicates that the SFBAAB experienced air quality in the Red level (unhealthy) on three days between the years 2010 and 2014. As shown in **Table IV.F-3, Air Quality Index Statistics for the San Francisco Bay Area Air Basin**, the SFBAAB had a total of 14 Orange-level (unhealthy for sensitive groups) days in 2010, 12 days in 2011, 8 days in 2012, 15 days in 2013, and 11 days 2014.

**TABLE IV.F-3 AIR QUALITY INDEX STATISTICS FOR THE
SAN FRANCISCO BAY AREA AIR BASIN**

AQI Statistics for SFBAAB	Number of Days by Year				
	2010	2011	2012	2013	2014
Unhealthy for Sensitive Groups (Orange)	14	12	8	15	11
Unhealthy (Red)	1	0	0	1	1

SOURCE: Bay Area Air Quality Management District, 2016.

²⁶³ Bay Area Air Quality Management District, 2014. Website: sparetheair.org/Stay-Informed/Todays-Air-Quality/Air-Quality-Index.aspx.

Toxic Air Contaminants and Local Health Risks and Hazards

In addition to criteria air pollutants, plans and individual projects may directly or indirectly emit toxic air contaminants (TACs). TACs collectively refer to a diverse group of air pollutants that are capable of causing chronic (i.e., of long-duration) and acute (i.e., severe but short-term) adverse effects to human health, including carcinogenic effects. Human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

Unlike criteria air pollutants, TACs do not have ambient air quality standards but instead are regulated by BAAQMD using a risk-based approach to determine which sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated, and considered together with information regarding the toxic potency of the substances, to provide quantitative estimates of health risks.²⁶⁴

Exposure assessment guidance published by BAAQMD in January 2010 adopts the assumption that residences would be exposed to air pollution 24 hours per day, 350 days per year, for 70 years.²⁶⁵ Therefore, assessments of air pollutant exposure to residents typically result in the greatest adverse health outcomes of all population groups.

Exposures to PM_{2.5} are strongly associated with mortality, respiratory diseases, and reductions in lung development in children, and other endpoints such as hospitalization for cardiopulmonary disease.²⁶⁶ In addition to PM_{2.5}, diesel particulate matter (DPM) is also of concern. ARB identified DPM as a TAC in 1998, primarily based on evidence demonstrating cancer effects in humans.²⁶⁷ The estimated cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other TAC routinely measured in the region.

In an effort to identify areas of San Francisco most adversely affected by sources of TACs, San Francisco partnered with BAAQMD to inventory and assess air pollution and exposures from mobile, stationary, and area sources within San Francisco. Areas with poor air quality, termed the “Air Pollutant Exposure Zone,” were identified based on the following health-protective criteria: (1) excess cancer risk greater than 100 per one million population from the contribution of emissions from all modeled sources, or (2) cumulative PM_{2.5} concentrations greater than 10 µg/m³. The Air Pollutant Exposure Zone (APEZ) is expanded in certain geographic health vulnerable²⁶⁸ areas of the city, primarily the Bayview, Tenderloin, and much of the South of

²⁶⁴ In general, a health risk assessment is required if the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggest a potential public health risk. The applicant of the project that would emit TACs is then subject to a health risk assessment for the source in question. Such an assessment generally evaluates chronic, long-term effects, estimating the increased risk of cancer as a result of exposure to one or more TACs.

²⁶⁵ BAAQMD, *Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*, January 2010.

²⁶⁶ SFPDPH, *Assessment and Mitigation of Air Pollutant Health Effects from Intra-Urban Roadways: Guidance for Land Use Planning and Environmental Review*, May 2008.

²⁶⁷ California Air Resources Board, Fact Sheet, “The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines,” October 1998.

²⁶⁸ Health vulnerable areas were identified as those Bay Area zip codes in the worst quintile of Bay Area Health Vulnerability Scores. San Francisco Departments of Public Health and Planning. *Memorandum Re: 2014 Air Pollutant Exposure Zone Map*, April 9, 2014.

Market (SoMa) area, including the northern part of the Plan Area, to be more protective, with the areas included in the APEZ based on a standard that is 10 percent more stringent than elsewhere in the city (i.e., areas where the excess cancer risk exceeds 90 in one million or the PM_{2.5} concentration exceeds 9 µg/m³). The APEZ also includes all parcels within 500 feet of a freeway. **Figure IV.F-1, Air Pollutant Exposure Zone in the Plan Area and Street Network Changes**, shows the location of the APEZ within and nearby the Plan Area. The APEZ is based on modeling that was prepared using a 20-meter by 20-meter receptor grid covering the entire city. The majority of the Plan Area is located within the APEZ, primarily because of high traffic volumes on Plan Area streets. There are also a number of individual sources of TACs in the Plan Area, including diesel generators, gasoline stations, auto body repair shops, and other light industrial activities.

Excess Cancer Risk

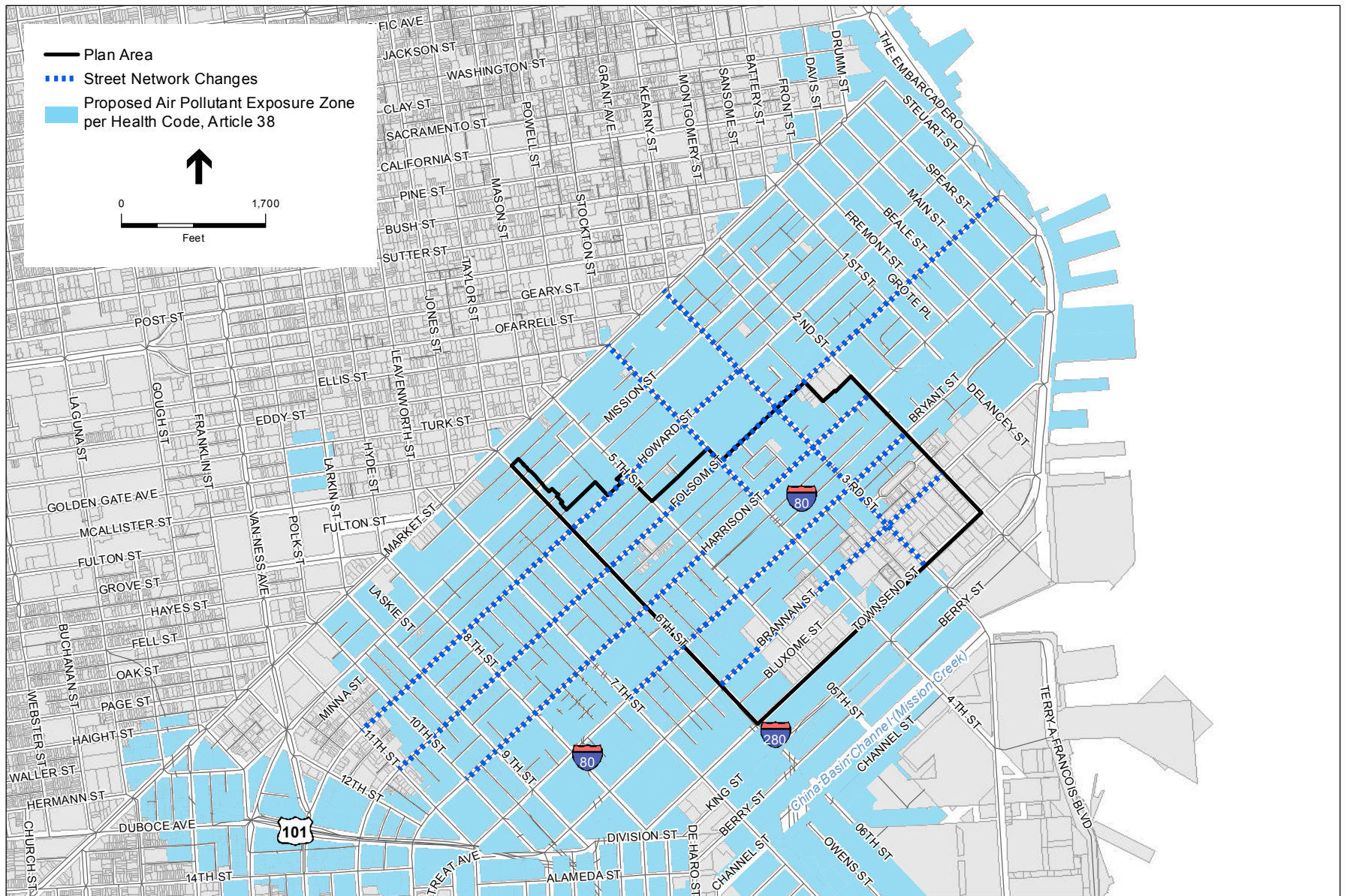
The greater than 100 per one million persons exposed (100 excess cancer risk) criterion for defining the Air Pollution Exposure Zone is based on EPA guidance for conducting air toxic analyses and making risk management decisions at the facility and community-scale level.²⁶⁹ As described by the BAAQMD, the EPA considers a cancer risk of 100 per million to be within the “acceptable” range of cancer risk. Furthermore, in the 1989 preamble to the benzene National Emissions Standards for Hazardous Air Pollutants (NESHAP) rulemaking,²⁷⁰ EPA states that it “... strives to provide maximum feasible protection against risks to health from hazardous air pollutants by (1) protecting the greatest number of persons possible to an individual lifetime risk level no higher than approximately one in one million and (2) limiting to no higher than approximately one in ten thousand [100 in one million] the estimated risk that a person living near a plant would have if he or she were exposed to the maximum pollutant concentrations for 70 years.” The 100 per one million excess cancer risk is also consistent with the ambient cancer risk in the most pristine portions of the Bay Area based on BAAQMD regional modeling.²⁷¹

In addition to monitoring criteria pollutants, both the BAAQMD and ARB operate TAC monitoring networks in the SFBAAB. These stations measure 10 to 15 TACs, depending on the specific station. The TACs selected for monitoring are those that have traditionally been found in the highest concentrations in ambient air and therefore tend to produce the most substantial risk. The nearest BAAQMD ambient TAC monitoring station to the Plan Area is the station at Sixteenth and Arkansas Streets in San Francisco. **Table IV.F-4, Annual Average Ambient Concentrations of Carcinogenic Toxic Air Contaminants Measured at BAAQMD Monitoring Station in 2015, 10 Arkansas Street, San Francisco**, shows ambient concentrations of carcinogenic TACs measured at the Arkansas Street station as well as the estimated cancer risks from a lifetime exposure (70 years) to these substances. When TAC measurements at this station are compared to ambient concentrations of various TACs for the Bay Area as a whole, the cancer risks associated with mean TAC concentrations in San Francisco are similar to those for the region.

²⁶⁹ BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 67.

²⁷⁰ 54 Federal Register 38044, September 14, 1989.

²⁷¹ BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 67.



SOURCE: City of San Francisco, 2016; ESA, 2014

Case No. 2011.1356E: Central SoMa Plan

Figure IV.F-1

Air Pollutant Exposure Zone in the Plan Area and Street Network Changes

TABLE IV.F-4 ANNUAL AVERAGE AMBIENT CONCENTRATIONS OF CARCINOGENIC TOXIC AIR CONTAMINANTS MEASURED AT BAAQMD MONITORING STATION IN 2015, 10 ARKANSAS STREET, SAN FRANCISCO

Substance	Concentration	Cancer Risk per Million ^a
Gaseous TACs (ppb)		
Acetaldehyde	0.56	3 ^b
Benzene	0.1941	18
1,3-Butadiene	0.037	14
Carbon Tetrachloride	0.092	25
Formaldehyde	1.28	9 ^b
Perchloroethylene	0.011	0.6
Methylene Chloride	0.108	0.4
Chloroform	0.025	0.8
Trichloroethylene	0.01	0.1
Particulate TACs (ng/m³)		
Chromium (Hexavalent)	0.045	7 ^b
Total Risk for All TACs		70.9

SOURCE: California Air Resources Board, *Ambient Air Toxics Summary-2014*. Available at <http://www.arb.ca.gov/adam/toxics/sitesubstance.html>.

NOTES:

TACs = toxic air contaminants; BAAQMD = Bay Area Air Quality Management District; ppb = part per billion; ng/m³ = nanograms per cubic meter.

a. Cancer risks were estimated by applying published unit risk values to the measured concentrations.

b. 2014 data.

Roadway-Related Pollutants

Motor vehicles are responsible for a large share of air pollution, especially in California. Vehicle tailpipe emissions contain diverse forms of particles and gases and also contribute to particulates by generating road dust and through tire wear. Epidemiologic studies have demonstrated that people living in proximity to freeways or busy roadways have poorer health outcomes, including increased asthma symptoms and respiratory infections and decreased pulmonary function and lung development in children. Air pollution monitoring conducted in conjunction with epidemiologic studies has confirmed that roadway-related health effects vary with modeled exposure to particulate matter and nitrogen dioxide. In traffic-related studies, the additional non-cancer health risk attributable to roadway proximity was seen within 1,000 feet of the roadway and was strongest within 300 feet.²⁷²

²⁷² California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005 (hereinafter "ARB Air Quality and Land Use Handbook"). Available at <http://www.arb.ca.gov/ch/handbook.pdf>.

Diesel Particulate Matter

The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Mobile sources, such as trucks and buses, are among the primary sources of diesel emissions, and concentrations of DPM are higher near heavily traveled highways. The ARB estimated average Bay Area cancer risk from exposure to diesel particulate, based on a population-weighted average ambient diesel particulate concentration, at about 480 in one million as of the year 2000, which is much higher than the risk associated with any other toxic air pollutant routinely measured in the region. The statewide risk from DPM, as determined by ARB, declined from 750 in one million in 1990 to 570 in one million in 1995; by 2000, ARB estimated the average statewide cancer risk from DPM at 540 in one million.^{273, 274}

In 2000, ARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. Subsequent ARB regulations apply to new trucks and diesel fuel. With new controls and fuel requirements, 60 trucks built in 2007 would have the same particulate exhaust emissions as one truck built in 1988.²⁷⁵ The regulation is anticipated to result in an 80 percent decrease in statewide diesel health risk in 2020 as compared with the diesel risk in 2000. Despite notable emission reductions, ARB recommends that proximity to sources of DPM emissions be considered in the siting of new sensitive land uses. ARB notes that these recommendations are advisory and should not be interpreted as defined “buffer zones,” and that local agencies must balance other considerations, including transportation needs, the benefits of urban infill, community economic development priorities, and other quality of life issues. With careful evaluation of exposure, health risks, and affirmative steps to reduce risk where necessary, ARB’s position is that infill development, mixed use, higher density, transit-oriented development, and other concepts that benefit regional air quality can be compatible with protecting the health of individuals at the neighborhood level.²⁷⁶ Also see *San Francisco Health Code* Article 38 discussed in the Regulatory Framework below.

Fine Particulate Matter

In April 2011, EPA published *Policy Assessment for the Particulate Matter Review of the National Ambient Air Quality Standards*. In this document, EPA staff concludes that the current federal annual PM_{2.5} standard of 15 µg/m³ should be revised to a level within the range of 13 to 11 µg/m³, with evidence strongly supporting a standard within the range of 12 to 11 µg/m³. The APEZ for San Francisco is based on the health protective PM_{2.5} standard of 11 µg/m³, as supported by the EPA’s Particulate Matter Policy Assessment, although lowered to 10 µg/m³ to account for uncertainty in accurately predicting air pollutant concentrations using emissions modeling programs.

²⁷³ ARB, *California Almanac of Emissions and Air Quality – 2009 Edition*, Table 5-44 and Figure 5-12, <http://www.arb.ca.gov/aqd/almanac/almanac09/chap509.htm>.

²⁷⁴ This calculated cancer risk value from ambient air exposure in the Bay Area can be compared against the lifetime probability of being diagnosed with cancer in the United States, from all causes, which is more than 40 percent (based on a sampling of 17 regions nationwide), or greater than 400,000 in one million, according to the American Cancer Society. (American Cancer Society, “Lifetime Probability of Developing or Dying from Cancer,” last revised July 13, 2009, available at http://www.cancer.org/docroot/CRI/content/CRI_2_6x_Lifetime_Probability_of_Developing_or_Dying_From_Cancer.asp.)

²⁷⁵ Pollution Engineering, *New Clean Diesel Fuel Rules Start*, July, 2006 Available at <http://www.pollutionengineering.com/articles/85480-new-clean-diesel-fuel-rules-start>.

²⁷⁶ California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005 (hereinafter “ARB Air Quality and Land Use Handbook”). Available at <http://www.arb.ca.gov/ch/handbook.pdf>.

Sensitive Receptors

Air quality does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than others. Population subgroups sensitive to the health effects of air pollutants include the elderly and the young, population subgroups with higher rates of respiratory disease such as asthma and chronic obstructive pulmonary disease, and populations with other environmental or occupational health exposures (e.g., indoor air quality) that affect cardiovascular or respiratory diseases such as asthma and chronic obstructive pulmonary disease. The factors responsible for variation in exposure are also often similar to factors associated with greater susceptibility to air quality health effects. For example, lower income residents may be more likely to live in substandard housing and be more likely to live near industrial or roadway sources of air pollution.

BAAQMD defines sensitive receptors as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals and residential areas. Land uses such as schools, children's day care centers, hospitals, and nursing and convalescent homes are considered to be sensitive to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress. 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 associated greater exposure to ambient air quality conditions.

Land uses within the Plan Area are described in Section IV.A, Land Use and Land Use Planning. Residential uses exist throughout the Plan Area. There are no licensed child care centers located in the Plan Area, but several such facilities are located in close proximity, including facilities at 95 Hawthorne Street between Harrison and Folsom Streets, 303 Second Street at Folsom Street, 790 Folsom Street at Fourth Street, 375 Seventh Street (in the Bessie Carmichael Elementary School), and in the Federal Building at Seventh and Mission Streets.

Existing Stationary Sources of Air Pollution

BAAQMD's inventory of permitted stationary sources of emissions indicates that there are dozens of permitted stationary emission sources present within or near the Plan Area. These permitted stationary sources are primarily standby generators, gasoline stations, and other facilities such as auto body shops. These sources are included in the citywide modeling used to identify the APEZ.

Major Roadways Contributing to Air Pollution

BAAQMD guidance indicates that roadways with volumes exceeding 10,000 average annual daily traffic (AADT) may impact sensitive receptors if within 1,000 feet of any receptor. This traffic contributes to elevated concentrations of PM_{2.5}, DPM, and other contaminants emitted from motor vehicles near the street level. A review of average daily roadway volumes from the San Francisco County Transportation Authority traffic model indicates that roadways with more than 10,000 AADT in the Plan Area and vicinity include I-80, Market Street, Mission Street, Howard Street, Folsom Street, Harrison Street, Bryant Street, Brannon Street, Third Street, Fourth Street, Fifth Street, and Sixth Street. This concentration of high-volume roadways within

and proximate to the Plan Area is the primary reason that the majority of the Plan Area is identified as being within the APEZ.

Other Sources Contributing to Air Pollution

The southeastern portion of the Plan Area abuts the San Francisco Caltrain railyard, across Townsend Street. Substantial DPM emissions are generated at this location from diesel locomotive operations, which include a substantial amount of engine idling as trains await departure. Increased cancer risks from railroad operations at a location 100 feet northwest of the track in this area are as high as 48 in one million. This source is included in the citywide modeling used to identify APEZ.

Odors

Sources that typically generate odors include wastewater treatment and pumping facilities; landfills, transfer stations, and composting facilities; petroleum refineries, asphalt batch plants, chemical (including fiberglass) manufacturing, and metal smelters; painting and coating operations; rendering plants; coffee roasters and food processing facilities; and animal feed lots and dairies. With the exception of auto body shops with spray booths (and coffee roasters just outside the Plan Area), none of these uses exists in or near the Plan Area.

IV.F.3 Regulatory Framework

Federal Regulations

The 1970 Clean Air Act (most recently amended in 1990) requires that regional planning and air pollution control agencies prepare a regional air quality plan to outline the measures by which both stationary and mobile sources of pollutants will be controlled in order to achieve all standards by the deadlines specified in the act. These ambient air quality standards are intended to protect the public health and welfare, and they specify the concentration of pollutants (with an adequate margin of safety) to which the public can be exposed without adverse health effects. They are designed to protect those segments of the public most susceptible to respiratory distress, including asthmatics, the very young, the elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels that are somewhat above ambient air quality standards before adverse health effects are observed.

The current attainment status for the SFBAAB, with respect to federal standards, is summarized in Table IV.F-2. In general, the SFBAAB experiences low concentrations of most pollutants when compared to federal standards, except for PM₁₀, PM_{2.5}, and NO₂, for which standards are exceeded periodically (see Table IV.F-1).

In June 2004, the SFBAAB was designated as a marginal nonattainment area for the national eight-hour ozone standard.²⁷⁷ EPA lowered the national eight-hour ozone standard from 0.80 to 0.75 parts per million (ppm)

²⁷⁷ <http://www.epa.gov/ozonedenignations/1997standards/timeline.htm>.

effective May 27, 2008. In April 2012, EPA designated the Bay Area as a marginal nonattainment²⁷⁸ region for the 0.75 ppm ozone standard established in 2008.²⁷⁹ The SFBAAB is in attainment for other criteria pollutants, with the exception of the 24-hour standards for PM₁₀ and PM_{2.5}, for which the Bay Area is designated as “Unclassified” and non-attainment, respectively. “Unclassified” is defined by the Clean Air Act as any area that cannot be classified, on the basis of available information, as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant. The SFBAAB is designated as an attainment area with respect to the federal annual average PM_{2.5} standard.

State Regulations

Although the Federal Clean Air Act established national ambient air quality standards, individual states retained the option to adopt more stringent standards and to include other pollution sources. California had already established its own air quality standards when federal standards were established, and because of the unique meteorological problems in California, there are many differences between the State and national ambient air quality standards, as shown in Table IV.F-2. California ambient standards tend to be at least as protective as national ambient standards and are often more stringent.

In 1988, California passed the California Clean Air Act (*California Health and Safety Code* Sections 39600 et seq.), which, like its federal counterpart, called for the designation of areas as attainment or nonattainment, but based on State ambient air quality standards rather than the federal standards. As indicated in Table IV.F-2, the SFBAAB is designated as “nonattainment” for State ozone, PM₁₀, and PM_{2.5} standards. The SFBAAB is designated as “attainment” for other pollutants.

Toxic Air Contaminants

In 2005, ARB approved a regulatory measure to reduce emissions of toxic and criteria pollutants by limiting the idling of new heavy-duty diesel vehicles. The regulations generally limit idling of commercial motor vehicles (including buses and trucks) within 100 feet of a school or residential area for more than five consecutive minutes or periods aggregating more than five minutes in any one hour. Buses or vehicles also must turn off their engines upon stopping at a school and must not turn on their engines more than 30 seconds before beginning to depart from a school. Also, State law Senate Bill 352 was adopted in 2003 and limits locating public schools within 500 feet of a freeway or busy traffic corridor (*Education Code* Section 17213; *Public Resources Code* Section 21151.8).

ARB has also adopted rules for new diesel trucks and for off-road diesel equipment. Along with rules adopted by the EPA, these regulations have resulted in substantially more stringent emissions standards for new diesel trucks and new off-road diesel equipment, such as construction vehicles. Effective January 2011, both EPA and ARB adopted so-called Interim Tier 4 standards for new equipment with diesel engines of 175 hp or greater. The interim Tier 4 emissions standards for particulate matter are about 85 percent more restrictive than

²⁷⁸ “Marginal nonattainment area” refers to those areas where the fourth highest reading over any 24-hour period in the past 3 years exceeds the 8-hour national ambient air quality standard for ozone at concentrations of between 0.076 and 0.086 ppm.

²⁷⁹ EPA, 2008 Ground-level Ozone Standards — Region 9 Final Designations, April 2012 www.epa.gov/ozonedesignations/2008standards/final/region9f.htm.

previous emissions standards (Tier 2 or Tier 3, depending on the size of the engine²⁸⁰) for these larger off-road engines. As a result, use of engines that meet the interim Tier 4 standards would reduce diesel exhaust emissions by approximately 85 percent, compared to new engines produced under the previous standards. Tier 2 or Tier 3 engines (for larger equipment, those manufactured since 2006) can achieve generally the same reduction through retrofitting by installation of a diesel particulate filter (an ARB-certified Level 3 Verified Diesel Emissions Control System). Beginning in 2014, ARB regulations require off-road equipment fleets to begin gradual replacement of older engines with newer, cleaner engines, the installation of exhaust filters on remaining older engines, or some combination of the two to achieve fleet-wide emissions reductions. Because only a certain percentage of each fleet's engines must be replaced or retrofitted on an annual or periodic basis to achieve the required emissions reductions, and because fleet turnover of heavy-duty off-road equipment takes many years, the full effect of the regulations on emissions reduction is not anticipated to be realized for some 20 years.

Regarding equipment already in use, ARB adopted rules for in-use off-road diesel vehicles—including construction equipment—in 2007. Those rules also limit idling to five minutes, require a written idling policy for larger vehicle fleets, and require that fleet operators provide information on their engines to ARB and label vehicles with an ARB-issued vehicle identification number. The off-road rules require the retrofit or replacement of diesel engines in existing equipment. This “repowering” was originally to be required beginning in 2010 (for the largest fleets). However, in 2010, ARB delayed the start of repowering to 2014 for large fleets, 2017 for medium-sized fleets, and 2019 for small fleets.²⁸¹ ARB stated that the delayed implementation was justified because the recession had dramatically reduced emissions, and because the board staff found that the data on which the original rule was based had overestimated emissions. According to ARB, under the revised rules, DPM emissions from off-road equipment will decrease by more than 40 percent from 2010 levels by the year 2020, and by 2030, they will decrease by more than 75 percent.²⁸²

Regional and Local Regulations

Bay Area Air Quality Planning

Air quality plans developed to meet Federal requirements are referred to as State Implementation Plans. The Federal and State Clean Air Acts require plans to be developed for areas designated as nonattainment (with the exception of areas designated as nonattainment for the State PM₁₀ standard). The *2010 Bay Area Clean Air Plan* was adopted on September 15, 2010, by the BAAQMD, in cooperation with the Metropolitan Transportation Commission (MTC), the Bay Conservation and Development Commission (BCDC), and the Association of Bay Area Governments (ABAG). The *2010 Clean Air Plan* outlines a multi-pollutant approach for addressing ozone, particulate matter, air toxics, and greenhouse gas emission reductions in a single, integrated

²⁸⁰ For most construction equipment other than that with extremely powerful engines (greater than 750 horsepower), Tier 2 and Tier 3 emissions standards are the same with respect to particulate matter. Therefore, cancer risk from diesel particulate matter—a subset of all particulate matter—is essentially the same for Tier 2 and Tier 3 engines.

²⁸¹ Fleet size is based on total horsepower (hp): large fleets are those with more than 5,000 hp, medium fleets have 2,501 to 5,000 hp, and small fleets are those with less than 2,500 hp.

²⁸² California Air Resources Board, “Staff Report: Initial Statement of Reasons for Proposed Rulemaking: Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements,” October 2010, p. 44. Available at <http://www.arb.ca.gov/regact/2010/offroadlsi10/offroadisor.pdf>.

strategy. The primary objectives of the plan are to improve local and regional air quality, protect public health, and minimize climate change impacts. The *2010 Clean Air Plan* replaces the Bay Area *2005 Ozone Strategy*, adopted in 2006.

The *2010 Clean Air Plan* updates the *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, toxic air contaminants, 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 near future. The control strategy includes stationary-source control measures to be implemented through BAAQMD regulations; mobile-source control measures to be implemented through incentive programs and other activities; and transportation control measures to be implemented through transportation programs in cooperation with the MTC, local governments, transit agencies, and others. The *2010 Clean Air Plan* also represents the Bay Area’s most recent triennial assessment of the region’s strategy to attain the State one-hour ozone standard.²⁸³ The *2010 Clean Air Plan* is currently in the process of being updated with a Final Draft expected to be circulated in November 2016.

The BAAQMD is the regional agency with jurisdiction over the nine-county region located in the SFBAAB. ABAG, MTC, county transportation agencies, cities and counties, and various non-governmental organizations also participate in the efforts to improve air quality through a variety of programs. These programs include the adoption of regulations and policies, as well as implementation of extensive education and public outreach programs. BAAQMD is responsible for attaining and/or maintaining air quality in the region within federal and State air quality standards. Specifically, BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the region and to develop and implement strategies to attain the applicable federal and State standards. BAAQMD has permit authority over most types of stationary emission sources and can require stationary sources to obtain permits, and can impose emission limits, set fuel or material specifications, or establish operational limits to reduce air emissions. BAAQMD also regulates new or expanding stationary sources of toxic air contaminants and requires air toxic control measures (ATCM) for many sources emitting TACs.

San Francisco Construction Dust Control Ordinance

San Francisco Health Code Article 22B and *San Francisco Building Code* Section 106.A.3.2.6 collectively constitute the Construction Dust Control Ordinance (adopted in July 2008). The ordinance requires that all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specified dust control measures whether or not the activity requires a permit from the Department of Building Inspection (DBI). For projects over one-half acre and within 1,000 feet of sensitive receptor(s) (e.g., residences and group living quarters, schools, child care centers, and hospitals and other health-care facilities), and other projects as deemed necessary by the Director of Public Health, the Dust Control Ordinance requires that the project sponsor submit a Dust Control Plan, with a goal of minimizing visible dust, for approval by the San Francisco Department of Public Health (DPH) prior to issuance of a building permit by DBI. Such larger

²⁸³ BAAQMD, *2010 Clean Air Plan*. Available at <http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/Clean-Air-Plans.aspx>.

projects must also identify a compliance monitor and that person must be available at all times during construction activities.

Building permits will not be issued without written notification from the Director of Public Health that the applicant has a site-specific Dust Control Plan, unless the Director waives the requirement. The Construction Dust Control Ordinance requires project sponsors and contractors responsible for construction activities to control construction dust on the site or implement other practices that result in equivalent dust control that are acceptable to the Director of Public Health.

Dust suppression activities may include watering of all active construction areas sufficiently to prevent dust from becoming airborne; increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water must be used if required by Article 21, Sections 1100 et seq. of the *San Francisco Public Works Code*.

Pursuant to *Health Code* Article 22B, Section 1247, all departments, boards, commissions, and agencies of the City and County of San Francisco (the City) that authorize construction or improvements on land under their jurisdiction under circumstances where no building, excavation, grading, foundation or other permits are required to be obtained under the *Building Code* shall adopt rules and regulations to ensure that the same dust control requirements that are set forth in this article are followed.

San Francisco Regulations Regarding Exposure of Sensitive Uses to Air Pollution

Health Code Article 38

San Francisco adopted Article 38 of the *San Francisco Health Code* in 2008, and amended it in 2014, to protect new sensitive uses from existing sources of air pollution by requiring enhanced ventilation and filtration systems in certain areas of the city. The recent amendments make the *Health Code* and *Building Code* consistent with the results of the air quality modeling undertaken to identify the City's APEZ. As revised in 2014, Article 38 applies to all development that includes "sensitive uses," as defined in the *Health Code*, including all residential units; adult, child and infant care centers; schools; and nursing homes. The revised Article 38 considers all existing sources of TACs and PM_{2.5}, and requires "enhanced ventilation," including filtration of outdoor air, for all such projects located in the APEZ. The filtration requirement of Article 38 specifies Minimum Efficiency Reporting Value (MERV) 13 or equivalent, based on American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 52.2, and requires DPH to confer with other City departments and report to the Board of Supervisors concerning technologies it has identified or evaluated that may comply with the requirements of the *Health Code*. Article 38 also requires periodic updating of the Air Pollutant Exposure Zone Map (about every five years) to account for changes in sources of TACs and PM_{2.5} emissions or updated health risk quantification methodologies.

Clean Construction Ordinance

The City's Clean Construction Ordinance (*San Francisco Environment Code* Chapter 25 and *San Francisco Administrative Code* Section 6.25, as amended March 2015), applicable to City-funded projects that require the use of heavy off-road equipment for 20 days or more that are within 1,000 feet of any residence, school, child care center, health facility, or similar sensitive receptor, requires implementation of measures to reduce diesel emissions generated at publicly funded construction sites and thereby related potential health risks.

Specifically, for projects within the APEZ (see p. IV.F-9), the ordinance requires the use of diesel engines that meet or exceed either EPA or ARB Tier 2 off-road emission standards, and that are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy (VDECS). Additionally, the ordinance prohibits the use of portable diesel engines where alternative sources of power are available (i.e., requires use of available utility-provided electricity in lieu of a diesel generator), limits idling of diesel engines, requires that equipment be properly maintained and tuned, and mandates submittal to the authorizing City department of a Construction Emissions Minimization Plan prior to the start of work. Waivers to the equipment requirements may be granted only if compliance is not feasible or in case of emergency. For projects outside the APEZ, the ordinance requires the use of biodiesel fuel grade B20²⁸⁴ or higher for off-road diesel equipment and use of Tier 2 or similar off-road equipment.

Regulation of Odors

BAAQMD Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds. The 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.

IV.F.4 Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR, implementation of the proposed project would have a significant impact related to 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 in nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions that 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; or
- Create objectionable odors affecting a substantial number of people.

²⁸⁴ B20 is a mixture of 20 percent biodiesel and 80 percent petroleum.

Approach to Analysis

The Plan is a regulatory program and would result in new planning policies and controls for land use to accommodate additional jobs and housing. With exception to the street network changes and open space improvements, the Plan itself would not result in direct physical changes to the existing environment. Indirect effects from the Plan could result as subsequent development projects allowed under the Plan could replace existing residences and businesses, or increase space for residences or businesses in the Plan Area.

In *California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal.4th 369 (2015), the California Supreme Court held that CEQA does not generally require lead agencies to consider how existing environmental conditions might impact a project's users or residents, except where the project would significantly exacerbate an existing environmental condition. Accordingly, the significance criteria above related to exposure of sensitive receptors to substantial pollutant concentrations is relevant only to the extent that the project significantly exacerbates air quality conditions. The impact is considered significant if the Plan, or implementation of individual development projects pursuant to the Plan including proposed street network changes and open space improvements, would significantly exacerbate existing or future air quality conditions.

The thresholds of significance discussed below are based on substantial evidence identified in Appendix D of the 2011 BAAQMD CEQA Guidelines²⁸⁵ and its 2009 Justification Report²⁸⁶ and are therefore used as the basis for determining criteria air pollutant and odor air quality impacts under CEQA. As discussed below, the BAAQMD CEQA Guidelines identify different significance thresholds for plans versus projects. The analysis below contains both a plan-level and project-level analysis to address implementation of the Plan and subsequent activities anticipated under the Plan.

Central SoMa Plan (Program-Level Analysis)

As noted above, the Plan is a regulatory program that would not itself result in direct physical impacts to air quality; however, indirect effects could result from specific development projects allowed under the Plan, including the street network changes and open space improvements. The Plan includes specific projects that, if the plan is approved, could result in direct physical changes and those are addressed at the project level. The policy framework and rezoning is addressed at a program level. The following describes how plan-level air quality impacts are evaluated in this EIR and are based on the BAAQMD CEQA Guidelines for plan-level analysis.

Criteria Air Pollutants

The significance thresholds for assessment of a planning document, such as the proposed Plan, involve an evaluation of whether:

- The plan would be consistent with the control measures contained in the current regional air quality plan (the *2010 Clean Air Plan*), would support the primary objectives of that plan and would not hinder implementation of that plan; the plan's growth in vehicle miles traveled (VMT) do not exceed the plan's population growth; and the plan would not cause localized CO impacts.

²⁸⁵ Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, updated May 2011. Table 3-1.

²⁸⁶ BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, pp. 22–76.

If the foregoing questions can be answered in the affirmative, the proposed Plan would not:

- 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; nor
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).

Consistency with Clean Air Plan

The most recently adopted air quality plan for the SFBAAB is the *2010 Clean Air Plan* (CAP). The 2010 CAP is a road map that demonstrates how the San Francisco Bay Area will achieve compliance with the State ozone standards as expeditiously as practicable and how the region will reduce the transport of ozone and ozone precursors to neighboring air basins. In determining consistency with the *2010 Clean Air Plan*, this analysis considers whether the project would (1) support the primary goals of the CAP, (2) include applicable control measures from the CAP, and (3) avoid disrupting or hindering implementation of control measures identified in the CAP. To meet the primary goals, the CAP recommends specific control measures and actions. These control measures are grouped into various categories and include stationary and area source measures, mobile source measures, transportation control measures, land use measures, and energy and climate measures. The CAP recognizes that to a great extent, community design dictates individual travel mode, and that a key long-term control strategy to reduce emissions of criteria pollutants, air toxics, and greenhouse gases from motor vehicles is to channel future Bay Area growth into urban communities where goods and services are close at hand, and people have a range of viable transportation options. To this end, the *2010 Clean Air Plan* includes 55 control measures aimed at reducing air pollution in the SFBAAB.

Vehicle Miles Traveled and Population Growth Analysis

The threshold of significance for evaluation of a plan's emissions of criteria air pollutants is based on consistency with regional air quality planning, including an evaluation of population growth and growth in VMT. For a proposed plan to result in less than significant criteria air pollutant impacts, an analysis must demonstrate that the plan's growth in VMT would not exceed the plan's population growth.

Local Carbon Monoxide Analysis

The BAAQMD has demonstrated, based on modeling, that in order to exceed the California ambient air quality standard of 9.0 ppm (eight-hour average) or 20.0 ppm (one-hour average) for CO, project traffic in addition to existing traffic would need to exceed 44,000 vehicles per hour at affected intersections (or 24,000 vehicles per hour where vertical and/or horizontal mixing is limited). Projects that do not result in 44,000 vehicles per hour in combination with background traffic (or 24,000 vehicles per hour where applicable), would not have the potential to result in a significant CO impact. The Plan-level analysis assesses the potential for the proposed project to result in intersections exceeding these screening criteria.

Separate from the above analysis, this EIR also analyzes the potential that street network changes, open space improvements, and one or more subsequent individual development projects could be of sufficient magnitude to result in a project-specific air quality impact resulting from the project's criteria pollutant emissions using

the project-level significance thresholds shown in **Table IV.F-5, Criteria Air Pollutant Significance Thresholds**, p. IV.F-24.

Community Risk and Hazard Impacts

This analysis responds to the criterion that asks whether the proposed Plan would:

- Expose sensitive receptors to substantial pollutant concentrations.

The threshold of significance used to evaluate community health risks and hazards from new sources of TACs is based on the potential for the proposed Plan to substantially affect the geography and severity of the APEZ at sensitive receptor locations. Only very large projects would have the potential to substantially affect the geography and severity of an APEZ, so these potential impacts are best addressed at the Plan level. If the Plan would result in sensitive receptor locations meeting the APEZ criteria that otherwise would not without the plan and the Plan would result in a PM_{2.5} concentration above 0.3 µg/m³ or an excess cancer risk greater than 10.0 per million, a significant plan impact would occur. The 0.3 µg/m³ PM_{2.5} concentration and the excess cancer risk of 10.0 per million persons exposed are the levels below which the BAAQMD considers new sources not to make a considerable contribution to cumulative health risks.²⁸⁷ For those locations already meeting the APEZ criteria, a lower significance standard is required to ensure that the plan's contribution to existing health risks would not be significant. In these areas, if the Plan's PM_{2.5} concentration exceeds 0.2 µg/m³ or results in an excess cancer risk greater than 7.0 per million, a significant impact would occur.²⁸⁸

Odors

The Plan would result in a significant impact with respect to odors if it would:

- Create objectionable odors affecting a substantial number of people.

For odors, a proposed land use plan must identify the location of existing and planned odor sources. The proposed land use plan must also include policies to reduce potential odor impacts if such sources are anticipated from the plan. Typical odor sources of concern include wastewater treatment plants, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing facilities, fiberglass manufacturing facilities, auto body shops, rendering plants, and coffee roasting facilities. BAAQMD identifies a screening distance for new sources of potential odors, such as wastewater treatment plants, landfills and transfer stations, refineries, asphalt and chemical plants, food processing facilities, and the like, of one or two miles, depending on use. In general, such setback distances would avoid the potential for significant odor impacts.

²⁸⁷ Bay Area Air Quality Management District, *California Environmental Quality Act Guidelines Update, Proposed Air Quality CEQA Thresholds of Significance*, May 3, 2010. Available at www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/Proposed_Thresholds_Report_%20May_3_2010_Final.ashx?la=en.

²⁸⁸ A 0.2 µg/m³ increase in PM_{2.5} would result in a 0.28 percent increase in non-injury mortality or an increase of about twenty-one excess deaths per 1,000,000 population per year from non-injury causes in San Francisco. This information is based on Jerrett M et al., *Spatial Analysis of Air Pollution and Mortality in Los Angeles*, *Epidemiology* 16 (2005): 727–736. The excess cancer risk has been proportionally reduced to result in a significance criteria of 7 per million persons exposed.

Subsequent Development Projects, Proposed Street Network Changes and Open Space Improvements (Project-level Analysis)

Criteria Air Pollutants and Precursors

For project-level analysis, such as that associated with the proposed street network changes and open space improvements, as well as for subsequent individual development projects in the Plan Area, the City relies on quantitative thresholds of significance for criteria air pollutant analyses. **Table IV.F-5, Criteria Air Pollutant Significance Thresholds**, summarizes these thresholds of significance. A discussion of each threshold is provided below.

TABLE IV.F-5 CRITERIA AIR POLLUTANT SIGNIFICANCE THRESHOLDS

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (pounds/day)	Average Daily Emissions (pounds/day)	Maximum Annual Emissions (tons/year)
ROG	54	54	10
NO _x	54	54	10
PM ₁₀	82	82	15
PM _{2.5}	54	54	10
Fugitive Dust	Construction Dust Ordinance	Not Applicable	

Ozone Precursors

As discussed previously, the SFBAAB is currently designated as nonattainment for ozone, PM₁₀, and PM_{2.5}. The potential for an individual project to result in a cumulatively considerable net increase in criteria air pollutants, which may contribute to an existing or projected air quality violation, is based on the State and federal Clean Air Acts' emissions limits for stationary sources. The federal New Source Review program was created under the federal Clean Air Act to ensure that stationary sources of air pollution are constructed in a manner that is consistent with attainment of federal health based ambient air quality standards. Similarly, to ensure that new stationary sources do not cause or contribute to a violation of an air quality standard, BAAQMD Regulation 2, Rule 2 requires that any new source that emits criteria air pollutants above a specified emissions limit must offset those emissions. For ozone precursors, ROG and NO_x, the offset emissions level is an annual average of 10 tons per year (or 54 lbs. per day).²⁸⁹ These levels represent emissions below which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants.

Although this regulation applies to new or modified stationary sources, land use development projects result in ROG and NO_x emissions as a result of increases in vehicle trips, architectural coating, and construction activities. Therefore, the above thresholds can be applied to the construction and operational phases of

²⁸⁹ BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 17.

development projects, as well as the proposed street network changes and open space improvements. Projects that result in emissions below these thresholds would not be considered to contribute to an existing or projected air quality violation or result in a cumulatively considerable net increase in ROG and NO_x emissions. Because construction activities are temporary in nature, only the average daily thresholds are applicable to construction phase emissions.

Particulate Matter

The BAAQMD has not established an offset limit for PM_{2.5} and the current federal Prevention of Significant Deterioration (PSD) offset limit of 100 tons per year for PM₁₀ is too high and would not be an appropriate significance threshold for the Bay Area considering the nonattainment status of PM₁₀. However, the federal New Source Review emissions limits for stationary sources in nonattainment areas provide for appropriate thresholds. For PM₁₀ and PM_{2.5}, the emissions limit under New Source Review is 15 tons per year (82 pounds per day) and 10 tons per year (54 pounds per day), respectively. These emissions limits represent levels at which a source is not expected to have an impact on air quality.²⁹⁰ Similar to ozone precursor thresholds identified above, land use development projects typically result in particulate matter emissions as a result of increases in vehicle trips, space heating and natural gas combustion, landscape maintenance, and construction activities; construction of the proposed street network changes and open space improvements would likewise result in such emissions. Therefore, the above thresholds can be applied to the construction and operational phases of a development project and to the construction of the street network changes and open space improvements. Those projects that result in emissions below the New Source Review emissions limits would not be considered to contribute to an existing or projected air quality violation or result in a cumulatively considerable net increase in PM₁₀ and PM_{2.5} emissions. Because construction activities are temporary in nature, only the average daily thresholds are applicable to construction-phase emissions.

Other Criteria Pollutants

Regional concentrations of CO in the Bay Area have not exceeded the State standards in the past 11 years and SO₂ concentrations have never exceeded the standards. The primary source of CO emissions from development projects is vehicle traffic. Construction-related SO₂ emissions represent a negligible portion of the total basin-wide emissions and construction-related CO emissions represent less than five percent of the Bay Area total basin-wide CO emissions.²⁹¹ As discussed previously, the SFBAAB is in attainment for both CO and SO₂. The potential for subsequent development projects to result in significant CO impacts is addressed at the Plan level, as discussed above, and additional analysis is not required. The proposed street network changes and open space improvements would not result in substantial emissions of CO or SO₂, and quantitative analysis is also not required.

Fugitive Dust

Fugitive dust²⁹² emissions are typically generated during construction phases. Studies have shown that the application of best management practices (BMPs) at construction sites significantly controls fugitive dust.²⁹³

²⁹⁰ Ibid., p. 16.

²⁹¹ Ibid., p. 27.

²⁹² "Fugitive dust" is dust that is generated during construction and that escapes from a construction site.

Individual measures have been shown to reduce fugitive dust by anywhere from 30 percent to 90 percent.²⁹⁴ The BAAQMD has identified a number of BMPs to control fugitive dust emissions from construction activities.²⁹⁵ San Francisco's Construction Dust Control Ordinance requires a number of fugitive dust control measures to ensure that construction projects do not result in visible dust. Compliance with the Construction Dust Control Ordinance is the basis for determining the significance of fugitive dust emissions.

Compliance with the Construction Dust Control Ordinance ensures that projects that result in fugitive dust emissions during construction would neither:

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation; nor
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors); nor
- Expose sensitive receptors to substantial pollutant concentrations.

Health Risks and Hazards

Construction activities typically require the use of heavy-duty diesel vehicles and equipment, which emit DPM, designated a TAC. Development projects that require heavy-duty diesel vehicles and equipment, as well as projects that include stationary sources, such as a diesel backup generator, would result in emissions of DPM and possibly other TACs that may affect nearby sensitive receptors. Construction-phase TACs, however, would be temporary, and current health risk modeling methodologies are associated with longer-term exposure periods of 9, 30, 40, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities, resulting in difficulties with producing accurate modeling results.²⁹⁶

However, within the APEZ additional emissions would adversely affect populations that are already at a higher risk for adverse long-term health risks. Therefore, projects within the APEZ require special consideration to determine whether a project's activities would add emissions to areas already adversely affected by poor air quality.

Consistency with Applicable Air Quality Plan

As discussed previously, the BAAQMD has published the *2010 Clean Air Plan*, representing the most current applicable air quality plan for the SFBAAB. Consistency with this plan is the basis for determining whether the proposed project would conflict with or obstruct implementation of an applicable air quality plan. In determining whether a proposed project would conflict with the *Clean Air Plan*, three criteria are evaluated:

²⁹³ Western Regional Air Partnership, *WRAP Fugitive Dust Handbook*, September 7, 2006. Available at http://www.wrapair.org/forums/dej/f/fdh/content/FDHandbook_Rev_06.pdf.

²⁹⁴ BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009; p. 27.

²⁹⁵ BAAQMD, *CEQA Air Quality Guidelines*, May 2012. Available at http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en; pp. 8-3 – 8-4.

²⁹⁶ BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 29.

(1) whether the project implements the applicable control measures in the *Clean Air Plan*; (2) whether the project would disrupt or hinder implementation of any of these control measures; and (3) whether the project would support the primary goals of the *Clean Air Plan*.

Odors

As noted above, BAAQMD identifies a screening distance for new sources of potential odors, such as wastewater treatment plants, landfills and transfer stations, refineries, asphalt and chemical plants, food processing facilities, and the like, of one or two miles, depending on use.

Cumulative Air Quality Impacts

Regional air quality impacts are by their very nature cumulative impacts. Emissions from past, present and future projects contribute to adverse regional air quality impacts on a cumulative basis, and no single project is sufficiently large to result in nonattainment of ambient air quality standards. As described above, the project-level thresholds for criteria air pollutants are based on levels at which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants. Therefore, if a project's emissions are below the project-level thresholds, the project would not be considered to result in a considerable contribution to cumulatively significant regional air quality impacts.

With respect to localized health risks and hazards, as described above on Page IV.F-26, the significance thresholds represent a cumulative impact analysis as this analysis considers all known sources that may result in adverse health impacts. The cumulative health risk analysis in this EIR also evaluates the incremental effect of the Plan's increase in vehicle traffic, in addition to growth in background traffic under 2040 cumulative conditions, consistent with the transportation analysis.

Consistency with the 2010 Clean Air Plan (Program- and Project-Level Analysis)

Impact AQ-1: Development under the Plan, including the proposed open space improvements and proposed street network changes, would not conflict with or obstruct implementation of the 2010 Clean Air Plan. (Less than Significant)

As noted above, consistency with the 2010 *Clean Air Plan* is evaluated using a three-step process that assesses the following: whether the Plan would implement the applicable control measures in the *Clean Air Plan*; whether the Plan would disrupt or hinder implementation of any of these control measures; and whether the Plan would support the primary goals of the *Clean Air Plan*.

The *Clean Air Plan* contains 55 control measures aimed at reducing air pollution in the Bay Area. Some (18) of these measures address stationary sources (such as printing facilities and cement kilns, but also include residential and commercial heating systems), and will be implemented by the BAAQMD using its permit authority and are therefore not suited to implementation through local planning efforts.²⁹⁷ The remaining 37

²⁹⁷ For example, Stationary Source Measures 11 and 12 will ultimately require that new furnaces in the Air Basin emit lower levels of NO_x.

measures are grouped into Transportation, Mobile Source, Land Use and Local Impact, and Energy and Climate measures. These measures are discussed in detail below.²⁹⁸

The control measures most applicable to the Plan are the Transportation Control Measures. The Transportation Control Measures concern improving transit systems, improving efficiency of the region's transportation system, encouraging residents and employees to exhibit "sustainable transportation behavior," improving bicycle and pedestrian facilities, and supporting high-density growth. As discussed below, the Plan would address many of these transportation measures. The Plan, through implementation of existing City policies and new programs in the Plan, would also further the *Clean Air Plan's* Energy and Climate Measures. The Land Use and Local Impact and Mobile Source measures primarily address the BAAQMD's own programs and regional air quality planning, and are less applicable to local agencies' decisions and projects. However, one of these measures, Land Use Measure (LUM) 1, Goods Movement, is intended to "reduce human exposure to diesel emissions from goods movement in the near term" and "develop and support long-range strategies and partnerships to reduce emissions from the movement of freight in the Bay Area," and is discussed below.²⁹⁹

Transportation Control Measures in the *2010 Clean Air Plan* are identified in **Table IV.F-6, Consistency of the Plan with Transportation Control Measures of the 2010 Clean Air Plan**, p. IV.F-29. Inasmuch as the transportation measures are generally those most applicable to an individual plan or development project, the table identifies each measure or group of measures and correlates the measures to specific elements of the Plan or explains why the strategy does not apply to the Plan. As indicated in the table, the Plan directly addresses many of the Transportation Control Measures, particularly those that emphasize higher-density development, a mix of uses, and increased transit ridership and pedestrian and bicycle use. Based on the analysis in Table IV.F-5, implementation of the Plan would promote implementation of, and in some cases go beyond, these measures. Therefore, the Plan would be consistent with the applicable Transportation Control Measures in the *2010 Clean Air Plan*.

Energy and Climate Measures, newly added in the *2010 Clean Air Plan*, are "designed to reduce ambient concentrations of criteria pollutants, reduce emissions of carbon dioxide (CO₂) and protect our climate" by promoting energy conservation and efficiency in buildings and renewable energy; reducing "urban heat island" effects by increasing reflectivity of roofs and parking lots; and promoting shade tree planting.³⁰⁰ Many of the City plans and programs that achieve consistency with and promote these measures are identified in the City's *Greenhouse Gas Reduction Strategy*. In general, consistency with these measures is directly promoted by the City's energy-efficiency requirements and programs, including the San Francisco Green Building Requirements for Energy Efficiency, Stormwater Management, Water Reduction, Renewable Energy, Solid Waste, and Construction and Demolition Debris Recycling, all of which are contained in the 2013 *San Francisco Green Building Code*, as well as the street tree planting requirement of Article 16 of the *San Francisco Public Works Code*, the City's Urban Forestry Ordinance. Subsequent development projects in the Plan Area would be required to comply with these City requirements, and therefore the Plan would be consistent with the Energy and Climate Control Measures in

²⁹⁸ Eighteen other measures are included in a list of measures for further study and are not yet identified as feasible for implementation under the *2010 Clean Air Plan*.

²⁹⁹ BAAQMD, *2010 Clean Air Plan*, September 2010. Available at <http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/Clean-Air-Plans.aspx>; p. D-1.

³⁰⁰ BAAQMD, *2010 Clean Air Plan*, September 2010. Available at <http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/Clean-Air-Plans.aspx>; p. 4-10.

the 2010 *Clean Air Plan*. Subsequent development projects in the Plan Area may also be subject to Plan proposals concerning sustainability, discussed in length in Goal VI of the Plan. Additionally, the Plan proposes a number of circulation and streetscape improvements, including specific street network changes, such as bicycle lanes and cycle tracks, widened sidewalks, transit lanes and bus bulbs, all of which are intended to increase the attractiveness of alternative travel modes, thereby potentially leading to a reduction in vehicle emissions.

TABLE IV.F-6 CONSISTENCY OF THE PLAN WITH TRANSPORTATION CONTROL MEASURES OF THE 2010 CLEAN AIR PLAN

2010 CAP Control Measure	Elements of the Plan Consistent with the Measure or Explanation of Non-Applicability
Transportation Control Measures (TCMs)	
TCM A-1 and A-2: Improve Local and Regional Bus and Rail Services	<p>The Plan, in conjunction with the SFMTA's recently approved Muni Forward, proposes to configure transit routes to adequately serve the Plan Area and redesign streets that serve transit to lessen the impact of traffic on transit performance. The Plan proposes to establish dedicated transit lanes on portions of Fourth, Folsom, Harrison, and Bryant Streets, in order to enhance transit travel times and reliability. Additionally, the Plan would upgrade existing and planned dedicated transit lanes with self-enforcing mechanisms such as curbs, channelizers, and colored or textured pavements to discourage or prevent use by unauthorized private vehicles.</p> <p>Phase 2 of Measure TCM-A-1 includes partial funding for Muni's Van Ness Avenue Bus Rapid Transit project, northwest of the Plan Area. Phase 2 of Measure TCM-A-2 includes partial funding for the Muni Metro Central Subway now under construction in the Plan Area and for the downtown extension and systemwide electrification of Caltrain and the new Transbay Transit Center, just to the east. All of these projects are within or near the Plan Area.</p>
TCM B-1 through B-4: Improve Transportation System (freeways and arterials; transit; express lanes; goods movement) Efficiency	<p>These measures address infrastructure improvements to increase operational efficiencies, such as common fare payment systems, and are geared primarily toward regional agencies, such as the Metropolitan Transportation Commission and Caltrans. The Plan seeks to accommodate the variety of Plan Area transportation needs by concentrating and facilitating transit in the Plan Area.</p>
TCM C-1: Voluntary Employer-Based Trip Reduction Programs	<p>San Francisco employers operate (or contract for) numerous shuttle bus services, many of which serve parts of the Plan Area. The City's Commuter Benefits Ordinance (Section 421 of the <i>Environment Code</i>) requires that employers with more than 20 employees provide pre-tax purchase of transit passes, employer-paid passes, or employer-provided transit. The Plan proposes to employ Transportation Demand Management (TDM) measures to encourage a mode shift away from private automobile use. TDM measures would also be required as mitigation for traffic noise impacts (see Section IV.E, Noise and Vibration).</p>
TCM C-2: Safe Routes to School and Safe Routes to Transit	<p>This measure funds pedestrian and bicycle improvements. Bessie Carmichael Middle School, at 824 Harrison Street, is within the Plan Area, and Bessie Carmichael Elementary School, on Seventh Street near Harrison Street, is just west of the Plan Area. The Plan proposes improvements to pedestrian and bicycle circulation, including improvements aimed at increasing pedestrian safety such as wider sidewalks, crosswalks and new signalized mid-block crossings.</p>
TCM C-3: Ridesharing Services and Incentives	<p>Through the 511 commuter information program, preferential vanpool parking, guaranteed ride home in emergencies, and carpool parking permits are provided in San Francisco. The <i>Planning Code</i> (Section 166) requires that car-share parking be provided in new parking garages. (See also the next measures.)</p>
TCM C-4 and C-5: Public Outreach/Education and Smart Driving	<p>These measures concern efforts to influence commuters' and drivers' behavior and are not directly relevant to the Plan. However, certain subsequent development projects in the Plan Area would be required under <i>Planning Code</i> Section 163 to participate in transportation brokerage services to facilitate the use of transit, ridesharing, and other means of minimizing the use of single-occupant vehicles in commuting. As discussed under TCM C-1, the Plan proposes application of TDM programs and features.</p>

TABLE IV.F-6 CONSISTENCY OF THE PLAN WITH TRANSPORTATION CONTROL MEASURES OF THE 2010 CLEAN AIR PLAN

2010 CAP Control Measure	Elements of the Plan Consistent with the Measure or Explanation of Non-Applicability
TCM D-1 and D-2: Improvements to Bicycle and Pedestrian Facilities and Access.	<p>Objective 4.1 of Goal IV of the Plan is to “Provide a safe, convenient, and attractive walking environment on all streets in the Plan Area.” The Plan proposes the following:</p> <ul style="list-style-type: none"> • Upgrade sidewalks to meet the standards in the Better Streets Plan where possible, provide corner sidewalk extensions to enhance pedestrian safety at crosswalks, and add street trees and furnishing wherever possible. • Provide additional midblock crosswalks across major streets. The Plan proposes new pedestrian crosswalks throughout the Plan Area. • Several signalized intersections of major streets in the Plan Area prohibit pedestrians from crossing one leg of the intersection. The Plan recommends opening certain locations with currently closed crosswalks. <p>Goal IV, Objective 2 of the Plan is to “Make cycling a safe and convenient transportation option throughout the Plan Area for all ages and abilities.”</p>
TCM D-3: Local Land Use Strategies (to encourage higher density and mixed uses).	The Plan would continue the mixed-use character of the Plan Area and would provide for increased density of development by means of selective increases in height limits. In addition, consistent with other rezoning undertaken recently in San Francisco, the zoning districts proposed for the Plan Area would have no maximum residential density; instead, density would be limited by height and bulk controls. The Plan also removes restrictive zoning, allowing for a greater mix of uses.
TCM E-1: Value Pricing Strategies	This measure primarily addresses congestion pricing, which is in effect on Bay Area bridges that charge higher tolls during rush hour. The measure also references a proposal for “cordon pricing” that has been proposed for downtown San Francisco. This is not proposed as part of the Plan.
TCM E-2: Promote Parking Policies to Reduce Motor Vehicle Travel	The <i>Planning Code</i> currently requires that new off-street parking provided for uses other than residential units and hotels in most of the Plan Area north of Harrison Street be priced so as to discourage long-term commuter parking, while still providing adequate short-term parking. <i>Planning Code</i> Section 155(g) requires that the cost for four hours of parking be no more than four times the rate charged for the first hour, and that the rate charged for eight or more hours of parking be no less than 10 times the rate charged for the first hour. Further, weekly or monthly discounts are prohibited. <i>Planning Code</i> Section 167 requires that residential parking be priced separately from dwelling units themselves, capturing the real cost for parking. Moreover, parking is not required under the <i>Planning Code</i> in most use districts in the Plan Area, with specified maximum numbers of parking spaces that may be provided. The Plan would maintain these requirements.
TCM E-3: Implement Transportation Pricing Reform	While not directly applicable to the Plan, this measure calls for increasing the cost of driving to reflect “external” costs such as air pollution. Higher gasoline taxes or other taxes or fees would be necessary to implement this measure. With the Plan’s emphasis on pedestrian and bicycle travel, the Plan Area is positioned to benefit from such potential changes.

SOURCE: 2010 Clean Air Plan; Environmental Science Associates, 2014.

While the land use changes proposed in the Plan are expected to increase demand for travel in the Plan Area, safe and convenient pedestrian, transit, and bicycle access to and within the Plan Area is necessary for the success of the envisioned land uses. The Plan includes the following objectives and policies to improve pedestrian, transit, and cycling conditions on major streets in and near the Plan Area:

- Provide a safe, convenient, and attractive walking environment on all the streets in the Plan Area.
- Ensure that transit serving the Plan Area is adequate, reliable and pleasant.

- Make cycling a safe and convenient transportation option throughout the Plan Area for all ages and abilities.
- Encourage mode shift away from private automobile usage.
- Prohibit new curb cuts on key major streets and limit them elsewhere.

Land Use and Local Impact Control Measures, also newly added in the *2010 Clean Air Plan*, are “designed to (1) promote mixed-use, compact development to reduce motor vehicle travel and emissions, and (2) ensure that we plan for focused growth in a way that protects people from exposure to air pollution from stationary and mobile sources of emissions.”³⁰¹ These measures include reducing DPM and greenhouse gas emissions from trucks; development of an “indirect source review rule” primarily aimed at reducing emissions from transportation and from construction equipment by imposing limitations on emissions from a particular site; updating the BAAQMD *CEQA Air Quality Guidelines* and enhancing the district’s review of CEQA documents to help new projects reduce emissions; assisting local governments in adopting “smart growth” land use patterns to reduce mobile source emissions, exposure of persons to TACs, and emissions related to energy use and waste disposal; reducing and tracking health risk in communities disproportionately affected by exposure to air pollution; and enhancing the district’s air quality monitoring program. Although most of the Land Use and Local Impact Control Measures address BAAQMD programs and are not directly applicable to the Plan, the Plan would further the district’s goals of reducing emissions from commuter travel by increasing development density in proximity to transit.

As noted above, LUM 1, Goods Movement, is intended to reduce exposure to diesel emissions from the movement of freight. The measure is particularly aimed at neighborhoods, like the Plan Area (along with most of the eastern half of the city), that the BAAQMD’s Community Air Risk Evaluation program has identified as being generally exposed to higher levels of TACs than are other communities. Regional implementation actions set forth under this measure include collaboration among stakeholders to reduce truck emissions; identification of strategies to shift some freight traffic from trucks to rail and barge; improving the efficiency of the regional freight distribution system; implementing best practices in warehousing and distribution; advocating for fees on cargo containers to fund air quality mitigation; and undertaking demonstration projects. At the local level, implementation actions include collaborative enforcement of regulations on truck idling, operation of truck refrigeration units, cargo handling equipment and the like; outreach to and incentive programs for truck operators; installation of signage, including truck route signs identifying suitable routes in and around communities affected by poor air quality; and centralization of truck services and overnight parking. The recently approved Western SoMa Plan proposed installation of truck route signs on Harrison and Bryant Streets, which also extend into the Plan Area, to encourage trucks to avoid other streets. Because these streets provide freeway access, and because they are generally less residential in nature than other major streets (i.e., excluding mid-block alleys) in the Plan Area, truck routes in the area would be consistent with control measure LUM 1. Although the Plan does not explicitly propose designation of truck routes or posting of signage, the proposed street network changes include reductions in vehicle capacity and an increase in bicycle and pedestrian facilities, notably on Folsom Street, which could have the effect of shifting some truck traffic to Harrison and Bryant Streets, particularly if Howard and Folsom Streets are converted to two-way

³⁰¹ BAAQMD, *2010 Clean Air Plan*, September 2010. Available at <http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/Clean-Air-Plans.aspx>.

traffic. In light of the foregoing, the Plan would be consistent with the Land Use and Local Impact Control Measures in the *2010 Clean Air Plan*.

Mobile Source Control Measures (MSMs) are those intended to reduce emissions by accelerating the replacement of older, dirtier vehicles and equipment through programs such as the BAAQMD's Vehicle Buy-Back and Smoking Vehicle Programs, as well as promoting advanced-technology vehicles. Such region-wide measures are not directly applicable to the Plan, although it is noted that the City is cooperating in the implementation of MSM A-2 (Zero-Emission Vehicles and Plug-In Hybrids) by installing electric vehicle charging stations; the implementation of MSM A-3 (Green Fleets) by incorporation into the City vehicle fleet of both hybrid vehicles and vehicles that use biodiesel fuel and by requiring, through amendment of the *Police Code*, reductions in greenhouse gas emissions by city taxis, which also reduces tailpipe emissions generally; and the implementation of MSM C-1 (Construction and Farm Equipment) by requiring, through its Clean Construction Ordinance (see p. IV.F-19), that most equipment on City-contracted construction projects use lower-emission diesel engines, particularly when proximate to sensitive receptors. The Plan would not conflict with any of these measures, and therefore the Plan would be consistent with the MSMs in the *2010 Clean Air Plan*.

Moreover, the Plan would not otherwise disrupt or hinder implementation of the *Clean Air Plan* by, for example, precluding extension or expansion of bicycle paths or routes (on the contrary, the Plan contains measures to enhance existing and planned bicycle lanes and to provide bicycle facilities and infrastructure in the Plan Area; precluding extension of a transit line (the Plan aims to enhance transit use); or provision of excessive parking beyond parking requirements (the Plan includes a policy to "Limit the parking in new development").

Finally, to demonstrate consistency with the *2010 Clean Air Plan*, a plan should support the primary goals of the *Clean Air Plan*, which are as follows:

- Attain air quality standards;
- Reduce population exposure and protect public health in the Bay Area; and
- Reduce greenhouse gas emissions and protect the climate.

With regard to attainment of air quality standards, the Plan would be consistent with the *2010 Clean Air Plan* through implementation of its policies. Specifically, the Plan identifies reduction of air pollution and greenhouse gases as regional and local factors that contribute to the need for the Plan.

As described above, the Plan would strongly support a large number of the applicable control measures in the *2010 Clean Air Plan* that are intended to help the Bay Area attain State and federal air quality standards. As discussed above, under Regulatory Framework, Article 38 of the *San Francisco Health Code* is intended to prevent future air quality health impacts to new residential uses near high-volume roadways and other areas of relatively higher exposure to poor air quality. New development in the Plan Area would be subject to this requirement, and therefore the Plan would protect public health through required adherence to *Health Code* Article 38.

Greenhouse gas emissions associated with the proposed Plan were discussed in the Initial Study where it is determined that the Plan would be consistent with the Greenhouse Gas Reduction Strategy, and therefore would result in less-than-significant impacts with regard to greenhouse gas emissions.

In light of the above, the Plan including subsequent development projects, proposed street network changes and open spaces improvements would be consistent with the *2010 Clean Air Plan* control measures, would not hinder implementation of the plan, and would support the primary goals of the plan; this impact would be *less than significant*.

Mitigation: None required.

Criteria Air Pollutants (Program-Level Plan Analysis)

Impact AQ-2: The Plan would not violate an air quality standard or contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard. (Less than Significant)

As discussed in the Approach to Analysis section, in order for a proposed plan to result in less than significant criteria air pollutant impacts, an analysis must demonstrate that the plan would be consistent with the control measures contained in the current regional air quality plan (the *2010 Clean Air Plan*), would support the primary objectives of that plan and would not hinder implementation of that plan; the plan's growth in VMT would not exceed the plan's population growth; and the plan would not cause localized CO impacts.

As demonstrated in Impact AQ-1, the Plan would be consistent with the control measures contained in the *2010 Clean Air Plan*, would support the primary objectives of that plan and would not hinder implementation of the plan. The remainder of the analysis addresses the Plan's growth in VMT and population and potential for localized CO impacts. This analysis is based on the plan-level thresholds identified by the BAAQMD in their CEQA Air Quality Guidelines.

Growth in Vehicle Miles Traveled Compared to Growth in Population

Growth projections prepared by the San Francisco Planning Department (and discussed under Analysis Assumptions in the Overview subsection of Chapter IV, Environmental Setting, Impacts, and Mitigation Measures) indicate that with implementation of the Plan, Plan Area residential population would increase from approximately 12,000 in 2010 to 37,500, by 2040, the analysis horizon year. This represents an increase of 213 percent. Additionally, employment is projected to grow from about 45,600 under existing conditions to approximately 109,200 by 2040, an increase of 139 percent. The combined population-employment ("service population") increase with implementation of the Plan, would therefore be approximately 154 percent $[(37,500 + 109,200) \div (12,000 + 45,600)] = 2.54$, or an increase of 154 percent from existing). Based on output from the County Transportation Authority travel demand model, daily VMT to and from the Plan Area would increase by approximately 77 percent by 2040, from approximately 987,000 to about 1.751 million. Because the growth in vehicle miles would be less than the growth in "service population," the Plan would result in a less-than-significant impact with respect to regional criteria air pollutants. In addition, the Plan includes goals and policies that would apply to development within the Plan Area. These policies would reduce criteria pollutant emissions, compared to other potential development in the city or in the region, by providing for additional high-density mixed-use development in an area with the most extensive array of transit service in the Bay Area, and by improving pedestrian and bicycle access within, to, and from the Plan Area. The Plan seeks to

improve transit, pedestrian, and bicycle accessibility and connections, thereby minimizing the need for automobile travel. The transportation analysis for the Plan reveals that VMT, as well as vehicle trip generation, would be substantially less than would be anticipated for a comparable level of development elsewhere in the Bay Area. In light of the analysis above, implementation of the Plan would result in a *less-than-significant* impact with respect to regional emissions of criteria air pollutants.

Carbon Monoxide

Unlike other criteria pollutants, whose effects are regional, CO impacts are evaluated locally. However, the BAAQMD generally recommends intersection-specific modeling of CO concentrations only for intersections where traffic volumes would exceed 44,000 vehicles per hour, based on modeling of vehicle emissions demonstrating that below this volume of traffic CO concentrations would not exceed the applicable State air quality standards. Based on the traffic analysis completed for the Plan, the maximum with Plan peak-hour traffic volume at any of the study intersections in the transportation study area (Sixth Street at Brannan Street) would be 5,920 vehicles, and the maximum at any of the study intersections would be 7,610 vehicles under 2040 cumulative conditions (also at Sixth and Brannan Streets). Therefore, modeling of CO concentrations is not required, and the Plan would not be anticipated to exceed the State one-hour or eight-hour CO standards. Therefore, impacts related to CO would also be *less than significant*.

As demonstrated in the above analysis, the Plan would be consistent with the control measures contained in the current regional air quality plan (the *2010 Clean Air Plan*), would support the primary objectives of the *2010 Clean Air Plan* and would not hinder implementation of the *2010 Clean Air Plan*. Additionally, the rate of growth in VMT with implementation of the Plan would not exceed the Plan's rate of population growth and the Plan would not cause localized CO impacts. Therefore, the Plan would not violate an air quality standard or contribute to an existing or projected air quality violation, or result in a cumulatively considerable net increase of any non-attainment criteria pollutant.

Mitigation: None required.

Criteria Air Pollutants (Project-level Analysis)

Impact AQ-3: Operation of subsequent individual development projects in the Plan Area and street network changes, but not proposed open space improvements, would violate an air quality standard, contribute to an existing or projected air quality violation, and/or result in a cumulatively considerable net increase of criteria pollutants for which the project region is in nonattainment under an applicable federal or State ambient air quality standard. (Significant and Unavoidable with Mitigation)

As noted above under Approach to Analysis, the significance of criteria air pollutant impacts from individual projects is determined through a quantitative comparison of a project's criteria pollutant emissions to the project-level significance thresholds. It is possible that individual development projects or the street network changes, if large enough, could result in significant effects related to emissions of criteria air pollutants, even if the overall plan is determined to have a less-than-significant impact. The BAAQMD, in its *CEQA Air Quality Guidelines* (May 2011) developed screening criteria to determine if operational emissions from projects would violate an air quality standard, contribute substantially to an air quality violation, or result in a cumulatively

considerable net increase in criteria air pollutants. A project that exceeds the screening criteria may require a detailed air quality assessment to determine whether criteria air pollutant emissions would exceed significance thresholds.³⁰² The screening criteria for land uses expected in the Plan Area are shown in Table IV.F-7, **Operational Criteria Air Pollutant Screening for Expected Plan Area Uses**.

TABLE IV.F-7 OPERATIONAL CRITERIA AIR POLLUTANT SCREENING FOR EXPECTED PLAN AREA USES

Land Use	Screening Size for Operational Criteria Pollutants (Pollutant of Concern in Parentheses)
Apartment/Condo, low-rise	451 du (ROG)
Apartment/Condo, mid-rise	494 du (ROG)
Apartment/Condo, high-rise	510 du (ROG)
Retirement community	487 du (ROG)
Congregate care facility	657 du (ROG)
Day-care center	53 ksf (NO _x)
Place of worship	439 ksf (NO _x)
City park	2613 acres (ROG)
Health club	128 ksf (NO _x)
Quality restaurant	47 ksf (NO _x)
High turnover restaurant	33 ksf (NO _x)
Fast food rest. w/ drive thru	6 ksf (NO _x)
Hotel	489 rooms (NO _x)
Retail store	83 ksf (NO _x)
Supermarket	42 ksf (NO _x)
General office building	346 ksf (NO _x)
Pharmacy/drugstore	48 ksf (NO _x)
Medical office building	117 ksf (NO _x)
Warehouse	864 ksf (NO _x)
General light industry	541 ksf (NO _x)
Manufacturing	992 ksf (NO _x)

SOURCE: Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, updated May 2011. Table 3-1.

NOTES:

du = dwelling units; ksf = thousand square feet; NO_x = oxides of nitrogen; ROG = reactive organic gases

Screening levels include indirect and area source emissions, but not backup generators or industrial sources.

Consequently, the potential exists for individual development projects within the Plan Area to generate vehicle trips and other operational emissions, such as emissions from natural gas combustion, landscape maintenance activities, and painting that would result in a significant increase in criteria air pollutants. As set

³⁰² Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, updated May 2011. Table 3-1.

forth in Table IV.F-6, the Plan includes or would further a number of *Clean Air Plan* Transportation Control Measures that would be expected to minimize vehicle trips. Additionally, the *Planning Code* contains requirements applicable to individual development projects that would serve to reduce vehicle trips, compared to conditions without such requirements. These include, but are not limited to, limits on permitted parking (Section 151.1); pricing non-residential parking to discourage long-term parking (Section 155(g)); provision of showers/lockers in new or renovated commercial projects (Section 155.3) and bicycle parking in commercial and residential projects (Sections 155.4 and 155.5); provision of on-site transportation brokerage services in larger office projects (Section 163); provision of car-share parking (Section 166); separating the cost of residential parking from the cost of a dwelling unit (Section 167); payment of a Transportation Sustainability Fee (Section 411A); and provision of on-site child care³⁰³ in office and hotel projects (Section 414). The City's *Environment Code* Section 421 mandates that larger employers provide transit, transit passes, or financial incentives for transit use (Section 421), which also has the potential to reduce vehicle travel. Additionally, the *San Francisco General Plan* and the *City Charter* contain numerous policy directives aimed at reducing auto trips, not the least of which is the City's Transit First Policy (Section 16.102 of the *Charter*). However, it is not possible to precisely quantify the reduction in vehicle trips that these code provisions and policies together would attain. Thus, in the absence of specific development proposals within the Plan Area, individual projects that would exceed the BAAQMD screening criteria are assumed to have the potential to result in emissions that could exceed applicable significance thresholds.

In regard to proposed street network changes, these projects would include conversion of Howard and Folsom Streets to accommodate additional travel modes including bicycles and transit, reduction in travel lanes and installation of transit only lanes and bicycle facilities on Third Street and Fourth Street, creation of transit only lanes on Bryant Street and Harrison Street and minor reconfiguration to Brannan Street. The street network changes would not generate new vehicle trips, but would result in additional vehicle delays throughout the Plan Area because they would reduce the number of mixed-flow lanes. As discussed in Section IV.D, Transportation and Circulation, the average delay per vehicle at intersections in the transportation study area would increase with the addition of vehicle trips associated with development under the Plan plus implementation of the proposed street network changes. The number of transportation study area intersections operating with an average delay of more than 55 seconds per vehicle during the AM peak hour would increase from 3 of 36 intersections analyzed under existing conditions to 21 intersections under the Howard/Folsom One-way Option, and during the PM peak hour from 19 of 80 intersections analyzed under existing conditions to 39 intersections under the Howard/Folsom One-way Option.

Increased delays at affected intersections from the proposed street network changes would result in slower vehicle speeds and would increase vehicle emissions, resulting in increased criteria air pollutant emissions than would occur during free-flowing traffic conditions. Given the number of proposed street network changes, it is conservatively judged that the street network changes would result in significant criteria air pollutant emissions as a result of slower moving vehicle speeds (and greater associated emissions).

In light of the above, the air quality impacts of subsequent individual projects and the street network changes would therefore be considered significant. Implementation of **Mitigation Measures M-NO-1a, Transportation Demand Management (TDM) for Development Projects**, in Section IV.E, Noise and Vibration, and **M-AQ-3a,**

³⁰³ This provision may be satisfied by an in-lieu fee, which would not necessarily result in the same trip reduction benefit.

Education for Residential and Commercial Tenants Concerning Low-VOC Consumer Products, M-AQ-3b, Reduce Operational Emissions, and M-AQ-5a, Best Available Control Technology for Diesel Generators and Fire Pumps, below, would reduce this impact, but the feasibility or effectiveness of mitigation measures identified below is unknown at this time; therefore, the air quality impacts associated with long-term development and proposed street network changes would be considered *significant and unavoidable*. For projects that would exceed BAAQMD operational screening criteria, the following mitigation measures are applicable.

Mitigation Measures

Implement **Mitigation Measure M-NO-1a, Transportation Demand Management (TDM) for Development Projects**. (See Section IV.E, Noise and Vibration.)

Mitigation Measure M-AQ-3a: Education for Residential and Commercial Tenants Concerning Low-VOC Consumer Products. Prior to receipt of any building permit and every five years thereafter, the project sponsor shall develop electronic correspondence to be distributed by email or posted on-site annually to tenants of the project that encourages the purchase of consumer products and paints that are better for the environment and generate less VOC emissions. The correspondence shall encourage environmentally preferable purchasing and shall include contact information and links to SF Approved.³⁰⁴

Mitigation Measure M-AQ-3b: Reduce Operational Emissions. Proposed projects that would exceed the criteria air pollutant thresholds in this EIR shall implement the additional measures, as applicable and feasible, to reduce operational criteria air pollutant emissions. Such measures may include, but are not limited to, the following:

- For any proposed refrigerated warehouses or large (greater than 20,000 square feet) grocery retailers, provide electrical hook-ups for diesel trucks with Transportation Refrigeration Units at the loading docks.
- Use low- and super-compliant VOC architectural coatings in maintaining buildings. “Low-VOC” refers to paints that meet the more stringent regulatory limits in South Coast Air Quality Management District Rule 1113; however, many manufacturers have reformulated to levels well below these limits. These are referred to as “Super-Compliant” architectural coatings.
- Implement **Mitigation Measure M-AQ-5a, Best Available Control Technology for Diesel Generators and Fire Pumps**.
- Other measures that are shown to effectively reduce criteria air pollutant emissions onsite or offsite if emissions reductions are realized within the SFBAAB. Measures to reduce emissions onsite are preferable to offsite emissions reductions.

Significance after Mitigation: The above measures are required for future individual development projects in the Plan Area that would exceed BAAQMD screening criteria. However, without specific detail on the size and extent of these projects, it is not possible to estimate emissions or the effectiveness or feasibility of the mitigation measure. Additionally, local government has no authority over vehicle emissions standards, which are established by federal and State law. Existing emissions laws and regulations, including the federal Corporate Average Fuel Economy requirements and California’s Clean Car (Pavley) Standards to reduce greenhouse gas

³⁰⁴ SF Approved (sfapproved.org) is administrated by the San Francisco Department of Environment staff, who identifies products and services that are safer and better for the environment (e.g., those that are listed as “Required” or “Suggested”).

emissions, would result in declining vehicle emissions over time. However, no feasible mitigation exists for criteria air pollutant emissions resulting from slower vehicle speeds (and increased idling times) that may occur as a result of the proposed street network changes. Consequently, this impact is conservatively identified as *significant and unavoidable with mitigation*. It should be noted that the identification of this significant impact does not preclude the finding of future less-than-significant impacts for subsequent projects that comply with applicable screening criteria or meet applicable thresholds of significance.

Open Space Improvements

The proposed open space improvements would not be of sufficient magnitude to draw large numbers of users from outside the immediate neighborhood; that is, all the improvements—generally, in the form of greening and related enhancements to mid-block streets and alleys, along with the potential for one or more neighborhood-serving parks—would not be city- or regional-serving in scale. Accordingly, the proposed open space improvements would be expected to generate little, if any, motor vehicle travel and thus would not result in substantial vehicular emissions. Given the relatively limited size of use of the proposed open space improvements, the use of fertilizers and other gardening and maintenance products would, likewise, not result in area-source emissions in excess of the significance criteria on p. IV.F-24. For these reasons, operational criteria air pollutant emissions from the open space improvements would be *less than significant*.

Conclusion

Individual development projects, including proposed street network changes, if large enough, could result in significant criteria air pollutant emissions. Without specific detail regarding the size and extent of each project, the feasibility of mitigation measures identified above to fully offset each subsequent project's significant criteria pollutant impact is unknown. Consequently, this impact is conservatively identified as *significant and unavoidable with mitigation*. Operational criteria air pollutant emissions from the open space improvements would be *less than significant*.

Impact AQ-4: Development under the Plan, but not the proposed street network changes and open space improvements, would result in construction activities that could violate an air quality standard, contribute to an existing or projected air quality violation, or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard. (Less than Significant with Mitigation)

Implementation of the Plan alone would not directly result in construction related-emissions. However, for the purposes of the Plan-level analysis, it is recognized that construction of subsequent development projects would result in criteria pollutant emissions, the effects of which are analyzed here. The potential impacts of construction-related emissions from the proposed street network changes and open space improvements would result in criteria pollutant emissions, which are also assessed here.

Subsequent Development Projects

Implementation of the Plan would allow for development of new office, residential, retail, and other uses, at a greater intensity than is currently allowed under existing land use controls. Most development projects in the

Plan Area would entail demolition and removal of existing structures and/or parking lots, excavation, and site preparation and construction of new buildings. Emissions generated during construction activities would include exhaust emissions from heavy duty construction equipment, trucks used to haul construction materials to and from sites, and worker vehicle emissions, as well as fugitive dust emissions associated with earth-disturbing activities and other demolition and construction work.

Construction Dust

Activities that generate dust include building and parking lot demolition, excavation, and equipment movement across unpaved construction sites. Dust can be an irritant causing watering eyes or irritation to the lungs, nose, and throat. Demolition, excavation, grading, and other construction activities can cause wind-blown dust that adds particulate matter to the local atmosphere. Depending on exposure, adverse health effects can occur due to this particulate matter in general and also due to specific contaminants such as lead or asbestos that may be constituents of soil.

In response, the San Francisco Board of Supervisors approved a series of amendments to the *San Francisco Building Code* and *Health Code* generally referred to as the Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008) with the intent of reducing the quantity of dust generated during site preparation, demolition and construction work in order to protect the health of the general public and of onsite workers, minimize public nuisance complaints, and avoid orders to stop work by DBI.

The Ordinance requires that all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specified dust control measures whether or not the activity requires a permit from DBI. The Director of DBI may waive this requirement for activities on sites less than one-half acre that are unlikely to result in any visible wind-blown dust.

For project sites over one-half acre, the Dust Control Ordinance requires that the project sponsor submit a Dust Control Plan for approval by the San Francisco Department of Public Health. 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.

The site-specific Dust Control Plan requires the project sponsor to submit a map to the Director of Public Health showing all sensitive receptors within 1,000 feet of the site; wet down areas of soil at least three times per day; provide an analysis of wind direction and install upwind and downwind particulate dust monitors; record particulate monitoring results; hire an independent, third-party to conduct inspections and keep a record of those inspections; establish shut-down conditions based on wind, soil migration, etc.; establish a hotline for surrounding community members who may be potentially affected by project-related dust; limit the area subject to construction activities at any one time; install dust curtains and windbreaks on the property lines, as necessary; limit the amount of soil in haul trucks to the size of the truck bed and secure with a tarpaulin; enforce a 15-mile-per-hour speed limit for vehicles entering and exiting construction areas; sweep affected streets with water sweepers at the end of the day; install and utilize wheel washers to clean truck tires; terminate construction activities when winds exceed 25 miles per hour; apply soil stabilizers to inactive areas; and sweep off adjacent streets to reduce particulate emissions. The project sponsor would be required to designate an individual to monitor compliance with these dust control requirements.

Compliance with the regulations and procedures set forth in the San Francisco Dust Control Ordinance would ensure that potential dust-related construction air quality impacts would be reduced to a *less-than-significant* level.

Construction Equipment Exhaust

Larger projects in the Plan Area could potentially generate emissions of criteria air pollutants that would exceed the significance criteria on p. IV.F-24. An analysis of construction emissions using CalEEMod was conducted for typical high-rise residential and office land uses, assuming construction in 2016 (a worst case year as improvements to the construction equipment fleet in future years would result in lesser emissions). High rise residential developments in excess of 500 units would have the potential to result in construction-related ROG emissions in excess of 54 pounds per day.³⁰⁵ General office developments in excess of 825,000 square feet would also have the potential to result in construction-related ROG emissions in excess of 54 pounds per day. The amount of construction period emissions would vary depending on project characteristics. For example, a project proposing less than 500 units or 825,000 square feet of non-residential use that requires substantial excavation (e.g., due to contaminated soils and/or to accommodate below-grade parking) may also exceed the construction significance criteria. Construction of subsequent individual development projects that exceed the criteria air pollutant significance thresholds would result in a *significant* impact.

Mitigation Measures

Mitigation Measure M-AQ-4a: Construction Emissions Analysis. Subsequent development projects that do not meet the applicable screening levels or that the Planning Department otherwise determines could exceed one or more significance thresholds for criteria air pollutants shall undergo an analysis of the project's construction emissions. If no significance thresholds are exceeded, no further mitigation is required. If one or more significance thresholds are exceeded, Mitigation Measure M-AQ-4b would be applicable to the project.

Mitigation Measure M-AQ-4b: Construction Emissions Minimization Plan. If required based on the analysis described in Mitigation Measure M-AQ-4a or as required in Impact AQ-6 the project sponsor shall submit a Construction Emissions Minimization Plan (Plan) to the Environmental Review Officer (ERO) for review and approval by an Environmental Planning Air Quality Specialist. The Plan shall be designed to reduce air pollutant emissions to the greatest degree practicable.

The Plan shall detail project compliance with the following requirements:

1. All off-road equipment greater than 25 horsepower and operating for more than 20 total hours over the entire duration of construction activities shall meet the following requirements:
 - a) Where access to alternative sources of power is available, portable diesel engines shall be prohibited;

³⁰⁵ The criteria of 500 units of residential uses or 825,000 square feet of office use is based on CalEEMod version 2013.2.2 year 2016 construction with the default construction equipment and construction phasing that would result in emissions of one or more criteria pollutants from project operation that would approach the significance thresholds.

- b) All off-road equipment shall have:
- i. Engines that meet or exceed either U.S. Environmental Protection Agency or California Air Resources Board Tier 2 off-road emission standards (or Tier 3 off-road emissions standards if NO_x emissions exceed applicable thresholds), *and*
 - ii. Engines that are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy (VDECS)³⁰⁶, *and*
 - iii. Engines shall be fueled with renewable diesel (at least 99 percent renewable diesel or R99).
- c) Exceptions:
- i. Exceptions to 1(a) may be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that an alternative source of power is limited or infeasible at the project site and that the requirements of this exception provision apply. Under this circumstance, the sponsor shall submit documentation of compliance with 1(b) for onsite power generation.
 - ii. Exceptions to 1(b)(ii) may be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that a particular piece of off-road equipment with an ARB Level 3 VDECS (1) is technically not feasible, (2) would not produce desired emissions reductions due to expected operating modes, (3) installing the control device would create a safety hazard or impaired visibility for the operator, or (4) there is a compelling emergency need to use off-road equipment that are not retrofitted with an ARB Level 3 VDECS and the sponsor has submitted documentation to the ERO that the requirements of this exception provision apply. If granted an exception to 1(b)(ii), the project sponsor shall comply with the requirements of 1(c)(iii).
 - iii. If an exception is granted pursuant to 1(c)(ii), the project sponsor shall provide the next-cleanest piece of off-road equipment as provided by the step down schedule in Table M-AQ-4:

TABLE M-AQ-4B OFF-ROAD EQUIPMENT COMPLIANCE STEP-DOWN SCHEDULE*

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

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

** Tier 3 off road emissions standards are required if NO_x emissions exceed applicable thresholds.

- iv. Exceptions to 1(b)(iii) may be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that a renewable diesel

³⁰⁶ Equipment with engines meeting Tier 4 Interim or Tier 4 Final emission standards automatically meet this requirement, therefore VDECS would not be required.

is not commercially available in the SFBAAB. If an exception is granted pursuant to this section, the project sponsor shall provide another type of alternative fuel, such as biodiesel (B20 or higher).

2. The project sponsor shall require the idling time for off-road and on-road equipment be limited to no more than two minutes, except as provided in exceptions to the applicable State regulations regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, Chinese) in designated queuing areas and at the construction site to remind operators of the two minute idling limit.
3. The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications.
4. The Plan shall include estimates of the construction timeline by phase with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information may include, but is not limited to, equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation. For the VDECS installed: technology type, serial number, make, model, manufacturer, ARB verification number level, and installation date and hour meter reading on installation date. For off-road equipment not using renewable diesel, reporting shall indicate the type of alternative fuel being used.
5. The Plan shall be kept on-site and available for review by any persons requesting it and a legible sign shall be posted at the perimeter of the construction site indicating to the public the basic requirements of the Plan and a way to request a copy of the Plan. The project sponsor shall provide copies of Plan as requested.
6. *Reporting.* Quarterly reports shall be submitted to the ERO indicating the construction phase and off-road equipment information used during each phase including the information required in Paragraph 4, above. In addition, for off-road equipment not using renewable diesel, reporting shall indicate the type of alternative fuel being used.

Within six months of the completion of construction activities, the project sponsor shall submit to the ERO a final report summarizing construction activities. The final report shall indicate the start and end dates and duration of each construction phase. For each phase, the report shall include detailed information required in Paragraph 4. In addition, for off-road equipment not using renewable diesel, reporting shall indicate the type of alternative fuel being used.

7. *Certification Statement and On-site Requirements.* Prior to the commencement of construction activities, the project sponsor shall certify (1) compliance with the Plan, and (2) all applicable requirements of the Plan have been incorporated into contract specifications.

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 pre-installed. Therefore, alternative compliance options are provided for in Mitigation Measure M-AQ-4b.

Significance after Mitigation: Implementation of Mitigation Measures M-AQ-4a and M-AQ-4b would ensure that construction-related emissions would be less than significant. Requiring Tier 3 construction equipment

can reduce construction emissions of ROG and NO_x by 14 and 36 percent, respectively while emissions of diesel particulate matter can be reduced by 89 to 94 percent with Level 3 VDECS compared to equipment with engines meeting no emission standards. Renewable diesel R100 has the potential to reduce particulate matter emissions by about 30 percent and NO_x emissions by 10 percent.³⁰⁷ Because construction emissions are assessed based on average daily emissions over the entirety of the construction period, and given the parcel sizes in the Plan Area,³⁰⁸ this level of reduction would be sufficient to ensure that even for larger projects in the Plan Area, construction related emissions would be below significance thresholds. Therefore, impacts associated with construction equipment exhaust emissions of criteria pollutants that would result from implementation of the Plan are considered *less than significant with mitigation*.

Street Network Changes

As described in Chapter II, Project Description, this EIR analyzes proposed street network changes at a project-specific level of detail. The proposed improvements would support pedestrian and cycling modes and lessen the impact of traffic on transit performance, while accommodating regional and through traffic on a limited number of streets where necessary. Proposals have been developed for Folsom, Howard, Third, Fourth, Harrison, Bryant, and Brannan Streets, extending as far west as Eleventh Street (in the case of Howard and Folsom Streets) and east to The Embarcadero (Folsom Street only). The proposals for these streets include wider sidewalks, upgraded and new transit lanes, cycle tracks, and travel lane reductions, as described in detail in Chapter II. Air quality-related effects of these improvements are analyzed here.

Construction activities to implement the street network changes would be subject to the Construction Dust Control Ordinance aimed at reducing the quantity of dust generated during site preparation, demolition and construction work in order to protect the health of the general public and of onsite workers, minimize public nuisance complaints, and avoid orders to stop work by DBI; in particular, Section 1247 makes the ordinance specifically applicable to construction on City property even where no *Building Code* permit requirement is triggered. The Ordinance requires that all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specified dust control measures whether or not the activity requires a permit from DBI. Compliance with the regulations and procedures set forth in the San Francisco Dust Control Ordinance would ensure that potential dust-related construction air quality impacts from the street network changes would be reduced to a less-than-significant level.

To calculate criteria air pollutant emissions associated with construction of these street network changes, the Planning Department performed an analysis that assumed that one block of streetscape construction could be completed in a single day to provide a conservative (i.e., higher) estimate of the daily emissions from construction activities.³⁰⁹ Streetscape improvements on a block-by-block basis were identified based on the information provided by the Department's Citywide Planning division. For each block, treatments (e.g., sidewalk widening, raised bicycle lanes, etc.) with a certain width that run continuously throughout the corridor were

³⁰⁷ California Environmental Protection Agency, *Staff Report: Multimedia Evaluation of Renewable Diesel*, May 2015. This document is available at http://www.arb.ca.gov/fuels/multimedia/meetings/RenewableDieselStaffReport_Nov2013.pdf.

³⁰⁸ Parcel size limits the amount of construction equipment and grading area at any one time.

³⁰⁹ San Francisco Planning Department, *Memorandum Regarding Criteria Pollutant Calculations for Central SoMa Construction Scenarios* from E. Jaszewski San Francisco Planning Department to E. Purl Planning Coordinator, June 23, 2014.

multiplied by 910 feet (a typical SoMa area block length, including intersection) to determine the construction area for each treatment. These results were then entered into the Department's Construction Criteria Pollutant Calculator under the appropriate treatment type. Emissions from streetscape construction on Brannan Street between Second and Sixth Streets resulted in the highest average daily emissions. Construction emissions from proposed streetscape improvements on the other corridors (Howard, Folsom, Harrison, Bryant, Third, and Fourth Streets) would be below the emissions levels expected for streetscape improvements proposed along Brannan Street. Therefore, streetscape improvements proposed for each block of Brannan Street would represent the average daily construction emissions expected. These worst-case construction-related emissions are presented in **Table IV.F-8, Average Daily Construction-Related Emissions**, and, as indicated in the table, would be less than significant. While it is not expected that lane painting would occur concurrently with construction improvements, the data in Table IV.F-8 conservatively assumes that they would.

TABLE IV.F-8 AVERAGE DAILY CONSTRUCTION-RELATED EMISSIONS

	Average Daily Construction Emissions (pounds/day)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Construction (Brannan Street)	2.7	24	1.3	1.2
Lane Painting	11	NA	NA	NA
Total	13.7	24	1.3	1.2
Significance Threshold	54	54	82	54
Above Threshold?	No	No	No	No

SOURCE: San Francisco Planning Department, 2014.

As shown in Table IV.F-8, construction criteria pollutant emissions from street network changes would be *less than significant*.

Mitigation: None required.

Open Space Improvements

Similar to subsequent development projects and street network changes, open space improvements would be required to comply with the Construction Dust Control Ordinance. Therefore, construction dust impacts would be less than significant.

Most of the proposed open space improvements, including greening and related enhancements to mid-block streets and alleys, would be of a magnitude comparable to the construction activities required for the street network changes, discussed above. Therefore, impacts of construction of these proposed open space improvements is effectively described by the impact analysis of the proposed street network changes, and would be less than significant with respect to criteria pollutants.

The Plan does include consideration of one larger open space, on the block bounded by Fourth, Fifth, Bryant, and Brannan Streets, at least in part on 1.4 acres of land owned by the SFPUC. In 2012, the Planning Department analyzed air quality impacts of the renovation of the 6.1-acre Minnie and Lovie Ward Playfields in the Oceanview district. This project involved demolition of the existing playfields; grading and utility trenching; installation of concrete curbs, walkways, fencing and light poles and their footings; installation of artificial turf,

and tree trimming, removal, and replacement over a proposed eight-month construction schedule. Maximum (peak-day) criteria pollutant emissions were found to be less than 60 percent of any of the significance thresholds on p. IV.F-24.³¹⁰ Furthermore, screening criteria were developed for typical City park land uses in CalEEMod, assuming construction in 2016 (a worst case year as improvements to the construction equipment fleet in future years would result in lesser emissions). Development of City parks of less than 20 acres would have construction-related ROG and NO_x emissions of less than 54 pounds per day³¹¹. Because the proposed park in the Plan Area (and any other potential new open space that might subsequently be proposed in, or adjacent to, the Plan Area) would be considerably smaller than the size of Minnie and Lovie Ward Playfields and the 20-acre parcel size screening criteria, and the general nature of site work would be comparable, criteria pollutant emissions from construction of open space improvements would be *less than significant*.

Mitigation: None required.

Conclusion

Mitigation Measure M-AQ-4a: Construction Emissions Analysis and **Mitigation Measure M-AQ-4b: Construction Emissions Minimization Plan** would substantially reduce criteria air pollutant emissions resulting from construction that may occur as a result of subsequent development projects. Consequently, this impact is identified as *less than significant with mitigation*. Construction-related criteria air pollutant emissions from street network changes and the open space improvements would be *less than significant*.

Community Risk and Hazard Impacts (Program-Level Plan Analysis and Analysis of Subsequent Development Projects, Street Network Changes, and Open Space Improvements)

Impact AQ-5: Development under the Plan, including proposed street network changes, would result in operational emissions of fine particulate matter (PM_{2.5}) and toxic air contaminants that would result in exposure of sensitive receptors to substantial pollutant concentrations. (Significant and Unavoidable with Mitigation)

As discussed in above on p. IV.F-9, the City has modeled air pollution from all known sources and has identified areas with poor air quality, known as the APEZ. The Plan, including subsequent development projects, would emit TACs and PM_{2.5} as a result of vehicle trips and stationary sources. Emissions of PM_{2.5} and other TACs could affect existing and future residences or other sensitive receptors, the effects of which are analyzed below.

Indirect Plan-Generated Mobile Source Emissions

At present, and as stated in the Environmental Setting, above, the vast majority of the Plan Area is located within the City's identified APEZ, an area where air pollutant levels exceed health protective standards. In

³¹⁰ San Francisco Planning Department, *Minnie and Lovie Ward Playfields Renovation Final Mitigated Negative Declaration* (Case No. 2011.0148E), September 20, 2012.

³¹¹ The threshold of 20 acres or more of city parkland is based on CalEEMod version 2013.2.2 year 2016 construction with the default construction equipment and construction phasing that would result in emissions of one or more criteria pollutants from project construction that would approach the City's significance thresholds.

addition, Plan-generated traffic and the proposed street network changes would add or relocate vehicle emissions that could substantially change the geographic extent and severity of the APEZ.

While there are two packages of street network changes contemplated, with the primary difference between the two being either a one-way or two-way configuration of Folsom and Howard Streets, the set of street network changes assuming a one-way configuration of Folsom and Howard Streets is anticipated to yield the most conservative overall (i.e., “worst case”) localized air pollutant impact based on a sensitivity analysis of traffic volumes prepared by the Planning Department.³¹² A scenario assuming implementation of the proposed zoning (use and height and bulk district) changes (without the street network changes) is anticipated to result, generally, in lower overall health risk impacts and a scenario assuming implementation of the zoning changes with a two-way configuration of Howard and Folsom Streets would result in air quality impacts similar to the one-way configuration of Howard and Folsom Streets. Consequently, a health risk assessment was conducted to estimate the incremental change in excess cancer risks and localized PM_{2.5} concentrations that would result from Plan-generated traffic assuming a one-way configuration of Howard and Folsom Streets.

The health risk assessment involved the use of the AERMOD air quality model to evaluate concentrations of DPM, Total Organic Gases (TOG), and PM_{2.5} along Plan Area streets. This allows for calculation of cancer risk (based on DPM from diesel vehicles and TOG from gasoline vehicles) and PM_{2.5} concentration. The modeling was conducted based on the “worst case” scenario described above. Other modeling parameters included 2008 BAAQMD meteorological data from the air district’s Mission Bay station; United States Geological Survey elevation data, vehicle emissions rates adjusted for San Francisco’s variation in traffic volumes throughout the day, a source release height of 2.5 meters and a source vertical dimension of 2.3 meters, and a ground-floor receptor height (0 meters). These parameters were consistent with those employed in the citywide modeling conducted previously and described above on p. IV.F-9. The analysis also incorporated updated health risk parameters from the Office of Environmental Health Hazard Assessment (OEHHA) that were adopted in 2015³¹³ and therefore not included in the existing citywide health risk modeling or APEZ. Results of the modeling were overlaid on top of the citywide modeling results (which were adjusted to account for updated OEHHA health risk guidelines) to determine whether the proposed project would substantially change the geographic extent or severity of the exposure zone, as defined in the Approach to Analysis subsection, p. IV.F-9.³¹⁴

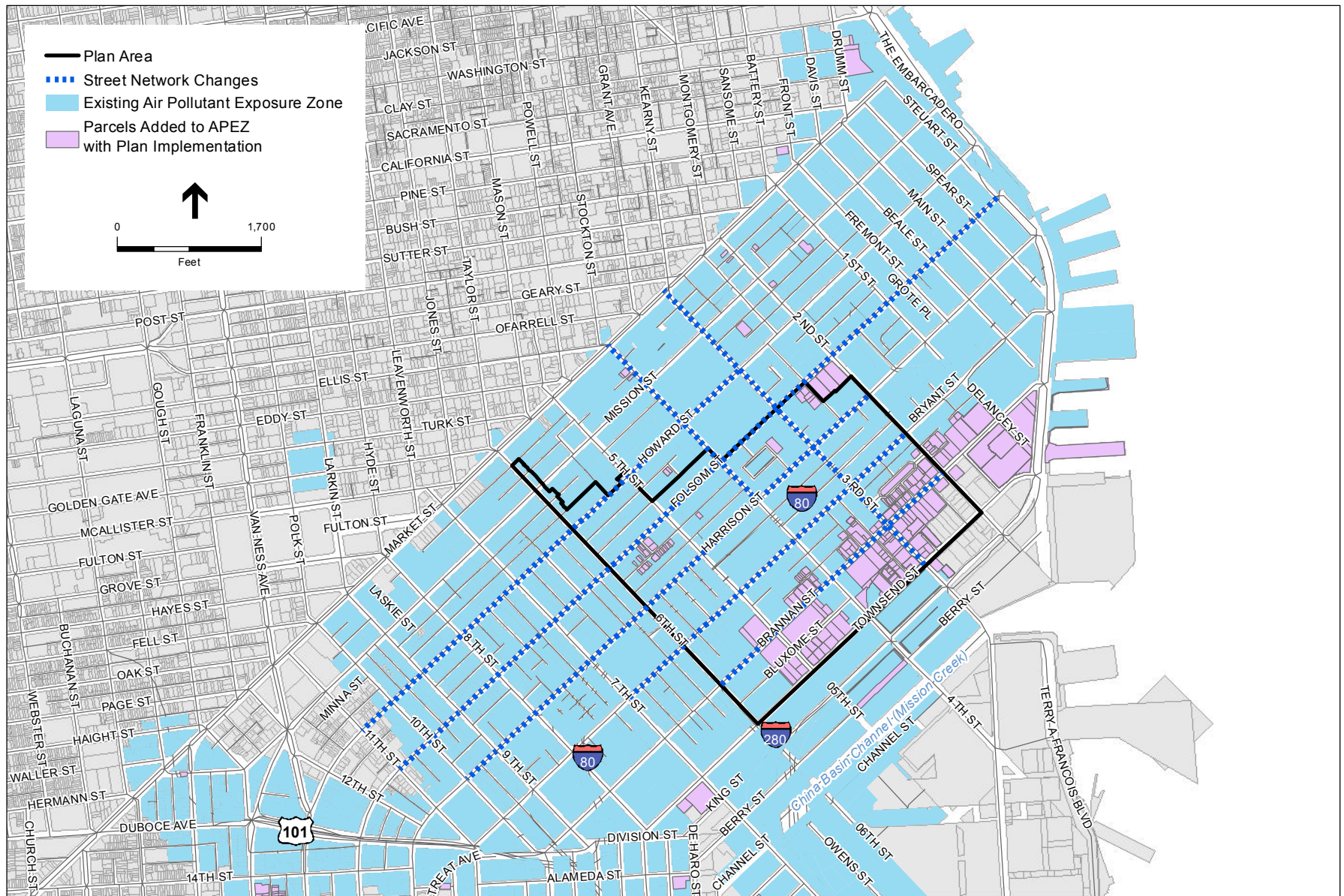
The results of the assessment indicate that Plan traffic would incrementally expand the geographic extent of the APEZ, adding to the APEZ all of the approximately 40 parcels north of the I-80 freeway that are currently outside the zone (these parcels are largely concentrated near Second and Folsom Streets and along Shipley Street between Fifth and Sixth Streets), and also adding to the APEZ a large number of parcels south of the freeway, including South Park. **Figure IV.F-2, Parcels Newly Added to Air Pollutant Exposure Zone with Plan Implementation**, depicts the additional parcels that would meet the APEZ criteria in comparison to the existing APEZ.³¹⁵

³¹² San Francisco Planning Department, *Central Corridor Sensitivity Analysis Methodology*, Memorandum from Erik Jaszewski to Elizabeth Purl, Environmental Planning, November 8, 2013.

³¹³ The updated health risk parameters from OEHHA require prior cancer risk calculations to be multiplied by a factor of 1.3744. This factor accounts for various changes in breathing rates and other exposure parameters.

³¹⁴ Environ International, *Air Quality Technical Report, Central SoMa Plan*, October 2014.

³¹⁵ Many parcels within the Plan Area would meet the APEZ criteria using the updated OEHHA exposure parameters without the additional emissions from plan-generated traffic.



SOURCE: City of San Francisco, 2016; ESA, 2016

Case No. 2011.1356E: Central SoMa Plan

Figure IV.F-2

Parcels Newly Added to Air Pollutant Exposure Zone with Plan Implementation

As a result of Plan-generated traffic, including the proposed street network changes, excess cancer risk within the Air Pollutant Exposure Zone would increase by as much as 226 in a million and PM_{2.5} concentrations would increase by up to 4.54 µg/m³ at individual receptor points. These levels substantially exceed the thresholds identified in the Approach to Analysis subsection.

Therefore, Plan-generated traffic would significantly affect both the geography and severity of health risks within, and proximate to, the Plan Area.

Mitigation Measure M-NO-1a, Transportation Demand Management (TDM), in Section IV.E, Noise and Vibration, would reduce vehicle emissions by reducing vehicle trips. As stated in that Section, Mitigation Measure M-NO-1a includes identification of a project TDM Coordinator, provision of transportation and trip planning information to building occupants, and components that encourage bicycles, car share, and transit, reduce parking, allow for City access for data collection, and TDM program monitoring. Additionally, as discussed in Impact AQ-3, the *Planning Code* contains requirements applicable to individual development projects that would serve to reduce vehicle trips, compared to conditions without such requirements. Section 421 of the City's *Environment Code* mandates that larger employers provide transit, transit passes, or financial incentives for transit use (Section 421), which also has the potential to reduce vehicle travel. Additionally, the *San Francisco General Plan* and the *City Charter* contain numerous policy directives aimed at reducing auto trips, not the least of which is the City's Transit First Policy (Section 16.102 of the *Charter*). However, the efficacy of these requirements and mitigation measures to reduce tailpipe emissions cannot be quantified because it is uncertain the degree to which these measures would reduce the number of vehicle trips, and resulting tailpipe emissions. Because vehicle emissions are regulated at the State and federal level, and no additional feasible mitigation measures have been identified to reduce vehicle emissions in the Plan Area, Plan-generated traffic would result in a *significant and unavoidable* impact.

Stationary and Non-Permitted Sources

Both existing and new stationary sources as well as other non-permitted sources in the Plan Area result in potential health risks (primarily lifetime cancer risk) to sensitive receptors, which would be expected to consist mostly of persons living in residential projects developed in the Plan Area.³¹⁶ As noted in the Environmental Setting, above, existing known stationary sources have been included in the modeling conducted for the APEZ. Additionally, the major non-permitted source of TACs in the vicinity of the Plan Area is the Caltrain station at Fourth and Townsend Streets, along with the Caltrain tracks that extend west along the south side of Townsend Street before turning south at Seventh Street. Emissions from the Caltrain station and tracks are also included in the APEZ dispersion modeling conducted by the BAAQMD and the City.³¹⁷

³¹⁶ Under recently updated health risk assessment protocols published by OEHHA in 2015 and BAAQMD in 2016, lifetime cancer risks to residents are calculated based on assumed exposure for 24 hours per day over a 30-year period, with additional risk factors included for infants and children because of their greater sensitivity. In contrast, employee risks are normally calculated based on exposure for 8 hours per day over 25 years. Therefore, for the same receptor location, resident risks are always higher than worker risks, and residents are considered "sensitive receptors," while workers generally are not. Other sensitive receptors likely to be found in the Plan Area include children and infants at child-care centers, of which there are several in the Plan Area. Hotel occupants are not considered sensitive receptors because they are transient, meaning they are exposed to risks at a particular location for only a few days at a time under most circumstances. These updated protocols have also increased breathing rate assumptions for sensitive receptors.

³¹⁷ Environ International, *Project and Plan-Level Health Risk Analysis: Western SoMa Community Plan, Rezoning of Adjacent Parcels and 350 8th Street Project, San Francisco, California*, May 2012.

Subsequent development projects in the Plan Area would result in potential health risks for sensitive receptors (primarily residents) in or near the Plan Area if these projects were to include sources of TACs. Among these sources would be diesel-powered emergency generators, which are required to be installed in taller buildings (generally, those with occupiable floors above 75 feet in height, in accordance with Section 2702.2.15 of the *San Francisco Building Code* [2013], adopted from the *California Building Code* without modification). Operation of these generators could expose nearby sensitive receptors to elevated concentrations of TACs and PM_{2.5}, although it would be speculative to try to quantify or otherwise analyze in detail those emissions, absent any detailed design proposals. Other potential sources of TACs include new gasoline stations and auto body shops, cogeneration (combined heat and electricity) facilities (possibly only for larger projects), as well as other specific commercial activities that emit TACs. Most new stationary sources, including backup generators, would require a permit from the BAAQMD, and BAAQMD permit requirements would generally reduce emissions from such sources. For example, all stationary engines greater than 50 horsepower require a BAAQMD permit and diesel engines must comply with a State-mandated TAC control measure for such engines, which is administered by BAAQMD. In general, BAAQMD will not issue a permit for a stationary diesel engine that would result in a cancer risk greater than ten in one million for the maximally exposed receptor. However, within the APEZ, additional emissions of TACs would be a significant impact, given that these areas already have poorer air quality and increased health vulnerability from air pollution. **Mitigation Measures M-AQ-5a, Best Available Control Technology for Diesel Generators and Fire Pumps; M-AQ-5b, Siting Uses that Emit Particulate Matter (PM_{2.5}), Diesel Particulate Matter, or Other Toxic Air Contaminants; and M-AQ-5d, Land Use Buffers around Active Loading Docks**, would reduce this impact to *less than significant* by ensuring that emissions from new sources of TACs are reduced to the extent feasible. Generators with Tier 4 engines emit 75 to 85 percent fewer DPM and PM_{2.5} emissions than Tier 2 engines, while emissions of diesel particulate matter can be reduced by 89 to 94 percent with Level 3 VDECS compared to equipment with engines meeting no emission standards. Furthermore, renewable diesel R100 has the potential to reduce particulate matter emissions by about 30 percent and NO_x emissions by 10 percent.³¹⁸

Exposure of Sensitive Receptors

As noted in the Environmental Setting, the City's APEZ is established based on emissions from all sources of TACs and PM_{2.5}, including both mobile and stationary sources and as discussed in the Regulatory Framework, *San Francisco Health Code* Article 38 protects new sensitive land uses from sources of air pollution by requiring that within the APEZ, these uses incorporate enhanced ventilation systems, including MERV 13 filtration, into building design and construction. MERV 13 air filtration is capable of removing 80 percent of particulate matter, thereby reducing an individual's exposure to air pollution. For projects proposing new sensitive land uses, most locations in the Plan Area are within the APEZ and would be required to install the enhanced filtration required by *Health Code* Article 38.

However, as discussed above, indirect traffic generated by the project, as well as the reconfiguration of the street network in the Plan Area would add and relocate vehicle emissions that would change the geographic extent and severity of the APEZ, significantly exacerbating existing localized air quality conditions. With plan traffic, the additional parcels discussed above and identified in Figure IV.F-2 would meet the APEZ criteria.

³¹⁸ California Environmental Protection Agency, *Staff Report: Multimedia Evaluation of Renewable Diesel*, May 2015. Available at http://www.arb.ca.gov/fuels/multimedia/meetings/RenewableDieselStaffReport_Nov2013.pdf.

These parcels are currently not subject to *Health Code* Article 38; therefore, new sensitive use projects proposed on these lots would be exposed to substantial pollutant concentrations resulting from Plan-generated traffic, a significant impact. As discussed in the Regulatory Framework, Article 38 requires DPH to periodically update the analysis and mapping identifying the APEZ. **Mitigation Measure M-AQ-5c, Update Air Pollution Exposure Zone for San Francisco Health Code Article 38**, would require DPH to update the APEZ in accordance with updated health risk guidelines adopted by OEHHA in 2015 and to take into account traffic generated by the Plan. Additionally, **Mitigation Measure M-AQ-5d, Land Use Buffers around Active Loading Docks**, would require sensitive receptors to be located as far away from truck activity areas as possible. These measures would reduce this impact to less than significant.

Mitigation Measures

Implement **M-NO-1a: Transportation Demand Management for New Development Projects**.

Mitigation Measure M-AQ-5a: Best Available Control Technology for Diesel Generators and Fire Pumps. All diesel generators and fire pumps shall have engines that (1) meet Tier 4 Final or Tier 4 Interim emission standards, or (2) meet Tier 2 emission standards and are equipped with a California Air Resources Board Level 3 Verified Diesel Emissions Control Strategy. All diesel generators and fire pumps shall be fueled with renewable diesel, R99, if commercially available. For each new diesel backup generator or fire pump permit submitted for the project, including any associated generator pads, engine and filter specifications shall be submitted to the San Francisco Planning Department for review and approval prior to issuance of a permit for the generator or fire pump from the San Francisco Department of Building Inspection. Once operational, all diesel backup generators and Verified Diesel Emissions Control Strategy shall be maintained in good working order in perpetuity and any future replacement of the diesel backup generators, fire pumps, and Level 3 Verified Diesel Emissions Control Strategy filters shall be required to be consistent with these emissions specifications. The operator of the facility shall maintain records of the testing schedule for each diesel backup generator and fire pump for the life of that diesel backup generator and fire pump and provide this information for review to the Planning Department within three months of requesting such information.

Mitigation Measure M-AQ-5b: Siting of Uses that Emit Particulate Matter (PM_{2.5}), Diesel Particulate Matter, or Other Toxic Air Contaminants. To minimize potential exposure of sensitive receptors to diesel particulate matter or substantial levels of toxic air contaminants as part of everyday operations from stationary or area sources (other than the sources listed in M-AQ-5a), the San Francisco Planning Department shall require, during the environmental review process of such projects, but not later than the first project approval action, the preparation of an analysis by a qualified air quality specialist that includes, at a minimum, a site survey to identify residential or other sensitive receptors within 1,000 feet of the project site. For purposes of this measure, sensitive receptors are considered to include housing units; child care centers; schools (high school age and below); and inpatient health care facilities, including nursing or retirement homes and similar establishments. The assessment shall also include an estimate of emissions of toxic air contaminants from the source and shall identify all feasible measures to reduce emissions. These measures shall be incorporated into the project prior to the first approval action.

Mitigation Measure M-AQ-5c: Update Air Pollution Exposure Zone for San Francisco Health Code Article 38. The Department of Public Health is required to update the Air Pollution Exposure Zone Map in *San Francisco Health Code* Article 38 at least every five years. The Planning Department shall

coordinate with the Department of Public Health to update the Air Pollution Exposure Zone taking into account updated health risk methodologies and traffic generated by the Central SoMa Plan.

Mitigation Measure M-AQ-5d: Land Use Buffers around Active Loading Docks. Locate sensitive receptors as far away as feasible from truck activity areas including loading docks and delivery areas.

Significance after Mitigation: Mitigation Measures M-AQ-5a and M-AQ-5b would reduce emissions of PM_{2.5} and other TACs from new stationary sources to less-than-significant levels. Mitigation Measure M-AQ-5c and M-AQ-5d would protect new sensitive land uses from emissions associated with truck activity areas and on sites not currently subject to Article 38, reducing exposure of new sensitive land uses from Plan-generated traffic emissions to *less than significant*.

Mobile sources generated by the Plan would significantly affect the geography and severity of the Air Pollutant Exposure Zone. Mitigation Measure M-NO-1a, Transportation Demand Management for New Development Projects, in Section IV.E, Noise and Vibration, would reduce the number of vehicle trips generated by the Plan, but because the degree to which trips (and thereby emissions) could be reduced by these measures cannot be reliably estimated, and because vehicle emissions are regulated at the State and federal level and local jurisdictions are preempted from imposing stricter emissions standards for vehicles, and because no other feasible mitigations are available, the impact of traffic-generated TACs on existing sensitive receptors would be *significant and unavoidable*.

As explained in Impact AQ-3, the proposed open space improvements would not be of sufficient magnitude to draw large numbers of users from outside the immediate neighborhood. Accordingly, the proposed open space improvements would be expected to generate little, if any, motor vehicle travel and thus would make a *less-than-significant* contribution to vehicular emissions.

Impact AQ-6: Development under the Plan, including proposed open space improvements and street network changes, would result in construction activities that could expose sensitive receptors to substantial levels of fine particulate matter (PM_{2.5}) and toxic air contaminants generated by construction equipment. (Less than Significant with Mitigation)

Subsequent Development Projects

Diesel-powered construction equipment generates emissions of DPM, which is identified as a carcinogen by ARB. As noted in the Significance Criteria discussion of health risks, on p. IV.F-21, construction-phase emissions of TACs are temporary and do not easily lend themselves to health risk modeling, which normally relies on longer-term exposure periods. Therefore, project-level analyses of construction activities have a tendency to produce overestimated assessments of long-term health risks. However, within the APEZ, as discussed above, additional construction activity would adversely affect populations that are already at a higher risk for adverse long-term health risks from existing sources of air pollution. The Plan would also indirectly generate additional vehicle trips that would result in additional parcels meeting the APEZ criteria, as shown in Figure IV.F-2. Construction activities using off-road diesel equipment and vehicles in these areas would expose sensitive receptors to substantial levels of air pollution, a significant impact. Accordingly, subsequent development projects within the APEZ and on lots identified in Figure IV.F-2 as being newly within the Exposure Zone would be subject to **Mitigation Measure M-AQ-6a, Construction Emissions**

Minimization Plan, which would reduce this impact to a less-than-significant level. Mitigation Measure M-AQ-6a identifies the locations where a Construction Emissions Minimization Plan is required to reduce health risk effects from construction emissions.

While emission reductions from limiting idling, educating workers and the public, and properly maintaining equipment are difficult to quantify, other measures, specifically the requirement for equipment with Tier 2 engines and Level 3 Verified Diesel Emission Control Strategy (VDECS), can reduce construction emissions by 89 to 94 percent compared to equipment with engines meeting no emission standards and without a VDECS. Emissions reductions from the combination of Tier 2 equipment with level 3 VDECS is almost equivalent to requiring only equipment with Tier 4 Final engines. Furthermore, renewable diesel R100 has the potential to reduce particulate matter emissions by about 30 percent and NO_x emissions by 10 percent.³¹⁹ Therefore, compliance with Mitigation Measure M-AQ-6 would reduce construction emissions impacts to nearby sensitive receptors to a less-than-significant level.

Mitigation Measures

Mitigation Measure M-AQ-6a: Construction Emissions Minimization Plan. All projects within the Air Pollutant Exposure Zone and newly added Air Pollutant Exposure Zone lots identified in Figure IV.F-2 shall comply with M-AQ-4b, Construction Emissions Minimization Plan.

Significance after Mitigation: Implementation of Mitigation Measure M-AQ-6a would reduce construction diesel emissions by 89 to 95 percent compared to construction equipment with no emissions controls and would reduce the impact to a *less-than-significant* level.

Street Network Changes and Open Space Improvements

Public projects such as the proposed street network changes and open space improvements would be subject to the conditions of the Clean Construction Ordinance. This ordinance requires implementation of measures to reduce diesel emissions generated at publicly funded construction sites and thereby related potential health risks. Specifically, the ordinance requires that City-funded projects employing heavy off-road equipment for 20 days or more that are within 1,000 feet of a sensitive receptor and within the APEZ use diesel engines that meet or exceed either EPA or ARB Tier 2 off-road emission standards and be retrofitted with an ARB Level 3 VDECS. Additionally, the ordinance prohibits the use of portable diesel engines where alternative sources of power are available (i.e., requires use of available utility-provided electricity in lieu of a diesel generator), limits idling of diesel engines, requires that equipment be properly maintained and tuned, and mandates submittal to the authorizing City department of a Construction Emissions Minimization Plan prior to the start of work. Waivers to the equipment requirements may be granted only if compliance is not feasible or in case of emergency. For projects outside the APEZ, the ordinance requires the use of biodiesel fuel grade B20 or higher for off-road diesel equipment and use of Tier 2 or similar off-road equipment. However, as discussed above, the plan would indirectly generate additional vehicle trips that would result in additional areas meeting the APEZ health risk criteria as shown in Figure IV.F-2. Construction activities on, or adjacent to, these parcels would adversely affect populations already at a higher risk for adverse long-term health risks, a

³¹⁹ California Environmental Protection Agency, *Staff Report: Multimedia Evaluation of Renewable Diesel*, May 2015. Available at http://www.arb.ca.gov/fuels/multimedia/meetings/RenewableDieselStaffReport_Nov2013.pdf.

significant impact. **Mitigation Measure M-AQ-6b** would apply the more stringent clean construction requirements to those areas, reducing the impact to *less than significant with mitigation*.

Mitigation Measures

Mitigation Measure M-AQ-6b: Implement Clean Construction Requirements. Construction of street network changes and open space improvements adjacent to newly added air pollution exposure zone lots identified in Figure IV.F-2 shall comply with the Clean Construction requirements for projects located within the APEZ.

Significance after Mitigation: Mitigation Measure M-AQ-6b would apply the more stringent requirements for clean construction equipment within the areas that would meet the APEZ criteria under existing plus project conditions and would reduce this impact to *less than significant*.

Conclusion

Mitigation Measures M-AQ-6a, Construction Emissions Minimization Plan, and M-AQ-6b, Implement Clean Construction Requirements, would reduce TAC emissions resulting from construction that may occur as a result of subsequent development projects and proposed street network changes and open space improvements. Consequently, this impact is identified as *less than significant with mitigation*.

Impact AQ-7: Implementation of the Plan would not expose a substantial number of people to objectionable odors affecting a substantial number of people. (Less than Significant)

As stated under Environmental Setting, above, likely potential sources of odors in the Plan Area are generally limited to auto body shops. Some people may find odors from restaurants objectionable at times, although restaurants are unlikely to generate a substantial number of complaints. Additionally, BAAQMD Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Sources that typically generate odors such as wastewater treatment and pumping facilities; landfills, transfer stations, and composting facilities; petroleum refineries, asphalt batch plants, chemical (including fiberglass) manufacturing, and metal smelters; painting and coating operations; rendering plants; coffee roasters and food processing facilities are generally not present in the Plan Area. Given the limited number of land uses in the Plan Area that would likely be associated with odorous emissions, as described in the Environmental Setting, and given that few, if any, major new odor sources are likely to be developed in the Plan Area, odor impacts would be *less than significant*.

Mitigation: None required.

IV.F.5 Cumulative Impacts

Impact C-AQ-1: Development under the Plan, including proposed street network changes, but not open space improvements, in combination with past, present, and reasonably foreseeable future projects in the vicinity, under cumulative 2040 conditions, would contribute considerably to criteria air pollutant impacts. (Significant and Unavoidable with Mitigation)

BAAQMD considers criteria air pollutant impacts to be cumulative by nature. As indicated in Impact AQ-4, implementation of Mitigation Measures M-AQ-4a and M-AQ-4b would ensure that construction-related emissions would be less than significant. Accordingly, the Plan would not result in a cumulatively considerable contribution of criteria air pollutants from construction. Additionally, the proposed street network and open space improvements would not result in construction-related criteria air pollutants in excess of the project-level significance thresholds, and would therefore not make a considerable contribution to this cumulative impact.

Operational criteria air pollutant emissions of the Plan (assessed using the Plan-level thresholds from the BAAQMD), addressed individually and cumulatively in Impacts AQ-1 and AQ-2 would not make a considerable contribution to regional emissions of criteria air pollutants, given the Plan's consistency with the *Clean Air Plan*, the modest growth in VMT compared to population growth as well as not resulting in intersection volumes that would trigger a concern with regard to localized CO concentrations. However, as discussed under Impact AQ-3, subsequent individual development projects and proposed street network changes could emit criteria air pollutants or result in increased vehicle delays thereby increasing vehicle emissions in excess of the project-level significance criteria, resulting in a considerable contribution to cumulative air quality impacts. Subsequent projects with the potential to result in a considerable contribution to cumulative air quality impacts would be required to implement the transportation demand management actions identified in **Mitigation Measure M-NO-1a, Transportation Demand Management (TDM)**, in Section IV.E, Noise and Vibration. Certain subsequent development projects could also be subject to **M-AQ-3a, Education for Residential and Commercial Tenants Concerning Low-VOC Consumer Products**, **M-AQ-3b, Reduce Operational Emissions**, and **M-AQ-5a, Best Available Control Technology for Diesel Generators and Fire Pumps**. However, because it cannot be stated with certainty that mitigation would reduce cumulative criteria air pollutant impacts to less-than-significant levels; this impact is considered significant and unavoidable with mitigation. Potential open space improvements in the Plan Area would be considerably smaller in size and less than 20 acres, and would therefore not make considerable contribution to criteria pollutant emissions. Therefore cumulative operational criteria air pollutant impacts from open space improvements would be *less than significant*.

Mitigation: Implement **Mitigation Measures M-NO-1a, Transportation Demand Management (TDM) for Development Projects**, in Section IV.E, Noise and Vibration, and **M-AQ-3a, Education for Residential and Commercial Tenants Concerning Low-VOC Consumer Products**, **M-AQ-3b, Reduce Operational Emissions**, and **M-AQ-5a, Best Available Control Technology for Diesel Generators and Fire Pumps**; **M-AQ-4a, Construction Emissions Minimization**; and **M-AQ-4b, Construction Emissions Reduction Plan**.

Significance after Mitigation: Even with implementation of these mitigation measures, impacts with respect to subsequent development projects in the Plan Area and proposed street network changes under 2040

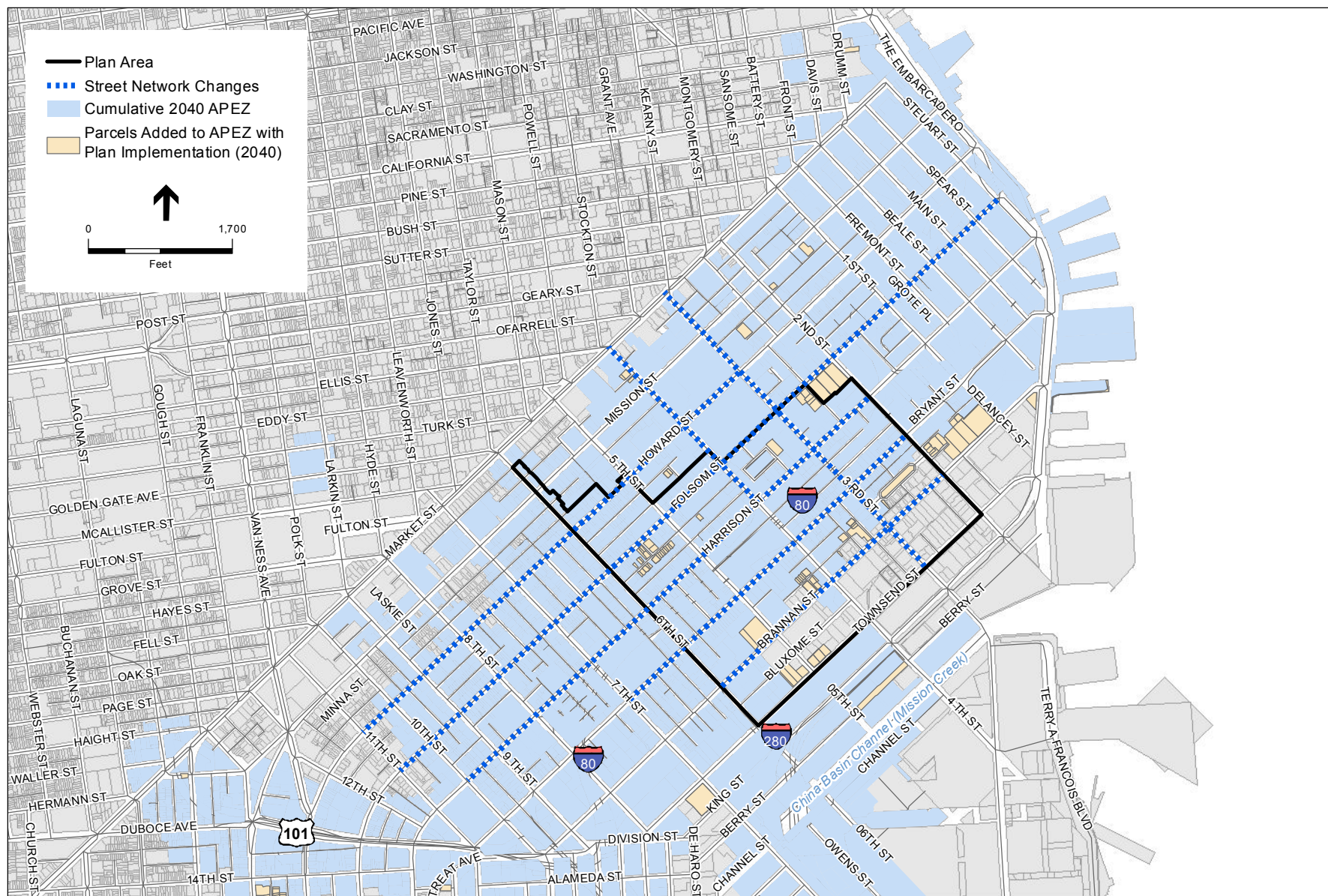
cumulative conditions would be *significant and unavoidable*. As noted in Impact AQ-3, however, the identification of this significant impact does not preclude the finding of future less-than-significant impacts for subsequent projects that comply with applicable screening criteria or meet applicable thresholds of significance.

Impact C-AQ-2: Development under the Plan, including the proposed street network changes, but not open space improvements, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would result in exposure of sensitive receptors to substantial levels of fine particulate matter (PM_{2.5}) and toxic air contaminants under 2040 cumulative conditions. (Significant and Unavoidable with Mitigation)

As described above in Impact AQ-5, the Plan would indirectly result in traffic emissions and emissions from stationary sources that would have a significant effect on sensitive receptors. These emissions would contribute considerably to cumulative health risk effects within the Plan Area and vicinity. Therefore, the Plan would result in a significant cumulative impact with respect to PM 2.5 and TAC emissions.

The results of the cumulative health risk assessment indicate that Plan-generated traffic would increase the geographic extent of the APEZ under 2040 cumulative conditions, compared to existing conditions. However, because of anticipated decreases in emissions with improved vehicle efficiency and emissions controls, the anticipated APEZ in 2040 would be smaller than would the APEZ modeled for existing plus project conditions. **Figure IV.F-3, Parcels Newly Added to Air Pollutant Exposure Zone with Plan Implementation (2040)**, p. IV.F-56, graphically depicts the additional parcels that would meet the APEZ criteria under cumulative plus project conditions in comparison to the existing APEZ.

Within the APEZ, Plan-generated traffic would increase excess cancer risk by more than seven per one million persons exposed, while PM_{2.5} concentrations would increase by up to 0.17 µg/m³ at individual receptor points. As explained in the Approach to Analysis, an increased cancer risk greater than seven per million persons exposed within the APEZ would be a significant impact. The noise analysis identifies Mitigation Measure M-NO-1a, Transportation Demand Management (TDM), in Section IV.E, Noise and Vibration, which would reduce vehicle emissions through transportation demand management and other measures. Additionally, as discussed in Impact AQ-3, the *Planning Code* contains requirements applicable to individual development projects that would serve to reduce vehicle trips, compared to conditions without such requirements. Section 421 of the City's *Environment Code* mandates that larger employers provide transit, transit passes, or financial incentives for transit use (Section 421), which also has the potential to reduce vehicle travel. Additionally, the *San Francisco General Plan* and the *City Charter* contain numerous policy directives aimed at reducing auto trips, not the least of which is the City's Transit First Policy (Section 16.102 of the Charter). However, the efficacy of these measures to reduce tailpipe emissions cannot be quantified because it is uncertain the degree to which these measures would reduce the number of vehicle trips. Therefore, Plan-generated traffic would significantly affect both the geography and severity of health risks within the Plan Area under 2040 cumulative conditions, resulting in a considerable contribution to cumulative health risk impacts. The proposed street network changes would not generate new vehicle trips but would relocate vehicle trips, thereby potentially exacerbating this impact.



SOURCE: City of San Francisco, 2016; ESA, 2016

Case No. 2011.1356E: Central SoMa Plan

Figure IV.F-3

Parcels Newly Added to Air Pollutant Exposure Zone with Plan Implementation (2040)

The proposed open space improvements would not be of sufficient magnitude to draw large numbers of users from outside the immediate neighborhood and would be expected to generate little, if any, motor vehicle travel. Therefore, the proposed open space improvements would not make a considerable contribution to cumulative health risk impacts.

As described above in Impact AQ-6, development under the Plan would result in construction activities that could expose sensitive receptors to substantial levels of fine particulate matter and TACs generated by construction equipment, particularly from diesel emissions. However, implementation of Mitigation Measure M-AQ-6a, Construction Emissions Minimization Plan, would require all projects within the APEZ and newly added APEZ lots identified in Figure IV.F-2 to comply with Mitigation Measure M-AQ-4b, Construction Emissions Minimization Plan. This would reduce construction diesel emissions by 89 to 95 percent, reducing the impact to less than significant. Therefore, construction emissions would not make a considerable contribution to cumulative health risk impacts. The proposed open space improvements and street network changes would be required to comply with the Clean Construction Ordinance. However, the more stringent clean construction requirements only apply to parcels in the existing APEZ. Therefore, construction of street network changes and open space improvements adjacent to newly added parcels as shown on Figure IV.F-2 would result in significant health risk impacts to adjacent sensitive receptors. Mitigation Measure M-AQ-6b would require implementation of the more stringent requirements of the Clean Construction Ordinance for construction on or adjacent to the newly added parcels shown in Figure IV.F-2. Therefore, with implementation of M-AQ-6b, construction of open space improvements and street network changes would not make a considerable contribution to cumulative health risks.

Mitigation: Implement Mitigation Measures M-NO-1a: Transportation Demand Management for New Development Projects; M-AQ-4b, Construction Emissions Minimization Plan; M-AQ-5a, Best Available Control Technology for Diesel Generators and Fire Pumps; M-AQ-5b, Siting of Uses that Emit Particulate Matter (PM_{2.5}), Diesel Particulate Matter, or Other Toxic Air Contaminants; M-AQ-5c, Update Air Pollution Exposure Zone for *San Francisco Health Code* Article 38; and M-AQ-6b, Implement Clean Construction Requirements. As discussed above, the Department of Public Health is required to update the Air Pollutant Exposure Zone map at least every five years in accordance with *San Francisco Health Code* Article 38. The updated mapping would capture parcels that could be added to the APEZ as a result of future traffic. Mitigation Measures M-AQ-4b, M-AQ-5a, and M-AQ-6b would apply to the Air Pollutant Exposure Zone of *San Francisco Health Code* Article 38 in effect at the time subsequent development projects are proposed.

Significance after Mitigation: Even with implementation of these mitigation measures, cumulative impacts with respect to subsequent development projects and proposed street network changes, and emissions of TACs generated by development occurring pursuant to the Plan under 2040 cumulative conditions would result in significant cumulative impacts to existing sensitive receptors and this impact would be *significant and unavoidable with mitigation*.

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IV.G Wind

IV.G.1 Introduction

This section describes potential wind impacts associated with implementation of the Plan's height and bulk amendments and the likely future development under the Plan, including proposed street network changes and open space improvements. The analysis focuses on the potential for wind impacts on pedestrian areas such as sidewalks and plazas. The study area for the wind analysis is the entire Plan Area.

IV.G.2 Environmental Setting

San Francisco's Existing Climate and Wind Environment

Historic data collected at the old San Francisco Federal Building at 50 United Nations Plaza over a six-year period show that average wind speeds in the city are the highest in the summer and lowest in winter. However, the strongest peak wind speeds occur in winter (wind direction is also most variable in the winter). Wind speeds are diurnal and fluctuate throughout the day, with the highest average wind speeds occurring during the mid-afternoon and the lowest in the early morning. Based on over 40 years of recordkeeping, the highest mean hourly wind speeds (approximately 20 miles per hour [mph]) occur in July, while the lowest mean hourly wind speeds (in the range of 6 mph to 9 mph) occur in November.

In the city, westerly to northwesterly winds are the most frequent and strongest winds during all seasons.³²⁰ Of the 16 primary wind directions, five have the greatest frequency of occurrence: the northwest (accounting for 10 percent of all winds), west-northwest (14 percent of all winds), west (35 percent of all winds), west-southwest (2 percent of all winds), and southwest (9 percent of all winds).³²¹ Over 90 percent of measured winds over 13 mph—the speed at which pedestrians begin to feel discomfort—blow from these directions.

Wind Effects on People

The comfort of pedestrians varies under different wind conditions.³²² Winds up to about 3.5 mph have no noticeable effect on pedestrian comfort. With speeds from 4 mph to 7 mph, wind is felt on the face. Winds from 8 mph to 12 mph will disturb hair, cause clothing to flap, and extend a light flag mounted on a pole. Winds from 13 mph to 18 mph will raise loose paper, dust, and dry soil, and will disarrange hair. For winds from 19 mph to 24 mph, the force of the wind will be felt on the body. With 25 mph to 31 mph winds,

³²⁰ Wind directions are reported as directions from which the winds blow.

³²¹ The 16 primary wind directions, clockwise beginning with west winds, are west, west-northwest, northwest, north-northwest, north, north-northeast, northeast, east-northeast, east, east-southeast, southeast, south-southeast, south, south-southwest, southwest, and west-southwest.

³²² National Weather Service, "JetStream Max – Online School for Weather, Beaufort Wind Force Scale," webpage. Available at: http://www.srh.noaa.gov/jetstream/ocean/beaufort_max.htm, accessed on August 29, 2016; and Lawson, T.V. and A.D. Penwarden, "The Effects of Wind on People in the Vicinity of Buildings," Proceedings of the Fourth International Conference on Wind Effects on Buildings and Structures, London, 1975, Cambridge University Press, Cambridge, U.K., 605–622, 1976.

umbrellas are used with difficulty, hair is blown straight, there is difficulty in walking steadily, and wind noise is unpleasant. Winds over 31 mph cause noticeable inconvenience due to the effort expended during walking, while winds greater than 38 mph make it nearly impossible to walk into the wind, and gusts can blow people over.

Wind Effects from Buildings

Tall buildings and exposed structures can strongly affect the wind environment for pedestrians. A building that stands alone or is much taller than the surrounding buildings can 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 (variability in wind speed and pressure). These redirected winds, or down-drafts, can be relatively strong and turbulent, and may in some instances be incompatible with the intended uses of nearby ground-level spaces. Conversely, a building with a height that is similar to the heights of surrounding buildings typically would cause little or no additional ground-level wind acceleration and turbulence. In addition to the localized effects from individual buildings, larger groups of buildings interact with and tend to slow the approaching winds, due to the friction and drag created by the many individual structures.

Thus, wind impacts are generally caused by large building masses extending substantially above their surroundings, and by buildings oriented so that a large wall catches a prevailing wind, particularly if such a wall includes little or no articulation. In general, new buildings less than 80 feet in height above ground surface are unlikely to result in substantial adverse effects on ground-level winds such that pedestrians would be uncomfortable. (Such winds may occur under existing conditions, but shorter buildings typically do not cause substantial changes in ground-level winds.)

Wind Patterns in the Plan Area Vicinity

Average wind speeds in San Francisco are the highest in the summer and lowest in winter; however, the strongest peak winds occur in winter. Throughout the year, the highest wind speeds occur in mid-afternoon and the lowest in the early morning. Prior experience with wind testing indicates that the Plan Area is windy, especially along Fourth Street south of Harrison Street, Third Street from Harrison to Brannan Streets, and Fifth Street from south of Bryant Street to Bluxome Street.

Both the upwind topography and the nearby buildings strongly influence wind conditions within the Plan Area. The wind patterns south of Market Street are strongly affected by the west, west-northwest, and northwest winds that approach over the street and building grid that exists north of Market Street. There, westerly winds, which are the most frequent and relatively strong, align with and are channeled into the east/west-oriented streets north of Market Street and approach Market Street relatively unimpeded at pedestrian level. Similarly, the west-northwesterly winds are also channeled into the east/west-oriented streets, but their speeds tend to be reduced due to their greater misalignment with the street grid. However, both the west and the west-northwest winds, which account for nearly half of the city's winds combined, contribute to the strong winds that flow along the east/west-oriented streets.

Northwest winds are impeded at the street level north of Market Street, due to their misalignment with the street grid, which is oriented nearly north/south and east/west; however, these winds continue to flow

overhead, toward the Plan Area. Southwest winds are similarly impeded at street level; they also continue to flow overhead, but they do not flow toward the South of Market (SoMa) area. Both northwest winds and southwest winds also contribute to winds along the east/west-oriented streets.

The street grid south of Market Street is offset from the North-of-Market Street grid by approximately 45 degrees. As a result, winds from the north and west either encounter the street wall (i.e., buildings) that redirects them along Market Street or they encounter an intersection with streets perpendicular to Market Street (i.e., the numbered streets) that lead into the Plan Area. In the latter case, the wind flow divides, with some wind flowing along the northwest/southeast street and some wind flowing along Market Street.³²³

Wind flows along each of the northwest/southeast (i.e., numbered) streets of the SoMa area are also directly generated by the northwest winds, which align with the grid south of Market Street and which can be brought to ground level and channeled into the numbered streets. Although misaligned with the street grid north of Market Street and diminished by passing through that area, the northwest winds are important in the Plan Area because they strike the faces of buildings on streets parallel to Market Street head-on and are brought down to the pedestrian level by those buildings.

Southwest winds also align with the Plan Area street grid, strike the faces of numbered-street buildings head-on, are directed down to the pedestrian level, and are channeled into southwest/northeast streets such as Mission, Howard, Folsom, Harrison, Bryant, and Townsend Streets, all of which are parallel to Market Street. Unlike the northwest wind, southwest winds approach the Plan Area relatively unimpeded over similar parallel blocks of low-rise buildings (mostly two- to four-stories, and no more than about 50 feet in height).

While the relatively frequent west and west-northwest winds are not aligned with the SoMa grid and their speeds are therefore reduced, they can be brought down to the pedestrian level by encountering taller buildings or simply by passing over vacant parcels of land. By both of these mechanisms, these winds directly and substantially contribute to winds at the pedestrian level in the Plan Area.

IV.G.3 Regulatory Framework

Planning Code Section 148, Reduction of Ground-Level Wind Currents in C-3 Districts, requires buildings to be shaped so as not to cause ground-level wind currents to exceed, more than 10 percent of the time, 11 mph in substantial pedestrian use areas, and 7 mph in public seating areas. The *Planning Code* comfort criteria are defined in terms of equivalent wind speed, which is an average wind speed (mean velocity), adjusted to include the level of gustiness and turbulence. Under procedures developed to implement Section 148, equivalent wind speed is defined as the mean wind velocity, multiplied by the quantity (one plus three times the turbulence intensity) divided by 1.45. This calculation magnifies the reported wind speed when turbulence intensity is greater than 15 percent. Throughout this analysis, unless otherwise stated, use of the term “wind speeds” in connection with the wind-tunnel tests refers to equivalent wind speeds that are exceeded 10 percent of the time. When a project would result in exceedances of a comfort criterion, an exception may be granted, pursuant to *Planning Code* Section 309, if the building or addition cannot be designed to meet the criteria.

³²³ San Francisco convention, followed in this EIR, is to describe South of Market streets that are parallel to Market Street as east/west streets and streets perpendicular to Market Street as north/south streets. However, in discussing wind directions, true compass directions are used for clarity.

Section 148 also establishes a hazard criterion, which is an equivalent wind speed of 26 mph as averaged for a single full hour of the year.³²⁴ This wind speed is equivalent to a one-minute average wind speed of 36 mph. Under Section 148, new buildings and additions may not cause wind speeds that meet or exceed this hazard criterion and no exception may be granted for buildings that result in winds that exceed the hazard criterion. In the Plan Area, Section 148 criteria apply only to a portion of the block bounded by Second and Third Streets and Folsom and Harrison Streets, which is in a C-3-O Use District.

Other sections of the *Planning Code* apply the same conditions of Section 148 to other areas of the city, including the Van Ness Avenue corridor (Section 243(c)(10)) and Rincon Hill (Sections 249.1(b)(1)(A) and 825(d)). Furthermore, Section 148 conditions are used by the Planning Department to evaluate projects under CEQA.

IV.G.4 Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR, implementation of the proposed Plan would have a significant effect with respect to the pedestrian wind environment if it would:

- Alter wind in a manner that substantially affects public areas.

For the purposes of CEQA review, the Planning Department has determined that an exceedance of the *Planning Code's* wind hazard criterion is the standard for determining whether pedestrian winds would “substantially affect public areas” and therefore significant.

Approach to Analysis

The Plan is a regulatory program that would include *Planning Code* and Zoning Map and text amendments and new planning policies to further the Plan's primary objectives of accommodating additional jobs and housing in the Plan Area. Adoption of the Plan and its programmatic components would not directly alter the existing wind environment; over the long-term, however, implementation of the Plan could indirectly affect winds as a result of subsequent development projects that would be permitted under the Plan which could be taller than those currently permitted that may alter winds and cause hazardous conditions or otherwise substantially affect public areas.

Section 148 applies to approval of individual development projects within the C-3 use district, but not to area-wide plans such as the Central SoMa Plan. Because wind conditions in the Plan Area would be affected by the combination of building forms resulting from existing and future buildings, a program-level study is considered an appropriate methodology for evaluation of area-wide wind impacts.

³²⁴ The wind hazard criterion is derived from the 26 mph hourly average wind speed that would generate a 3-second gust of wind at 20 meters per second, a commonly used guideline for wind safety. Because the original Federal Building wind data was collected at one-minute averages, the 26 mph hourly average is converted to a one-minute average of 36 mph, which is used to determine compliance with the 26 mph one-hour hazard criterion in the *Planning Code*. (Arens, E. et al., “Developing the San Francisco Wind Ordinance and its Guidelines for Compliance,” Building and Environment, Vol. 24, No. 4, p. 297–303, 1989.)

The wind analysis evaluates wind effects associated with subsequent development that is anticipated to occur in the Plan Area over time, as compared to existing conditions. This analysis is based on wind tunnel testing of building models that reflect potential development that could reasonably be anticipated to occur under the Plan.

This analysis may also inform how winds under Plan conditions may affect certain public rights-of-ways where future open space improvements may be implemented.

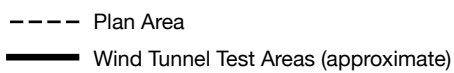
Proposed Street Network Changes and Open Space Improvements

The proposed street network changes would be implemented entirely within existing public rights-of-way and would not involve construction of any buildings or other structures of a height or bulk great enough to result in adverse effects related to wind. As disclosed in the Initial Study (see Appendix B), the proposed street network changes were found not to affect wind conditions in a substantial manner. Because wind impacts related to street network changes would be less than significant, no further analysis is required. Likewise, the proposed open space improvements, while not currently designed or programmed in detail, would not include construction of buildings or other structures of a height or bulk great enough to result in adverse effects related to wind (generally above 80 feet). Therefore, the proposed open space improvements were found not to affect wind conditions in a substantial manner and, therefore, no further analysis is required.

Methodology

As discussed above, a significant wind impact would result if individual buildings that could be developed under the Plan would have exposure, orientation, or massing that would cause new exceedances (violations) of the hazard criterion of 26 mph for a single hour of the year as established in *Planning Code* Section 148. For CEQA purposes, the Planning Department considers an exceedance of the wind hazard criterion to substantially affect the use of publically accessible open spaces, and result in a significant impact. Exceedances of the wind comfort criterion are presented for informational purposes, and to demonstrate compliance with other *Planning Code* requirements.

For portions of the Plan Area where the greatest changes in building height limits would occur under the Plan, a wind-tunnel test was performed in February 2014 and updated in December 2015 to generally define the pedestrian wind environment that currently exists, and would exist with Plan implementation, on sidewalks and open spaces around the Plan Area. Wind-tunnel testing and analysis was conducted for two discrete zones (study areas) within the Plan Area that are proposed to undergo the most extensive increases in height limits—the approximately four-block area between Bryant and Townsend Streets from the west side of Fifth Street to the east side of Fourth Street, and Harrison Street between Second and Fourth Streets (just north of the I-80 freeway) (see **Figure IV.G-1, Wind Tunnel Test Areas**). One-inch-to-50-foot scale models of Study Area and vicinity buildings were constructed in order to simulate the existing and with-Plan wind conditions.



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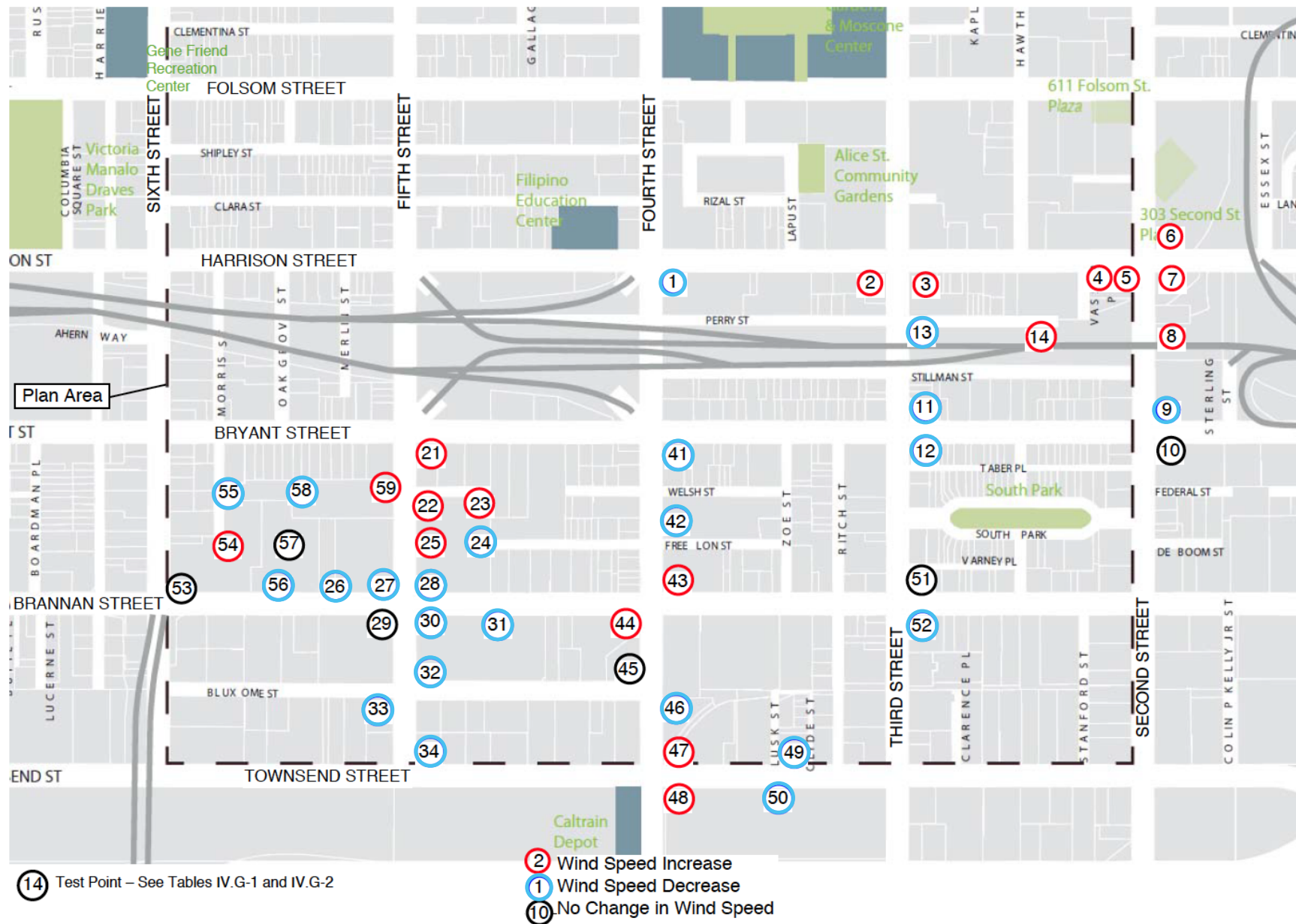
Figure IV.G-1
Wind Tunnel Test Areas

Wind speeds were measured for the existing scenario and the with-Plan scenario. The with-Plan scenario would, in general, permit increased building height limits, from 65 to 85 feet along much of Fourth, Harrison, and Bryant Streets. The Plan would also allow for eight towers of between 200 feet and 400 feet in height on certain sites south of Bryant Street, including potentially three towers of between about 220 feet and 270 feet in height on the site of the existing San Francisco Flower Mart at Sixth and Brannan Streets), and for five 160-foot buildings and about half a dozen buildings of 130 feet in height in much of the area south of Harrison Street, as well as a 115-foot-tall building on the northwest corner of Brannan and Ritch Streets, between Third and Fourth Streets.

The Plan, as analyzed in this EIR, also allows for four towers of 200 feet, 240 feet, 350 feet, and 350 feet in height on the south side of Harrison Street between Second and Fourth Streets, a tower of 200 feet on the northeast corner of Third and Harrison Streets, and 180 feet at the northwest corner of Fourth and Folsom Streets, as well as a tower on the southeast corner of Fifth and Howard Streets, with a maximum potential height of 300 feet. To allow for a conservative but realistic model of Plan conditions, development assumptions formulated by the Planning Department are reflected in the wind model by extruding parcel lines to a base height of 85 feet. For parcels with proposed allowable heights taller than 85 feet, building setbacks were built into the model along with reasonable assumptions for limited tower floor plates and tower siting on larger parcels. These assumptions generally reflect the policy direction in Goal VIII of the Plan to “ensure that the overall development pattern is complementary to the skyline” (Objective 8.2) and “Limit the distribution and bulk of new towers and focus them at important nodes” (Policy 8.3.4). However, the assumptions used in the wind-tunnel testing do not take into account the specific controls in Goal VIII that would modulate building setbacks further than the assumptions used in this analysis. Therefore, the analysis can be considered to be conservative (i.e., worst case).

Pedestrian-level wind speeds were measured at 47 locations selected within the study areas to quantify resulting pedestrian-level winds on sidewalks and in other public spaces where implementation of the Plan would be expected to have the most effect on winds (see **Figure IV.G-2, Wind Tunnel Test Points and Wind Speed Changes with Plan Implementation**). Locations for wind speed sensors, or test points, were selected to indicate how the general flow of winds would be directed around the new taller buildings. The locations of interest for the *Planning Code* are those public “areas of substantial pedestrian use,” where the pedestrian comfort criterion applies. For this reason, test points were concentrated along sidewalks at intersections, at locations where taller buildings could be built pursuant to the Plan’s proposed increases in height limits (shown in Figure IV.G-1), and near proposed open space improvements (depicted in Figure IV.G-2). All test points were also compared against the 11 mph pedestrian comfort criterion.

It is noted that the number and location of test points, while suitable for a Plan-level analysis that lacks details of specific project designs, would not typically be sufficient for wind-tunnel testing of an individual development project, for which a comparable number of test points would be used but for which the points would be concentrated around the project site itself, rather than spread over an area of several blocks, as was the case for this area-wide test. Moreover, the pedestrian-level wind environment around a specific building is highly dependent on the building design (e.g., location and size of setbacks, whether a tower is placed atop a podium, the height of the street wall, etc.). As noted in the Approach to Analysis section above, the Plan is a regulatory program and would not result in direct physical changes to existing wind environment. Therefore, this analysis evaluates potential increase in building heights but does not consider any building designs. Accordingly, it is



SOURCE: ESA

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Figure IV.G-2
Wind Tunnel Test Points and Wind Speed Changes with Plan Implementation

anticipated that most individual subsequent development projects that are proposed at heights greater than 100 feet would undergo project-specific wind-tunnel testing, consistent with Planning Department protocols. Such project-specific analysis would be based on actual building designs and would entail more test points near a particular project site than were employed in this Plan-level analysis.

In accordance with the protocol for wind tunnel testing under Section 148 of the *Planning Code*, configurations were tested for each of four prevailing wind directions: northwest, west-northwest, west, and southwest. These winds are the most common in the city and most important for sites south of Market Street, and are therefore most representative for evaluation of possible wind effects from subsequent development under the Plan.

For the remainder of the Plan Area, where height limits would remain the same as under existing conditions or be increased to a much lesser degree than the areas tested in the wind tunnel (and, in a few instances, would decrease), wind conditions are addressed qualitatively.

Impact Evaluation

Impact WI-1: Subsequent future development anticipated under the Plan could alter wind in a manner that substantially affects public areas. (Significant and Unavoidable)

The results of the wind-tunnel test, performed to generally define the pedestrian wind environment that currently exists, and would exist with Plan implementation, on sidewalks and open spaces around the Plan Area, are discussed below. A qualitative discussion of the remainder of the Plan Area is also provided below.

Table IV.G-1, Pedestrian-Comfort Analysis, presents the Pedestrian-Comfort Analysis results, namely the wind speeds exceeded 10 percent of the time and the percentage of time that the comfort criterion is exceeded for each test location and test scenario. **Table IV.G-2, Hazard Analysis**, presents the Wind Hazard Analysis results, the equivalent wind speed, and the number of hours per year of exceedance of the hazard criterion for each test location and test scenario. Figure IV.G-2 presents the test point locations and indicates whether wind speeds would increase or decrease with Plan implementation. **Figure IV.G-3, Greatest Increases in Wind Speed**, p. IV.G-14, shows locations of exceedances of the *Planning Code* wind hazard criterion under with-Plan conditions.

Existing Conditions

The existing average of wind speeds exceeded 10 percent of the time for all 47 test points is 12.5 mph. Wind speeds in these pedestrian areas range from 4 mph to 20 mph. The windiest areas are generally along Fourth and Fifth Streets south of Bryant Street.

Existing Comfort Criterion Conditions

Wind speeds at 29 of the 47 locations (62 percent) currently exceed the *Planning Code's* 11 mph pedestrian-comfort criterion. The highest wind speed in the vicinity (20 mph) was measured at Fourth Street and Freelon Street (between Bryant and Brannan Streets) (test point #42).

TABLE IV.G-1 PEDESTRIAN-COMFORT ANALYSIS

Test Location Number	Wind Comfort Criterion Speed (mph)	Existing Conditions			Existing plus Plan Conditions			
		Equivalent Wind Speed Exceeded 10% of Time (mph)	% Time Wind Speed Exceeds Criterion	Source	Equivalent Wind Speed Exceeded 10% of Time (mph)	% Time Wind Speed Exceeds Criterion	Speed Change Relative to Existing (mph)	Source
1	11	15	27	e	10	8	-5	—
2	11	6	0		10	5	3	
3	11	7	1		10	5	3	
4	11	9	4		13	16	4	p
5	11	7	3		17	32	10	p
6	11	6	0		9	2	3	
7	11	7	2		14	22	7	p
8	11	9	2		12	12	3	p
9	11	13	17	e	10	8	-2	—
10	11	8	2		8	2	0	
11	11	16	29	e	11	12	-4	—
12	11	13	18	e	12	14	-1	e
13	11	13	17	e	10	8	-4	—
14	11	6	1		13	14	7	p
21	11	11	9		12	14	1	p
22	11	18	37	e	24	48	6	e
23	11	4	0		14	24	10	p
24	11	15	27	e	5	0	-10	—
25	11	16	27	e	20	39	4	e
26	11	15	28	e	14	24	-2	e
27	11	16	29	e	7	1	-8	—
28	11	18	38	e	13	19	-5	e
29	11	18	34	e	17	35	0	e
30	11	14	22	e	13	17	-2	e
31	11	11	11		10	6	-1	
32	11	15	25	e	13	17	-2	e
33	11	11	10		7	0	-4	
34	11	12	13	e	11	11	-1	—
41	11	19	38	e	16	30	-2	e
42	11	20	42	e	13	19	-7	e
43	11	13	16	e	20	42	7	e
44	11	14	20	e	16	29	3	e
45	11	10	5		10	5	0	
46	11	16	29	e	10	5	-7	—
47	11	8	2		16	30	8	p
48	11	9	3		12	13	4	p
49	11	9	4		8	3	-1	
50	11	15	25	e	10	7	-5	—
51	11	14	22	e	14	23	0	e
52	11	11	11		11	9	-1	
53	11	19	37	e	19	41	1	e
54	11	12	12	e	13	18	1	e
55	11	15	18	e	12	13	-3	e
56	11	15	23	e	14	21	-1	e
57	11	12	12	e	12	12	0	e
58	11	15	23	e	14	24	-1	e
59	11	14	24	e	23	47	9	e
<i>Ave. of 10%</i>	<i>Percent:</i>	<i>12.5 mph</i>	<i>17%</i>		<i>12.9 mph</i>	<i>17%</i>	<i>0.3 mph</i>	
Total Exceedances:		Total:	29			Total:	29	
<i>Subtotals by type:</i>		<i>Existing</i>	29	<i>E</i>	<i>Existing:</i>		20	<i>e</i>
					<i>New, due to Plan:</i>		9	<i>p</i>
					<i>New location:</i>		0	<i>n</i>
					<i>Elim. by Plan:</i>		9	—

TABLE IV.G-2 HAZARD ANALYSIS

Test Location Number	Wind Hazard Criterion Speed, (mph)	Existing Conditions			Existing plus Plan Conditions			
		1-hour/year Equivalent Wind Speed, (mph)	Wind Hazard Criterion Exceeded (hrs./yr.)r	Source	1-hour/year Equivalent Wind Speed, (mph)	Wind Hazard Criterion Exceeded (hrs./yr.)r	Hours Change Relative to Existing	Source
1	36	26			18			
2	36	15			17			
3	36	18			18			
4	36	29			25			
5	36	28			29			
6	36	14			16			
7	36	26			27			
8	36	19			29			
9	36	25			25			
10	36	19			23			
11	36	33			22			
12	36	24			24			
13	36	25			23			
14	36	22			33			
21	36	24			22			
22	36	36			44	47	47	p
23	36	17			29			
24	36	27			11			
25	36	32			42	19	19	p
26	36	26			32			
27	36	28			16			
28	36	32			23			
29	36	36	1	e	30		-1	—
30	36	27			22			
31	36	21			18			
32	36	30			25			
33	36	19			17			
34	36	27			22			
41	36	32			32			
42	36	37	1	e	28		-1	—
43	36	24			37	2	2	p
44	36	23			29			
45	36	18			18			
46	36	31			17			
47	36	17			30			
48	36	17			23			
49	36	21			19			
50	36	26			19			
51	36	33			26			
52	36	23			20			
53	36	37	2	e	37	2	0	e
54	36	27			29			
55	36	32			24			
56	36	27			24			
57	36	28			26			
58	36	28			29			
59	36	32			38	15	15	p
<i>Avg. 1 hr</i>	<i>Total Hours:</i>	<i>26 mph</i>	<i>4 hrs.</i>		<i>25 mph</i>	<i>85 hrs.</i>	<i>81 hrs.</i>	
Total Exceedances:		Total:	3			Total:	5	
<i>Subtotals by type:</i>		<i>Existing:</i>	3	<i>e</i>		<i>Existing:</i>	1	<i>e</i>
						<i>New or incr. time:</i>	4	<i>p</i>
						<i>New location:</i>	0	<i>n</i>
						<i>Elim. by Plan:</i>	2	—

Existing Hazard Conditions

The average of wind speeds exceeded one hour per year at the 47 test points is 26 mph under existing conditions. The *Planning Code's* wind hazard criterion of 26 mph is exceeded at three of the existing setting test locations.³²⁵ One existing wind hazard condition exists at the same location as the highest measured wind speeds—Fourth and Freelon Streets (#42; one hour per year), while the other two locations are at the southwest corner of Fifth and Brannan Streets (#29; one hour per year) and at the northeast corner of Sixth and Brannan Streets (#53; two hours per year). The total duration of the existing exceedances was measured to be four hours per year.

With-Plan Scenario

Given that landscape features in open areas and building articulation beyond basic required setbacks were not modeled in detail, test results are likely to indicate higher wind speeds than may actually occur. With the addition of subsequent Plan development, as described above, the average of the wind speeds exceeded 10 percent of the time for the 47 test point locations would increase by 0.4 mph, from 12.5 mph to 12.9 mph. Wind speeds in pedestrian areas would range from 5 mph to 24 mph. Wind speeds would continue to generally be greatest on Fourth and Fifth Streets south of Bryant Street.

With-Plan Comfort Criterion Conditions

Implementation of the Plan would alter wind speeds conditions at individual test points but would not result in an overall substantial change in wind speed in the study areas; that is, wind speeds would increase at some locations and decrease at other locations, but the overall wind environment, based on the average of wind speeds at all test points, would remain similar to that under existing conditions. The with-Plan scenario would create nine new pedestrian-comfort criterion exceedances and eliminate the same number of pedestrian-comfort criterion exceedances, resulting in 29 of the 47 locations with wind speeds in excess of the *Planning Code's* 11 mph pedestrian-comfort criterion, the same number as under existing conditions. Two of four existing exceedances along Third Street would be eliminated (#13 and 11) along with one on Second Street (#9), two on Fourth Street (#1 and 46), two on Fifth Street (#27 and 34), one on Townsend Street (#50), and one at the western end of Freelon Street, between Bryant and Brannan and Fourth and Fifth Streets—the location of the potential new park (#24). However, another test location just to the north within this potential park space (#23) would newly exceed the 11 mph pedestrian criterion (and the 7 mph seating criterion). This test point is at the northeast corner of a massing model representing a potential project at 598 Brannan Street. It is noted that this potential project would undergo project-specific wind-tunnel testing prior to being considered for approval, and that design articulation could result in reduced ground-level wind speeds, compared to those reported here for the testing of massing-only models.

³²⁵ As stated in footnote 324, the wind hazard criterion is derived from the 26 mph hourly average wind speed that would generate a 3-second gust of wind at 20 meters per second, a commonly used guideline for wind safety. Because the original Federal Building wind data was collected at one-minute averages, the 26 mph hourly average is converted to a one-minute average of 36 mph, which is used to determine compliance with the 26 mph one-hour hazard criterion.

Two other new exceedances would occur at the intersection of Fourth and Townsend Streets (#47 and 48), near the southwestern corner of a potential 400-foot-tall building, and five new exceedances would occur near, and south of, the intersection of Second and Harrison Streets (#4, 5, 7, 8, and 14), in proximity to a site at 400 Second Street that would have height limits permitting three towers at heights of 200 feet, 350 feet, and 350 feet. The final new pedestrian exceedance would occur at Fifth and Bryant Streets (#21), although the actual increase in wind speed would be only 1 mph, from 11 mph to 12 mph, and thus would not likely be perceptible by persons at that location.³²⁶

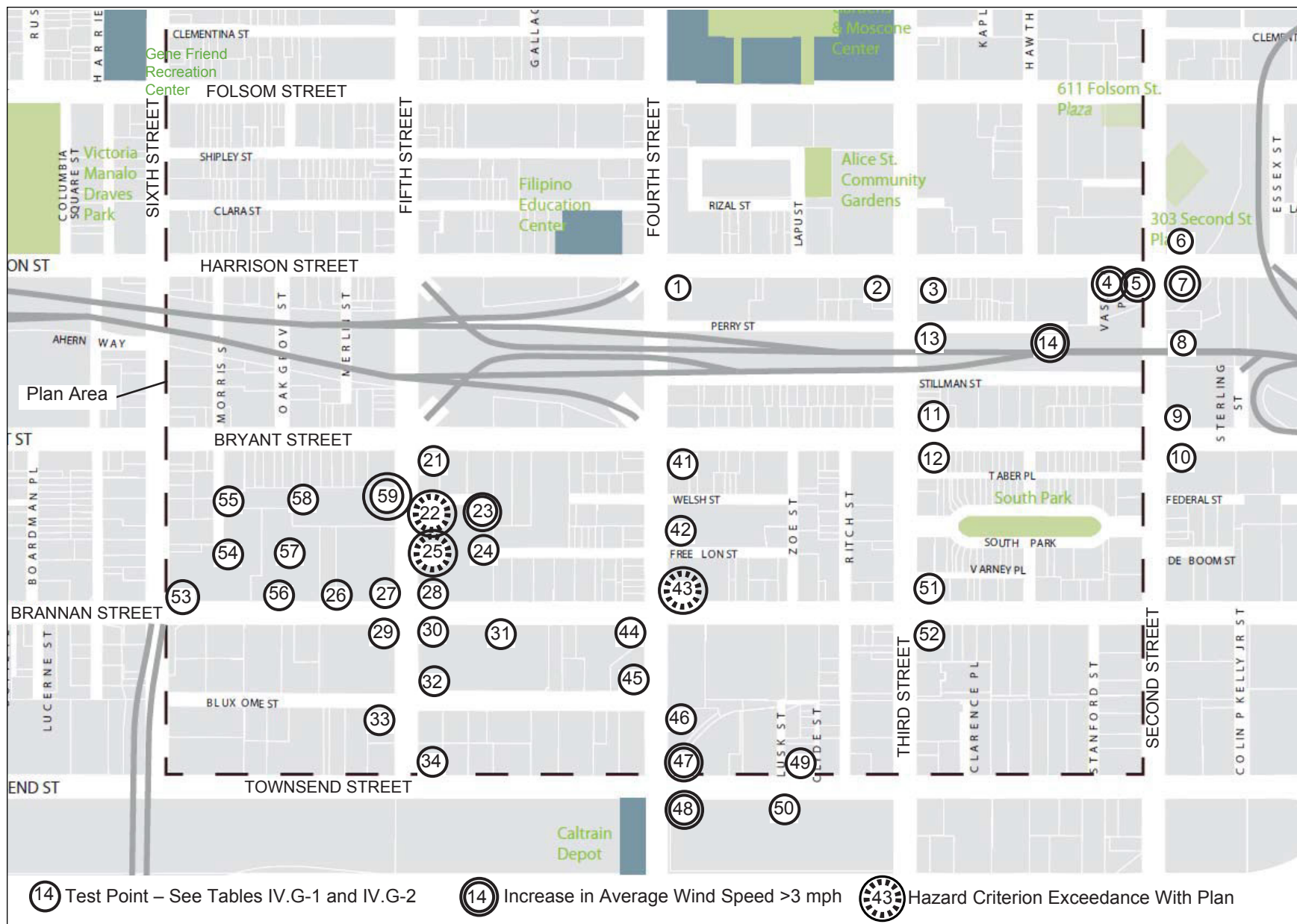
As indicated on **Figure IV.G-3, Greatest Increases in Wind Speed**, and Table IV.G-1, the relatively larger (greater than 3 mph) increases in wind speed would occur near, and south of, the intersection of Second and Harrison Streets, along Fourth Street, and on the northwest corner of the potential new mid-block public open space noted above, on the block bounded by Bryant, Fourth, Brannan, and Fifth Streets. The greatest increases in wind speeds—10 mph—would occur at Second and Harrison Streets (#5) and at the northwest corner of the potential new park (#23). Conversely, the greatest decrease in wind speed—also 10 mph—would occur at the southwest corner of the potential new park (#24).

Other notable increases in wind speeds would occur on Fifth Street south of Bryant Street (#59; 9 mph); at Fourth and Townsend Streets (#47; 8 mph); another location at Second and Harrison Streets (#7; 7 mph); a location south of the same three-tower project at 400 Second Street (#14; 7 mph); Fourth and Brannan Streets (#43; 7 mph); and on Fifth Street at Welsh Street (#22; 6 mph). Notable decreases in wind speed would occur at Fifth and Brannan Streets (#27; -8 mph); Fourth and Freelon Streets (#42; -7 mph); Fourth and Bluxome Streets (#46; -7 mph); Fourth and Harrison Streets (#1; -5 mph); and Townsend Street between Third and Fourth Streets (#50; -5 mph).

Results indicate development of relatively taller buildings could shift the locations of where higher pedestrian-level winds would occur, but would not necessarily result in overall increases in ground-level wind speeds: several pairs of adjacent test points (#23 and #24; #42 and #43; #46 and #47) reveal generally comparable increases and decreases at different corners of the same potential development site. More detailed project-specific wind-tunnel testing would be necessary to determine the full extent of such subsequent development projects' effects.

Overall, the average of wind speeds exceeded 10 percent of the time would increase from 12.5 mph to 12.9 mph, a change that would not result in a perceptible difference at any given point. Therefore, while localized conditions might improve or worsen, there would not be a substantial change in overall pedestrian-level wind speeds in the study areas.

³²⁶ All of the other new pedestrian comfort exceedances would also result in increases in equivalent wind speed of more than 3 mph.



SOURCE: ESA

Case No. 2011.1356E: Central SoMa Plan
Figure IV.G-3
 Greatest Increases in Wind Speed

With-Plan Hazard Conditions

With regard to wind hazard conditions, the average of the wind speeds exceeded one hour per year would decrease by 1 mph, to 25 mph, which represents an incremental improvement from existing conditions. However, both the number of hazard exceedances and the hours per year during which the hazard criterion would be exceeded would increase substantially. Two new hazard exceedances would occur on the east side of Fifth Street between Bryant and Brannan Streets (#22 and #25); winds at these locations would exceed the hazard criterion by 47 hours and 19 hours per year, respectively. A third new hazard exceedance would occur on the west side of Fifth Street (#59, 15 hours per year). These three points are immediately downwind of the Flower Mart site, where a project is proposed that would develop three buildings at heights of 220 feet to 270 feet. As with other potential development included in the wind-tunnel testing, the Flower Mart buildings were tested as basic rectilinear massing models, without articulation that would likely be part of any actual project-specific design. Like all subsequent development projects that propose high-rise buildings, this project would be subject to more detailed project-specific wind-tunnel testing, which would be based on detailed, articulated project designs rather than the simple massing models tested for this Plan analysis.

Elsewhere, the existing exceedance of the wind hazard criterion at the corner of Fourth and Freelon Streets (#42) would be eliminated and shifted southward to a new exceedance at the corner of Fourth and Brannan Streets (#43). While this does not represent a substantial change in wind hazard conditions, it should be noted that the eliminated exceedance (#42) occurs for one hour per year while the new exceedance (#43) would occur for a duration of two hours per year. The new exceedance of the hazard criterion would occur at the southwestern corner of a 200-foot-tall massing model of a potential tower that could be developed under the Plan's proposed height limits. However, as was stated previously with respect to comfort criteria exceedances, any subsequent development project greater than 100 feet in height would undergo project-specific wind-tunnel testing prior to being considered for approval, consistent with Planning Department protocols. Finally, an existing one-hour per year exceedance of the hazard criterion at the southwest corner of Fifth and Brannan Streets (#29) would be eliminated, while an existing hazard exceedance at the northeast corner of Sixth and Brannan Streets (#53; two hours per year) would remain unchanged. The net effect at all 47 test points would be an increase of 77 hours per year in the duration of the wind hazard condition in the Plan Area (from 4 hours under existing conditions to 81 hours under Plan conditions), a significant impact. In general, it can be expected that project-specific building articulation and/or other changes in project design could be employed to reduce ground-level wind speeds, compared to those reported here for the testing of massing-only model. **Mitigation Measure M-WI-1, Wind Hazard Criterion for the Plan Area**, has been identified to reduce this significant impact.

Other Portions of the Plan Area

Other parts of the Plan Area are generally less windy than the Study areas tested. One exception is the northeast corner of Fifth and Howard Streets, location of the Intercontinental Hotel. This 340-foot-tall tower is the westernmost tall building in the SoMa area, and as such, it intercepts prevailing west, west-northwest, and northwest winds that are uninterrupted by other high-rise development. As a result, winds that hit the tower are re-directed downward to street level and around the southwest corner of the building as they seek a path around the structure. Accordingly, and as was predicted by the project wind-tunnel test, relatively high wind speeds occur at the corner and along the Howard Street frontage of the building.

Outside the areas tested in the wind-tunnel test, height limits in the Plan Area would remain mostly as under existing conditions. The three locations where height limits would increase—along the north side of Folsom Street between Fourth and Fifth Streets and at the northwest corner of Fourth and Harrison Streets and the northeast corner of Fifth and Harrison Streets—would be subject under the Plan to limitations on lot mergers. This would effectively limit the height that could be achieved at these locations because it is typically the case that a relatively taller building requires a larger development site than a shorter building, given that, once a building exceeds a height of 70 feet, elevator(s) and other vertical improvements (utilities, etc.) are required that are not necessary for a shorter structure, thereby reducing the usable floor area of the building by a certain amount. At the southeast corner of Fifth and Howard Streets, where a height of 300 feet is proposed, pedestrian-level wind speeds could be adversely affected.

Accordingly, the Plan would result in minimal, if any, potential for future increases in pedestrian-level wind speeds in the portions of the Plan Area not tested in the wind tunnel where heights would increase under the Plan. Construction to existing height limits of 85 feet could occur; however, pedestrian-level increases in winds would be minimal because buildings lower than about 100 feet typically do not result in substantial increases in ground-level winds that would exceed the hazard criterion.

Conclusion

As noted above, for program-level wind testing, wind tunnel models did not include detailed landscape features in open areas or specific building articulation beyond basic setbacks. Because these details have not been developed and cannot be known at this time, it is not possible to assess the effects that future buildings may have on winds in the Plan Area and vicinity. However, the program-level wind testing of the massing model indicates that the Plan could result in 4 new exceedances of the 26 mph hazard criterion, resulting in a *significant* impact. Building designs can be developed (podium setbacks, awnings, terraces, and other articulations) that avoid tall flat surfaces square to prevailing winds. These structural features would be expected to reduce ground-level wind speeds and turbulence. In addition, the presence of large street trees and, potentially, street furniture could further reduce general wind speeds and would improve wind conditions in the Plan Area. Without these features included in the wind tunnel model, the test results reported are conservative and likely to indicate higher wind speeds than would actually occur. In conclusion, the landscaping features and building articulation would be expected to eliminate the five hazard criterion exceedances that were identified in the Plan condition.

Outside the areas of greatest potential change that were evaluated in the wind-tunnel, the potential for adverse changes to pedestrian-level winds would be minimal due to the existing relatively low height limits in the western portion of the Plan Area that would remain relatively unchanged.

Mitigation Measures

Mitigation Measure M-WI-1: Wind Hazard Criterion for the Plan Area. In portions of the Central SoMa Plan area outside the C-3 Use Districts, projects proposed at a roof height greater than 85 feet shall be evaluated by a qualified wind expert as to their potential to result in a new wind hazard exceedance or aggravate an existing pedestrian-level wind hazard exceedance (defined as the one-hour wind hazard criterion of 26 miles per hour equivalent wind speed). If the qualified expert determines that wind-tunnel testing is required due to the potential for a new or worsened wind

hazard exceedance, the following requirements for reduction of ground-level wind speeds in areas of substantial pedestrian use shall apply:

- New buildings and additions to existing buildings shall be shaped (e.g., include setbacks, or other building design techniques), or other wind baffling measures shall be implemented, so that the development would result in the following with respect to the one-hour wind hazard criterion of 26 miles per hour equivalent wind speed:
 - No net increase, compared to existing conditions, in the overall number of hours during which the wind hazard criterion is exceeded (the number of exceedance locations may change, allowing for both new exceedances and elimination of existing exceedances, as long as there is no net increase in the number of exceedance locations), based on wind-tunnel testing of a representative number of locations proximate to the project site; OR
 - Any increase in the overall number of hours during which the wind hazard criterion is exceeded shall be evaluated in the context of the overall wind effects of anticipated development that is in accordance with the Plan. Such an evaluation shall be undertaken if the project contribution to the wind hazard exceedance at one or more locations relatively distant from the individual project site is minimal and if anticipated future Plan area development would substantively affect the wind conditions at those locations. The project and foreseeable development shall ensure that there is no increase in the overall number of hours during which the wind hazard criterion is exceeded.
 - New buildings and additions to existing buildings that cannot meet the one-hour wind hazard criterion of 26 miles per hour equivalent wind speed performance standard of this measure based on the above analyses, shall minimize to the degree feasible the overall number of hours during which the wind hazard criterion is exceeded.

Significance after Mitigation: Implementation of Mitigation Measure M-WI-1 would reduce the potential for a net increase in wind hazard exceedances and the hours of wind hazard exceedances. However, it cannot be stated with certainty that each subsequent development project would be able to meet the one-hour wind hazard criterion of 26 miles per hour equivalent wind speed performance standard without substantial modifications to the project's design and program such that the project would not be able to be developed to allowable building heights proposed by the Plan. Therefore, this impact would remain *significant and unavoidable*. This determination does not preclude the finding that specific development projects would result in less than significant wind impacts depending on the design and site conditions.

IV.G.5 Cumulative Impacts

Impact C-WI-1: Development under the Plan, combined with past, present, and reasonably foreseeable future projects, would not result in cumulative significant impacts related to wind. (Less than Significant)

Based on an evaluation of proposed, approved, and under-construction buildings within four blocks upwind and two blocks crosswind of the Plan Area, it was determined that no specific buildings that could be developed under the cumulative scenario would combine with the wind effects of the Plan to result in a substantial cumulative impact related to wind, beyond those identified for the Plan, above. Cumulative projects 100 feet and taller near the Plan Area could result in localized wind effects that could be adverse. However, with the exception of the recently approved 5M project along Fifth Street between Mission and

Howard Streets, none of these cumulative projects is located near areas where the Plan would result in major increases in height limits. Therefore, minor changes in wind patterns shown to result from development under the Plan, as described above, are not anticipated to interact with localized wind effects from cumulative development. Therefore, no separate cumulative wind-tunnel test was performed.

A review of wind studies for the tallest recently approved projects near the Plan Area—the 706 Mission Street project (currently under construction), the recently built San Francisco Museum of Modern Art (SFMOMA) expansion project, the 222 Second Street project (also newly built), and the 5M project approved in late 2015, reveals that these cumulative projects would incrementally alter (increase or decrease) localized wind speeds at individual locations but would result in either similar wind conditions (i.e. no substantial changes) or slightly improved wind conditions. These tests are summarized below.

The 706 Mission Street project will include a new structure with a 550-foot-tall tower adjacent to a rehabilitation of the existing Aronson Building on the northwest corner of Mission and Third Streets and relocation to the project site of the Mexican Museum. The wind study for this project concluded that the addition of the project in the existing and cumulative settings would improve wind hazard conditions, reducing the number of wind hazard exceedances from four under existing conditions to three with the project, and reducing the number of hours per year during which the hazard criterion is exceeded from 127 to 37. Under cumulative conditions, the number of hours of exceedance was further reduced to 26.³²⁷ The SFMOMA Expansion project developed a 220-foot-tall structure south of Minna Street in the middle of the block between Third and Second Streets, adjacent to the existing SFMOMA. The project wind study concluded that the addition of the project in the existing setting would not significantly alter wind conditions (pedestrian or hazard) and would slightly improve wind conditions (pedestrian comfort and hazard) when added to the cumulative setting, with three of four existing hazard exceedances eliminated.³²⁸ The 222 Second Street project constructed a 350-foot-tall tower at the southwest corner of Second and Howard Streets. That project's wind study concluded that the addition of the project in the existing and cumulative settings would not substantially alter pedestrian wind conditions, with no hazard exceedances reported in any of the test scenarios.³²⁹

The 5M project would demolish surface parking lots and several existing buildings (926 Howard Street, 912 Howard Street, 409–411 Natoma Street, and 190 Fifth Street); retain the existing Chronicle Building at 901 Mission Street, existing buildings at 447–449 Minna Street, 430 Natoma Street/49 Mary Street, and a portion of the building at 110 Fifth Street (Examiner Building); and construct three new towers with occupied building heights ranging from 200 feet to 450 feet. The project includes 821,300 square feet of residential uses (690 units), 807,600 square feet of office uses (including active office uses at or below the ground floor), and 68,700 square feet of other active ground floor uses (a mix of retail establishments, recreational and arts facilities, restaurants, workshops, and educational uses). The wind study for this project concluded that the

³²⁷ City and County of San Francisco, *706 Mission Street – The Mexican Museum and Residential Tower Project Environmental Impact Report (Case No. 2008.1084E) Final EIR*, certified March 21, 2013 with certification upheld by Board of Supervisors, May 7, 2013. Available at: <http://www.sf-planning.org/index.aspx?page=1828>, accessed on August 29, 2016.

³²⁸ City and County of San Francisco, *San Francisco Museum of Modern Art/Fire Station Relocation and Housing Project Environmental Impact Report (Case Nos. 2009.0291E and 2010.0275E)*, Final EIR certified November 10, 2011. Available at: <http://www.sf-planning.org/index.aspx?page=1828>, accessed on August 29, 2016.

³²⁹ City and County of San Francisco, *222 Second Street Office Project Environmental Impact Report (Case No. 2006.1106E)*, Final EIR certified August 12, 2010. Available at: <http://www.sf-planning.org/index.aspx?page=1828>, accessed on August 29, 2016.

addition of the 5M project in the existing setting would result in relatively modest degradation of wind comfort conditions but would improve wind hazard conditions by reducing the number of wind hazard exceedances from three under existing conditions to two with the project, and reducing the number of hours per year during which the hazard criterion is exceeded from 79 to 32.³³⁰ With the exception of the site at Fifth and Howard Streets, discussed above, implementation of the Plan would not change height limits on the parcels surrounding the 5M project site, and there are relatively few other locations with height limits greater than 85 feet in this portion of the Plan Area. Based on the 5M Project results and prevailing wind patterns in the area, the wind study concluded that implementation of the Plan, which would occur generally to the south and east of the 5M Project site, would not be expected to change wind conditions at the 5M Project site as the majority of Plan Area development would be situated downwind, and relatively far removed, from the 5M Project site. Therefore, the potential effects from this project would not combine with development under the Plan to cause a substantial cumulative impact beyond those impacts described above in Impact WI-1. As was stated previously, any subsequent development project greater than 80 feet would be required to be evaluated for wind impacts and projects proposing building heights greater than 100 feet in height would undergo project-specific wind-tunnel testing prior to being considered for approval. In general, it can be expected that project-specific building articulation and/or other changes in project design could be employed to reduce ground-level wind speeds, compared to those reported above for the testing of massing-only model. As described above, there are no cumulative projects (besides those that could be accommodated under the Plan) that could combine with other development outside of the plan area to result in cumulative wind impacts. Therefore, the cumulative impact would be *less than significant*.

Mitigation: None Required.

³³⁰ City and County of San Francisco, *5M Project Environmental Impact Report* (Case No. 2011.0409E), Final EIR certified September 17, 2015 with certification upheld by Board of Supervisors, November 17, 2015. Available at <http://www.sf-planning.org/index.aspx?page=1828>, accessed August 29, 2016.

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IV.H Shadow

IV.H.1 Introduction

This section describes the Central SoMa Plan's potential shadow effects on publicly accessible areas, including public parks, publicly accessible private open spaces, and sidewalks. The Plan's proposed changes to height and bulk districts can be expected to result in taller, more massive buildings within portions of the Plan Area, which would cast longer shadows than the area's current predominantly low-rise and mid-rise buildings. The analysis describes the physical impacts of new shadow, qualitatively assesses the potential shadow impact on the use of affected open spaces, and also discusses *Planning Code* Section 295, which protects certain public open spaces under the jurisdiction of the Recreation and Parks Commission from shadowing by new structures greater than 40 feet tall. (The requirements of Section 295 are fully discussed in Section IV.H.3, Regulatory Framework.)

The Setting identifies the parks and open spaces in and immediately adjacent to the Plan Area; describes their particular features and the types of activities that commonly occur there; and presents an assessment of existing sunlight access and shading on these spaces, taking into account the shadows' duration, the time of day and seasons of the year that shadows presently affect local open spaces. The Impacts and Mitigation section sets forth the criteria used to evaluate the significance of impacts related to new shadow on parks and open spaces and then analyzes how altering permitted height and bulk districts in conjunction with amending the *General Plan's* height maps as part of adopting the Plan could result in a skyline taller than currently allowed, which could increase shadow impacts. This EIR analyzes the change in shadow on area parks and open spaces under Plan conditions and considers how shadows would affect the use of these spaces and whether effects may be detrimental to the uses or activities that occur there.

IV.H.2 Environmental Setting

The only park in the Plan Area under jurisdiction of the San Francisco Recreation and Parks Department is South Park. Nearby parks that could be affected include Victoria Manalo Draves Park, Gene Friend Recreation Center, and Howard-Langton Mini Park. Union Square, Boeddeker Park and Civic Center Plaza are all located well outside the Plan Area to the north or northwest and would not be affected by the Plan's proposed rezoning and are not discussed further.

Also within the Plan Area is Alice Street Community Gardens, an open space area that is not under the jurisdiction of the Recreation and Parks Department. Other publicly accessible spaces in proximity to the Plan Area include Yerba Buena Gardens, Jessie Square, Yerba Buena Lane, Mint Plaza, and a variety of smaller publicly accessible privately owned open spaces that have been developed as accessory spaces in connection with office complexes and commercial buildings in the South of Market (SoMa) area and the Financial District.

Like the SoMa neighborhood in general, the Plan Area has limited public open space. Yerba Buena Gardens, including its Children's Garden and carousel, is the area's largest open space, occupying large portions of the blocks bounded by Mission, Third, Folsom, and Fourth Streets. South Park, in the block bounded by Bryant, Second, Brannan, and Third Streets, is the only Recreation and Park Department property in the Plan Area,

although Victoria Manalo Draves Park and Gene Friend Recreation Center are about a half a block west of the Plan Area's boundary, located in the middle of the block between Columbia Square and Sherman Street. To the northwest of Victoria Manalo Draves Park at Langton and Seventh Streets, is the Howard-Langton Mini Park.

Jessie Square and Yerba Buena Lane are two connected, mostly hardscaped, plazas and linear spaces on the block bounded by Market, Third, Mission, and Fourth Streets. Alice Street Community Gardens provides, as its name implies, community garden plots on the block bounded by Folsom, Third, Harrison, and Fourth Streets. Mint Plaza, the former Jessie Street right-of-way off of Fifth Street between Market and Mission Streets (still publicly owned but privately maintained) is a pedestrian plaza in conjunction with private redevelopment of several adjacent buildings.

There are no privately owned, publicly accessible open spaces ("POPOS") located in the Plan Area. However, several POPOS are located just outside the Plan Area and may be shaded by Plan Area buildings. These POPOS were developed in conjunction with office buildings, many of which were created in accordance with Downtown Plan and *Planning Code* provisions to provide some publicly accessible space as part of private developments. The size, features, and intensity of their use vary. POPOS just outside the Plan Area include a brick plaza at 611 Folsom Street at Second Street, in front of an AT&T facility; elevated plazas at two locations in the Intercontinental Hotel at Fifth and Howard Streets; A 235 Second Street (plaza); 299 Second Street (Marriott Courtyard; two plazas); and 303 Second Street (plaza).

The 2014 update of the *General Plan* Recreation and Open Space Element (ROSE) identifies portions of the Plan Area as in need of new open space. The East SoMa Area Plan identifies Fourth Street between I-80 and Townsend Street and the area bounded by Howard, Fourth, Folsom and Fifth Streets as areas where new open spaces should be acquired and developed. The ROSE and *Better Streets Plan* envision the eventual greening of SoMa streets and alleys to extend ecological function and link neighborhoods to open space.

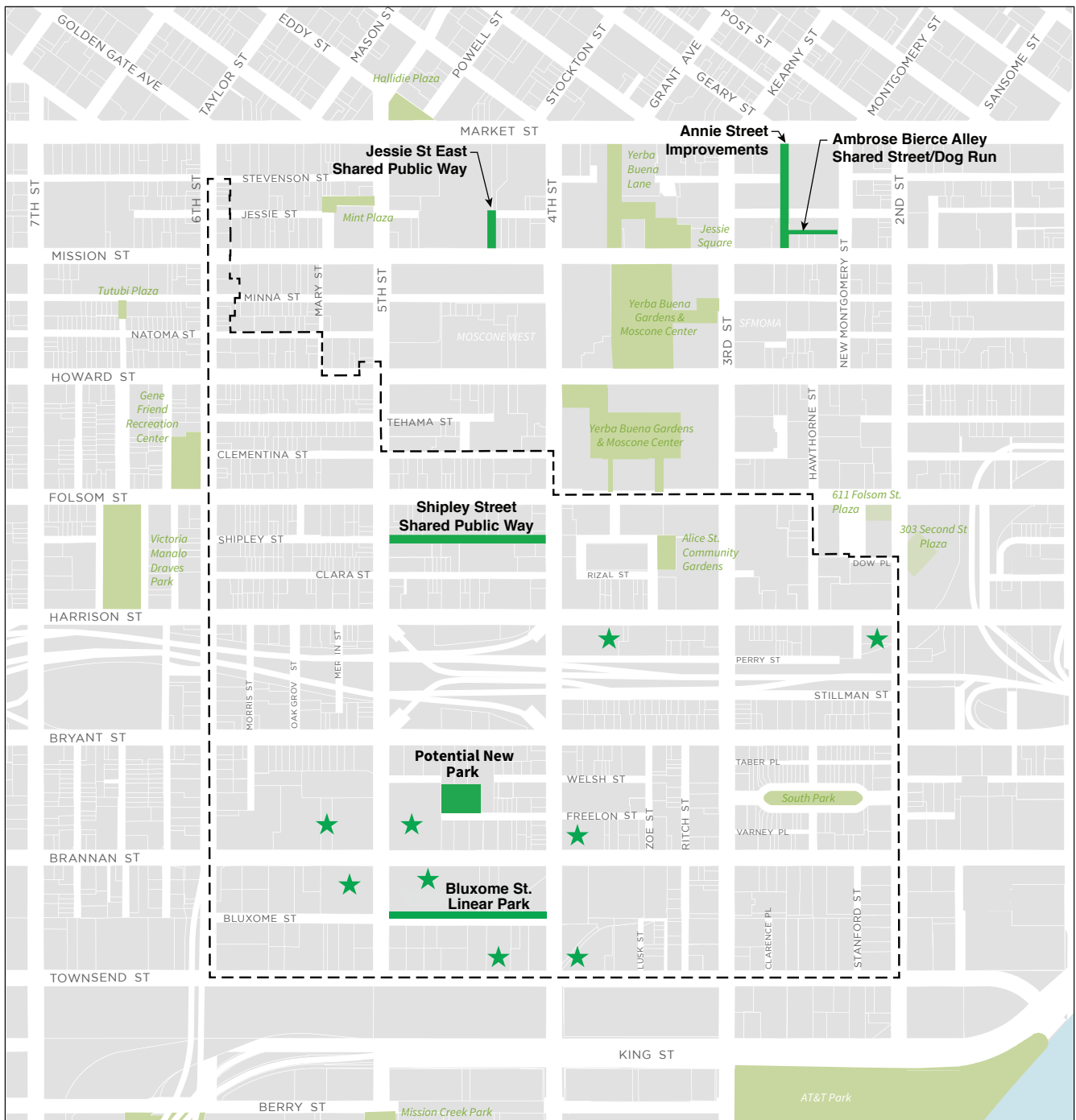
Figure IV.H-1, Open Spaces in and near Plan Area, depicts the city parks, publicly accessible open spaces, and POPOS in and near the Plan Area described above.

Existing Open Spaces In and Near the Plan Area

Recreation and Park Department Properties Subject to Planning Code Section 295

South Park

South Park is an oval-shaped park aligned east-west in the center of the block bounded by Bryant, Second, Brannan, and Third Streets. The park is ringed by a street, also called South Park, which connects to both Second and Third Streets; there is also intersection vehicular and pedestrian access to Bryant Street and Brannan Street via Jack London Alley. Originally established in the 1850s as a private amenity for San Francisco's first enclave of wealthy residents, the City acquired the 0.85-acre green space at the turn of the 20th century and converted it to a public park. The tree-lined oval includes two small children's play areas roughly in the center of the park, with swings, climbing structures, and a slide, as well as paved walking paths, benches and picnic tables at the east and west ends of the park, and grassy areas (lawns) occupying the remainder of the oval.



Solar Access and Shading

Prevailing building heights around South Park range from 20 feet to 40 feet, which create a varied pattern of two, three and four-story buildings that are built to their lot lines and encircle the park. Street trees along public sidewalks and vegetation within the park create a backdrop of greenery that contrasts with and provides relief to the built environment; vegetation and open space in the block's center contribute to the park's character of an outdoor room. The 40-foot height limit immediately surrounding South Park modulates building heights to avoid substantial shading of the park. Building heights on lots fronting on Bryant Street to the north and on Brannan Street to the south may be developed to a height of 45 feet. On east-west block faces, along Second and Third Streets respectively, allowable building heights are up to 65 feet.

South Park is currently in full sunshine between about 10:00 a.m. and 5:00 p.m. during most of the year. In between late fall and early winter, small amounts of shadow linger around the southern and western edges of the park throughout the day, but most of the park is in sunshine by 11:00 a.m. and remains so until about one hour before sunset.³³¹ Existing shadow is largely cast by buildings immediately surrounding the park with a small amount of new shadow between early November and mid-February cast by a newly built 65-foot-tall office building about 160 feet due south of the park at 345 Brannan Street. Observation indicates that South Park is most heavily used during the mid-day period by employees of nearby businesses who eat lunch in the park. In the afternoons and evenings, particularly on warm days, the park accommodates moderate levels of passive recreational use (reading, walking, sitting); park use is lightest during morning hours.

Victoria Manalo Draves Park

Victoria Manalo Draves Park is located in the middle third of a block bounded by Folsom and Harrison Streets to the north and south, respectively, and the smaller streets of Columbia Square and Sherman Street that form the park's east and west edges, respectively, within the block's interior. The park is located about a third of a block, or roughly 350 feet, to the west of the Plan Area within the Western SoMa Plan area. Victoria Manalo Draves is a two-acre neighborhood park featuring active amenity areas such as a baseball/softball diamond, basketball court, and children's playground, as well as more passive spaces such as a picnic area, a grassy knoll surrounded by benches, other grassy areas adjacent to the basketball court and surrounding the knoll, and a community garden. Across the street from the park to its west is the Bessie Carmichael Elementary School and Filipino Education Center. Victoria Manalo Draves Park is the only full-service park (i.e., with multiple uses such as playing fields/courts, playground, picnic and open areas, and community garden) in the SoMa neighborhood.

³³¹ The Planning Department commonly relies upon the hours governed by *Planning Code* Section 295—from one hour after sunrise to one hour before sunset—in environmental review, separate from Section 295 review, of potential shadow impacts of a project. This is because, during the first hour after sunrise and the last hour before sunset, shadows are very long due to the sun's low position near the horizon, meaning that most of the City is shaded at these times: for example, shadow from a single-story, 20-foot-tall building reaches a length of 250 feet 30 minutes after sunrise on June 21. Moreover, in the first and last hours of sunlight, these very lengthy shadows move more quickly across the ground than do shadows at other times of day. When evaluating the potential for a development to shade a particular open space during the hours subject to *Planning Code* Section 295, one may initially rule out any location that is more distant than 6.5 times the building height, which is the maximum length of any shadow during the Section 295 period, based on the lowest sun angle (at the winter solstice) at one hour after sunrise and one hour before sunset.

Solar Access and Shading

Buildings surrounding Victoria Manalo Draves Park range from one to four stories in height, or about 15 feet to 50 feet. Existing height limits surrounding the park are 45 feet along interior lots fronting Columbia Square and Sherman Streets. On the block's northern and southern frontages, height limits are 65-feet. The 65-foot height district extends across Folsom Street to the north; to the south across Harrison Street, heights are limited to 30 feet along the portion of the block traversed by the elevated I-80 freeway. South of the freeway, where currently the Hall of Justice is situated, buildings are permitted to a height of 105 feet.

Victoria Manalo Draves Park is in full sunshine during much of the day year-round. Around the winter solstice on December 21, the existing Hall of Justice shades the southern portion of the park at about 8:20 a.m., one hour after sunrise, but the park is in full sun by 9:00 a.m. Shadows advance toward the park's western edge by 1:00 p.m. and cover about half of the park by about 3:55 p.m., one hour before sunset. At the spring and fall equinoxes (around March 21 and September 21, respectively), the park is in full sun between about 9:00 a.m. and 4:00 p.m., after which shadows begin to encroach upon the park's western edge. By 6:10 p.m., one hour before sunset, shadows cover about one-third of the park. On the summer solstice (around June 21) at about 6:45 a.m., one hour after sunrise, about three-quarters of the park is covered in shade, but is in full sunshine between about 9:00 a.m. and 6:00 p.m. At about 7:35 p.m., one hour before sunset, shadows cover less than 25 percent of the park. Other than the Hall of Justice, shadow is cast on Victoria Manalo Draves Park by buildings immediately surrounding the park, including Bessie Carmichael Elementary School on Seventh Street. Observation indicates that the athletic facilities at Victoria Manalo Draves Park are fairly heavily used, particularly in the afternoons and evenings and on weekends. Midday use of the park on weekdays is quite heavy, and includes people eating lunch and relaxing on park benches. Dog walking and children using the playground are also common activities.

Gene Friend Recreation Center

Gene Friend Recreation Center is located on a 1-acre parcel at the northwest corner of Sixth and Folsom Streets, a block outside of the Central SoMa Plan Area, within the Western SoMa. The facility provides indoor and outdoor recreational areas. Indoor facilities include a gymnasium, activity room, weight room, and auditorium. Outdoor active spaces include basketball courts, a playground with sand pit, and open grass areas for passive recreation. The outdoor area is fenced and gated, and is only accessible at the times that the Center is open, currently from 9:00 a.m. to 9:00 p.m.

Solar Access and Shading

Height limits surrounding the park range from 45 feet and 65 feet to the north and west and may be permitted up to 85 feet to the east, across Sixth Street, and to the south, across Harrison Street. Surrounding buildings are typically two to four stories (about 25 feet to 50 feet) in height. Most of the use of Gene Friend Recreation Center occurs within the indoor facility, so shadow effects are not relevant there. Beginning at about 8:20 a.m. on the winter solstice, buildings south of Folsom Street shade the Center's outdoor recreation spaces until about 9:30 a.m. when most shadow recedes. Buildings to the west across Harriet Street shade the space beginning about 1:00 p.m. on the winter solstice. On late afternoon winter days, the outdoor area is fully shaded by about 3:55 p.m. On the spring and fall equinoxes, the outdoor area is partially shaded by the recreation center building in the very early morning but is in full sun by 9:00 a.m. and remains so until about 4:00 p.m., when the buildings on Harriett Street begin to shade the western edge of the outdoor area. Over the next two hours, shadows

gradually cover the space until it is fully shaded by 6:00 p.m. On the summer solstice, the outdoor recreation area is partially shaded by the recreation center building in the very early morning but is in full sun by 9:00 a.m. and remains so until about 6:00 p.m. The outdoor area is about three-fourths shaded through about 7:35 p.m. around sunset. Observation suggests that use of the outdoor area is not typically heavy, except on warm days, when people use the center for passive recreation, where they rest and relax in park-like space.

Howard-Langton Mini Park Community Garden

The Howard-Langton Mini Park Community Garden is located at Howard and Langton Streets, on a 0.22-acre (9,374-square-foot) lot on the south side of Howard Street between Seventh and Eighth Streets, about 1,200 feet west along Howard Street from the Plan Area. This park includes a community garden with benches and tables and is bordered by a slatted metal fence that limits public access to persons with plots for gardening during specified daylight hours. The park is one of about three dozen community gardens on City property, including the Alice Street Community Gardens in the Plan Area, where members grow produce and ornamental plants for personal use. The Howard-Langton Mini Park has 60 garden plots, all of which are assigned. The Park also has a substantial number of people on a waiting list for plots.

Solar Access and Shading

Prevailing buildings around the park are two to three stories (about 20 feet to 35 feet in height) and are within legislated districts that permit heights up to 55 feet.

Howard-Langton Mini Park Community Garden is partially shaded throughout the day on the winter solstice by buildings to its south and east; maximum solar access during winter occurs around 11:00 a.m., when nearly half of the park is in sun. On the spring and fall equinoxes, the park is in near full sunshine between about 12:00 noon and 2:00 p.m.; before noon, the building to the south casts partial shadow, while after 2:00 p.m., the building to the west partially shades the park. On the summer solstice, the park is fully shaded at the first Section 295 minute (about 6:45 a.m.) and shading recedes until the gardens are in near full sun from about 11:00 a.m. until almost 4:00 p.m. By the last Section 295 minute (at about 7:35 p.m. in the summertime), the gardens are nearly fully shaded.

Other Open Spaces

Alice Street Community Gardens

The Alice Street Community Gardens were developed in the 1980s as part of the Yerba Buena Center Redevelopment Project in response to input from neighborhood residents. The gardens occupy about one-third of an acre on Lapu Lapu Street, on the block bounded by Folsom, Third, Harrison, and Fourth Streets, in the north-central portion of the Plan Area. The gardens comprise raised beds that are tended by residents of mid-rise towers that make up a number of nearby senior housing developments.

Solar Access and Shading

On the winter solstice, the Alice Street Community Gardens receive substantial sunlight between about 12:00 noon and 3:00 p.m. Buildings to the south largely shade the gardens in the morning, while buildings to the west shade them later in the afternoon. On the spring and fall equinoxes, the gardens are largely in sunlight between about 1:00 p.m. and 4:00 p.m., while surrounding buildings cast at least partial shadow in

the morning and later in the afternoon. On the summer solstice, the Alice Street Community Gardens are largely in sunlight from about 10:00 a.m. to 5:30 p.m., while surrounding buildings cast partial shadow earlier and later. Unlike many community gardens, the Alice Street Community Gardens are publicly accessible.

Yerba Buena Gardens

Yerba Buena Gardens was developed in the 1990s as part of the Yerba Buena Center Redevelopment Project. It sits atop the subterranean portions of the Moscone Convention Center, occupying much of the two blocks bounded by Mission, Third, Folsom, and Fourth Streets, just north of the Plan Area. The Esplanade comprises the majority of the northern portion of these two blocks, atop Moscone Center North. The approximately 189,000-square-foot Esplanade is bordered to the north by Mission Street, to the east by the Yerba Buena Center for the Arts gallery and theater space, to the south by Howard Street and the restaurants atop the Moscone North lobby, and to the west by the Metreon, a four-story building containing entertainment/retail space, including a Target store, a movie theater, and a food court. The Esplanade includes benches, berms/terraces, the Martin Luther King, Jr., Memorial Fountain and Waterfall, pedestrian walkways, and public art. The center of the Esplanade comprises a large open grass area surrounded by smaller gardens. Also on this northern block are the East Garden, a 22,500-square-foot paved plaza on Third Street with seating areas, a sculpture, landscaped vegetation, and a water feature, and the Howard Street Plaza, an 8,200-square-foot paved plaza along Howard Street. This plaza serves as the southern entrance to the Yerba Buena Center for the Arts Novellus Theater and includes a staircase, pedestrian ramp, landscaped open space and planter boxes. A bike-sharing station and benches are located at the plaza's southeastern corner.

The southerly of the two Yerba Buena Gardens blocks contains the Children's Garden, which sits atop Moscone Center South. The irregularly shaped area is bordered to the north by Howard Street and the Moscone South lobby building; to the east by the Esplanade Building; to the south by an indoor ice rink; and to the west by the Children's Creativity Museum, the Bowling Center, the Child Development Center, and Fourth Street. The open space includes a Learning Garden, a maze, a circular lawn, a play circle with playground (open daily from 7:00 a.m. to 7:00 p.m.), a nature walk lined with plum trees, and an amphitheater. It also includes a historic carousel near the corner of Fourth and Howard Streets.

During spring, summer, and autumn months, Yerba Buena Gardens hosts musical, dance, poetry, acrobatic, and other performance events.³³²

Solar Access and Shading

Existing shadow is cast on Yerba Buena Gardens by buildings of Moscone Center North and South and by buildings surrounding the two blocks of open space, including Moscone Center West at Fourth and Howard Streets. On the northern block, the Esplanade is generally sunny during the day throughout the year, with shade present mainly in the early morning and in the late afternoon hours. The East Garden is generally partially sunny during the day throughout the year under existing conditions. Shade from surrounding buildings is present until mid-morning and returns in mid-afternoon. During the late fall and early winter months, about half of the East Garden is always shaded: there is midday sun, but the location of sunlight varies as shadows move across the plaza. The Howard Street Plaza is sunny during much of the day

³³² Yerba Buena Gardens Festival, "About" website. Available at <http://www.ybgfestival.org>, accessed June 29, 2016.

throughout the year, with shade present mainly in the early morning and in the late afternoon. Based on observation, the Esplanade does not appear to be heavily used in the mornings, but is well-used during the noon hour and afternoons, particularly on sunny days. Events are also held in the Esplanade, especially on weekends. The East Garden and Howard Street Plaza are typically lightly used; in particular, pedestrians traverse the East Garden traveling to and from the San Francisco Museum of Modern Art.

On the southern block, adjacent buildings cast shadow around the perimeter of the Children's Garden, but most of the garden is generally sunny during the day throughout the year; some shade is present in the early morning and late afternoon hours. During the late fall and early winter months under existing conditions, about half of the Children's Garden is shaded throughout the day by surrounding buildings. The Children's Garden is typically lightly used on weekdays but heavily used on weekends, when children and families congregate on the play area in the center of the open space.

Jessie Square

Jessie Square is an approximately 0.78-acre plaza that sits atop the subsurface Jessie Square Garage, on the north side of Mission Street between Third and Fourth Streets, north of the Plan Area. There is a water feature with uncovered seating areas in the plaza's center and uncovered seating with sun shades in the northeastern corner. There is also uncovered seating near the southern perimeter of the square. The square is mostly paved, with grass landscaping in the southern portion and around the water feature.

Solar Access and Shading

Because there are no buildings in Yerba Buena Gardens directly across Mission Street from Jessie Square, this open space is in full sun by about 8:00 a.m. on the winter solstice. St. Patrick's Church begins to cast shadow on Jessie Square by about 10:00 a.m., and the square is fully shaded by about 3:00 p.m. At the spring and fall equinoxes, Jessie Square is in near-complete sunlight from shortly after 10:00 a.m. to about 1:00 p.m. On the summer solstice, Jessie Square is substantially in sunlight from about 11:30 a.m. to about 2:30 p.m. Jessie Square is used primarily for passive recreation such as sitting and strolling. Observation indicates that usage of Jessie Square is typically light in the morning, mostly by pedestrians traveling to work, while during the midday period, the square is more substantially used by residents, shoppers, tourists, and workers as an outdoor lunch destination and a mid-block pedestrian crossing. Afternoon usage of the square is moderate, with a fair degree of pedestrian travel from work.

Yerba Buena Lane

Yerba Buena Lane is a one-block-long public pedestrian passage north of the Plan Area that connects Market Street to Mission Street. Yerba Buena Lane also connects to Jessie Square in front of the Contemporary Jewish Museum. Yerba Buena Lane exhibits an urban downtown character with retailers, restaurants, and a museum occupying storefronts along the passage that includes ramp, stairway and other pedestrian amenities such as formal seating areas.

Solar Access and Shading

Because of its narrow configuration and high-density urban setting, Yerba Buena Lane receives sunlight on the winter solstice only when the sun is nearly parallel to Third Street—around 9:00 a.m. On the spring and fall

equinoxes, the passage receives substantial sunlight between about 9:30 a.m. and 12:00 noon, and on the summer solstice, the open space receives substantial sunlight between about 10:30 a.m. and 1:30 p.m.

Mint Plaza

Mint Plaza is an approximately 0.4-acre paved plaza that occupies the Jessie Street right-of-way between Fifth Street and Mint Street, as well as the portion of Mint Street north of where Jessie intersects Mint, near the Plan Area. It contains restaurant spaces on the north and east, and is adjacent on the south to the Old Mint. The plaza contains tables and chairs, is planted with a row of trees, and includes a planted arbor along the northern edge. The City maintains ownership of the plaza, but the plaza is managed by a non-profit organization, Friends of Mint Plaza, which sponsors summer concerts and other events in the plaza.

Solar Access and Shading

Mint Plaza is mostly in shadow all day long on the winter solstice. However, on the spring and fall equinoxes, Mint Plaza is at least partially sunny from about 12:30 p.m. to 4:00 p.m., while on the summer solstice, Mint Plaza receives substantial sunlight between about 10:00 a.m. and 3:00 p.m. Mint Plaza is used mostly during the midday hours.

IV.H.3 Regulatory Framework

Local Regulations

Sunlight Ordinance

Section 295 of the *Planning Code*, 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 effectively limits shadow on city parks, requiring that specific findings be made before buildings greater than 40 feet in height can be approved that would shade property under the jurisdiction of or designated to be acquired by the Recreation and Park Commission, during the period from one hour after sunrise to one hour before sunset. Section 295(b) states that the Planning Commission, following a public hearing, “shall disapprove” any project governed by Section 295 that would have an “adverse effect” due to shading of a park subject to this section, “unless it is determined that the impact would be insignificant.” The Planning Commission’s decision under Section 295 cannot be made “until the general manager of the Recreation and Park Department in consultation with the Recreation and Park Commission has had an opportunity to review and comment to the City Planning Commission upon the proposed project.”

In 1989, the two Commissions adopted shadow criteria for 14 downtown parks, including quantitative maximum shadow coverage (“Absolute Cumulative Limit”) for each open space and qualitative criteria for assessing new shadow.³³³ (Gene Friend Recreation Center (then known as SoMa Park), Union Square, and Boeddeker Park are the parks nearest the Plan Area for which Absolute Cumulative Limits were established.) For projects that would

³³³ The sunlight on a park is measured in terms of “square-foot-hours” of sunlight, while the shadow load is measured in terms of “shadow-foot-hours.” A square-foot-hour of sunlight is one hour of sunlight on one square foot of ground, while a shadow-foot-hour represents one hour of shade on one square foot of ground.

affect parks for which a quantitative limit was established, shadow impacts have typically been judged insignificant if the project would not exceed the Absolute Cumulative Limit. In establishing the Absolute Cumulative Limits for the 14 downtown parks, the Commissions generally relied upon the following guidelines: for smaller parks (of less than two acres) on which more than 20 percent of the potential “Prop. K” sunlight was in shadow under then-existing conditions, no additional shadow was to be allowed. (This standard was applied to nine downtown parks.) For larger parks (of two acres or more) with between 20 percent and 40 percent existing shadow, the Absolute Cumulative Limit was to set at 0.1 percent; that is, an additional 0.1 percent new shadow, measured in shadow-foot-hours, would be allowed beyond existing conditions. The increment allowed as the Absolute Cumulative Limit—0.1 percent, in the case of this subset of parks—is measured as a percentage of the theoretical annual available sunlight.³³⁴ For larger parks shadowed less than 20 percent of the time, an additional 1.0 percent new shadow was to be allowed.³³⁵ No guideline was provided for parks of less than two acres that have less than 20 percent existing shadow.³³⁶ None of the 14 parks for which an Absolute Cumulative Limit was established in 1989 are within the Plan Area.

The qualitative criteria adopted by the commissions for evaluation of a project’s shadow impact include the time of day and time of year when shadow would be cast, the size, duration, and location within the park of the new shadow, and the public good served by the building casting the shadow.

As noted, the only park subject to Section 295 within the Plan Area is South Park, although Gene Friend Recreation Center is just across Sixth Street from the Plan Area, and Victoria Manalo Draves Park is less than one-half block west of the Plan Area. Alice Street Community Gardens is within the Plan Area, but is not regulated by Section 295. Yerba Buena Gardens, which is outside of the Plan Area, is under the jurisdiction of the Office of Community Investment and Infrastructure (the Successor Agency to the San Francisco Redevelopment Agency) and is not subject to Section 295. In addition to Gene Friend Recreation Center and Victoria Manalo Draves Park, the nearest parks outside the Plan Area that are subject to Section 295 are Union Square and Boeddeker Park; however, these parks are well outside the Plan Area and would not be affected by new development built pursuant to the Plan.

Other Planning Code Regulations

Planning Code Section 147, applicable to the C-3,³³⁷ Eastern Neighborhoods Mixed Use, and SoMa Mixed Use districts,³³⁸ requires that new development and additions to existing structures where the height exceeds 50 feet must be shaped to “reduce substantial shadow impacts on public plazas and other publicly accessible

³³⁴ The theoretical annual available sunlight is the amount of sunlight, measured in square-foot-hours, which would fall on a given park during the hours covered by Section 295. It is computed by multiplying the area of the park by 3,721.4, which is the number of hours in the year subject to Section 295. Thus, this quantity is not affected by shadow cast by existing buildings, but instead represents the amount of sunlight that would be available with no buildings in place. Theoretical annual available sunlight calculations for each downtown park were used by the Planning and Recreation and Park Commissions in establishing the allowable Absolute Cumulative Limit for downtown parks in 1989.

³³⁵ The guidelines for new shadow were presented in a memorandum to the Planning and Recreation and Parks Commissions, from their staffs, dated February 3, 1989, and referred to in Joint Resolution 11595 of the two commissions, adopted February 7, 1989.

³³⁶ None of the 14 downtown parks for which Absolute Cumulative Limits were established met these criteria.

³³⁷ The only portion of the Plan Area within the C-3 use district is within the block bounded by Folsom, Third, Harrison, and Hawthorne Streets.

³³⁸ Eastern Neighborhood Mixed Use Districts include MUO, MUR, RED, SPD, SALI, WMUO, and WMUG in the Plan Area, as well as RED-MX, MUG, and UMU. South of Market Mixed Use Districts include RSD, SLI, and SSO in the Plan Area.

spaces other than those protected under Section 295, ... consistent with the dictates of good design and without unduly restricting the development potential of the site in question.” 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. A determination of compliance with Section 147 is made as part of the Section 309 permit review process in the C-3 districts and as part of the Section 307 permit review process elsewhere.

IV.H.4 Impacts and Mitigation Measures

Significance Criteria

Implementation of the proposed project would have a significant shadow impact if it were to:

- Create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas.

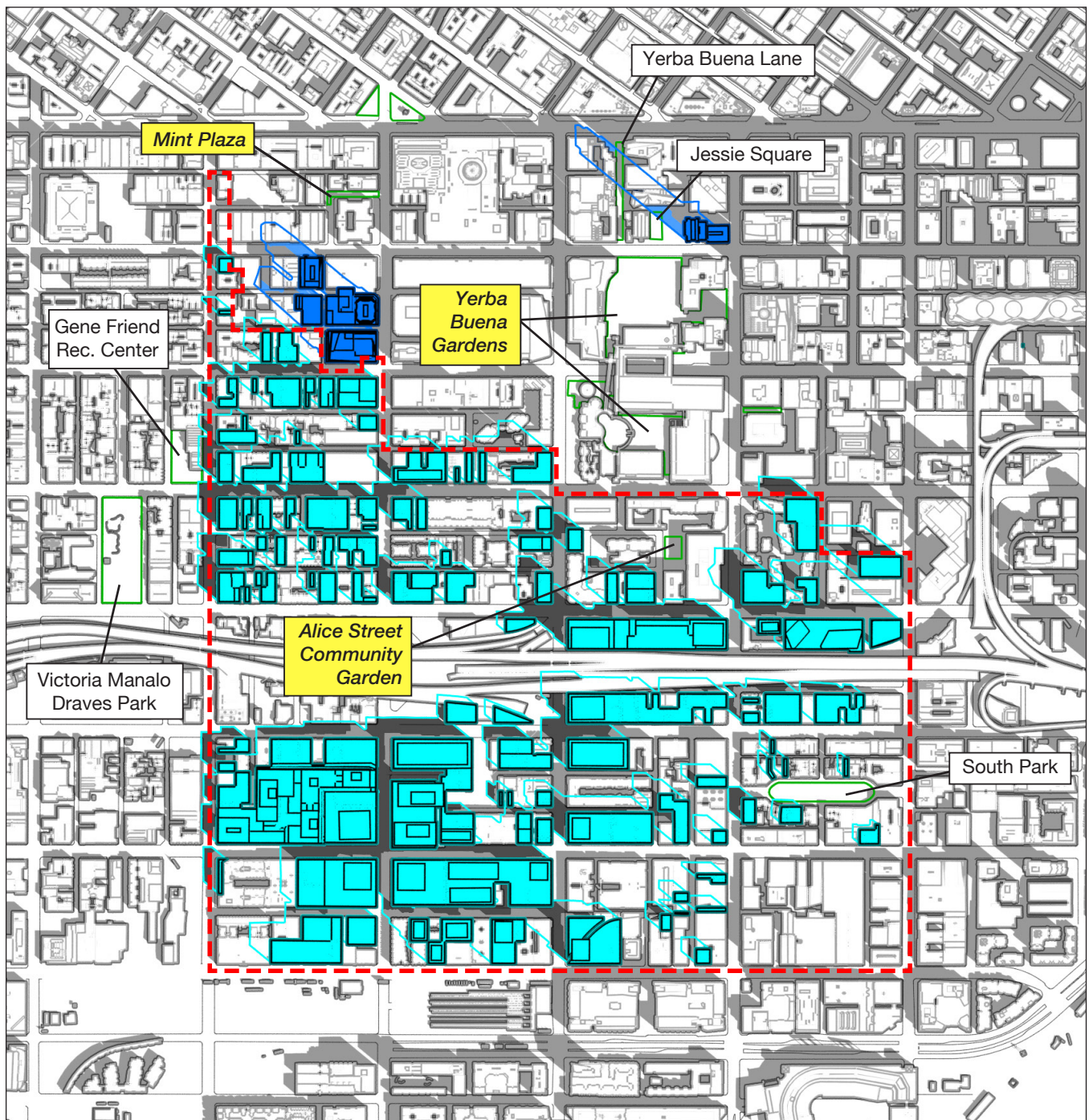
Approach to Analysis

Shadow effects of the Plan were analyzed by computer modeling of shadows that would be cast by the buildings that could be built with implementation of the Plan, as described in the discussion of Analysis Assumptions in the “Overview” section of Chapter IV, Environmental Setting, Impacts, and Mitigation Measures, p. IV-3. Shadows analyzed are based on development assumptions formulated by the Planning Department for the Plan, as described in the Overview section. The complete set of figures produced by the computer modeling is included in **Appendix E. Figure IV.H-2** through **Figure IV.H-10** are selected from the complete set and depict shadow from likely development under the Plan for representative times of day (9:00 a.m., 12:00 p.m., and 3:00 p.m.) during the four seasons: on December 20, the winter solstice, when the midday sun is at its lowest and shadows are at their longest; on June 21, the summer solstice, when the midday sun is at its highest and shadows are at their shortest; and on September 20, the fall equinox, when sun angle and shadows are midway between the solstices.³³⁹ Shadows on any other day of the year would generally be within the range of shadows presented in these figures.³⁴⁰ Shadow effects are analyzed qualitatively.³⁴¹

³³⁹ Only one set of figures is presented for the spring and fall equinoxes together because the sun’s path across the sky is generally symmetrical throughout the year and thus shadows on the two equinoxes are essentially the same. As a result, shadows from the winter solstice in December through the summer solstice in June generally mirror shadows from June through December.

³⁴⁰ Figure IV.H-2 through Figure IV.H-10 separately depict new shadows from Plan Area development and new shadows from two projects just outside the Plan Area that were approved independently of the Plan—706 Mission Street and the 5M Project. Effects of those projects are discussed in the Cumulative Impacts analysis, p. 40.

³⁴¹ This analysis does not present a quantitative analysis of potential shadow effects. Quantitative shadow analysis is typically required for analysis of individual buildings under Section 295 and/or as part of project-specific review.



--- Plan Area Boundary



NORTH

OPEN SPACES

Section 295 Park

Other Open Space



Potential New Buildings and their Shadows

Potential New Buildings' Net New Shadows at Ground Level

Existing Shadows at Ground Level



Approved New Buildings (5M and 706 Mission) and their Shadows

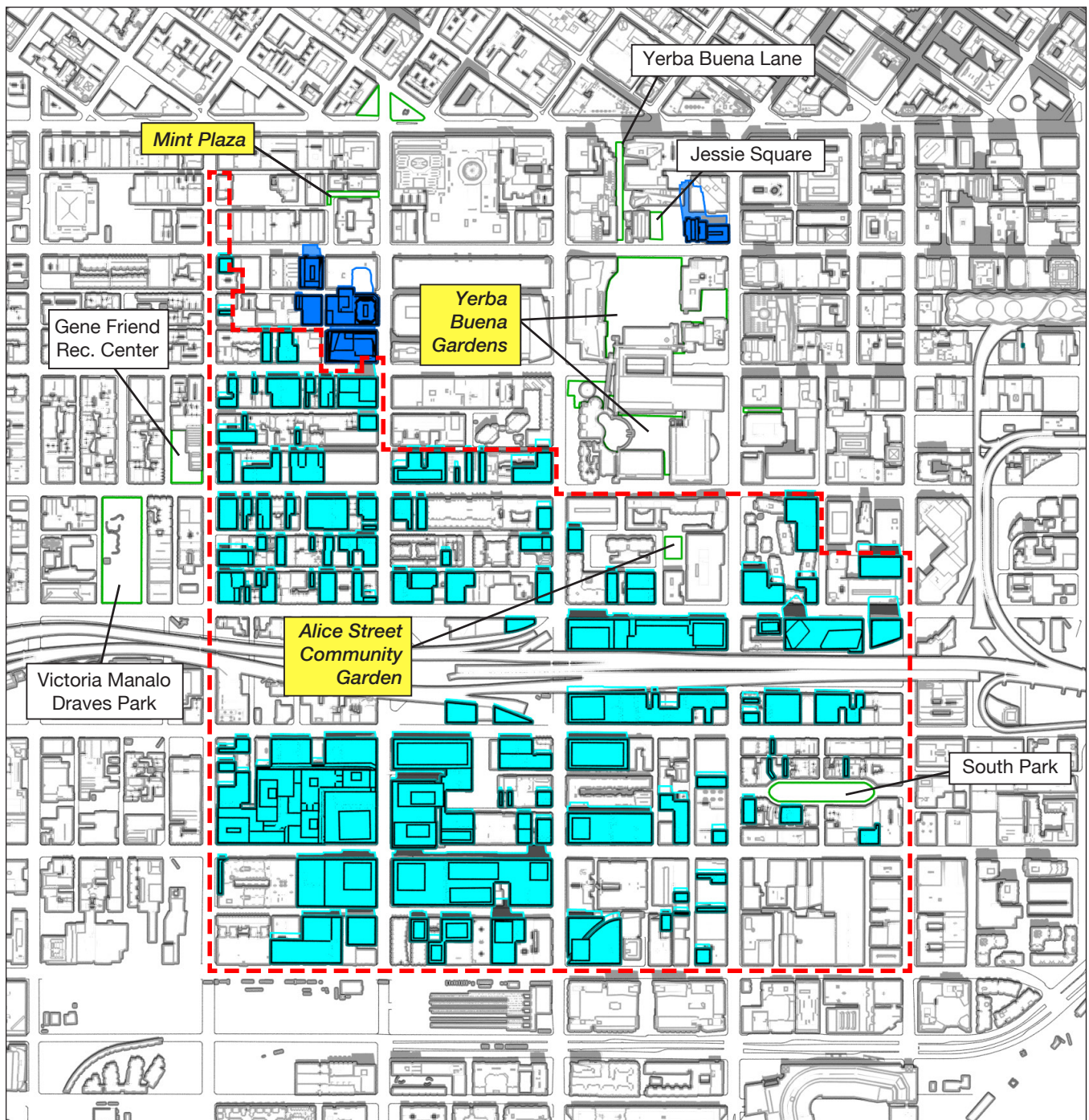
Approved New Buildings' (5M & 706 Mission) Net New Shadows at Ground Level

SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

Figure IV.H-2

Shadows: June 21 (Summer Solstice) 9:00 a.m.



--- Plan Area Boundary



OPEN SPACES

- Section 295 Park
- Other Open Space

- Potential New Buildings and their Shadows
- Potential New Buildings' Net New Shadows at Ground Level
- Existing Shadows at Ground Level

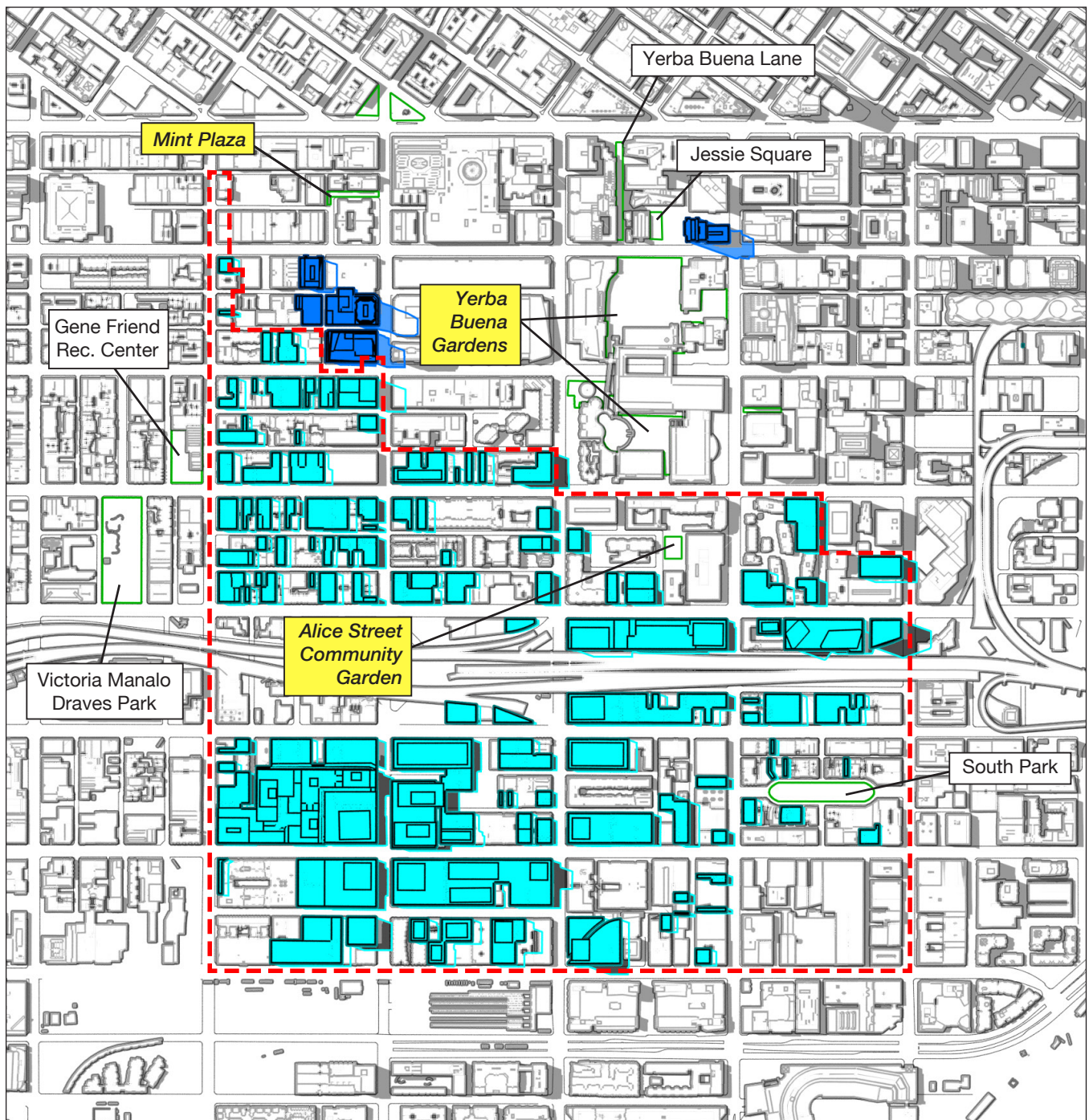
- Approved New Buildings (5M and 706 Mission) and their Shadows
- Approved New Buildings' (5M & 706 Mission) Net New Shadows at Ground Level

SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

Figure IV.H-3

Shadows: June 21 (Summer Solstice) 12:00 noon



--- Plan Area Boundary



OPEN SPACES

- Section 295 Park
- Other Open Space

- Potential New Buildings and their Shadows
- Potential New Buildings' Net New Shadows at Ground Level
- Existing Shadows at Ground Level

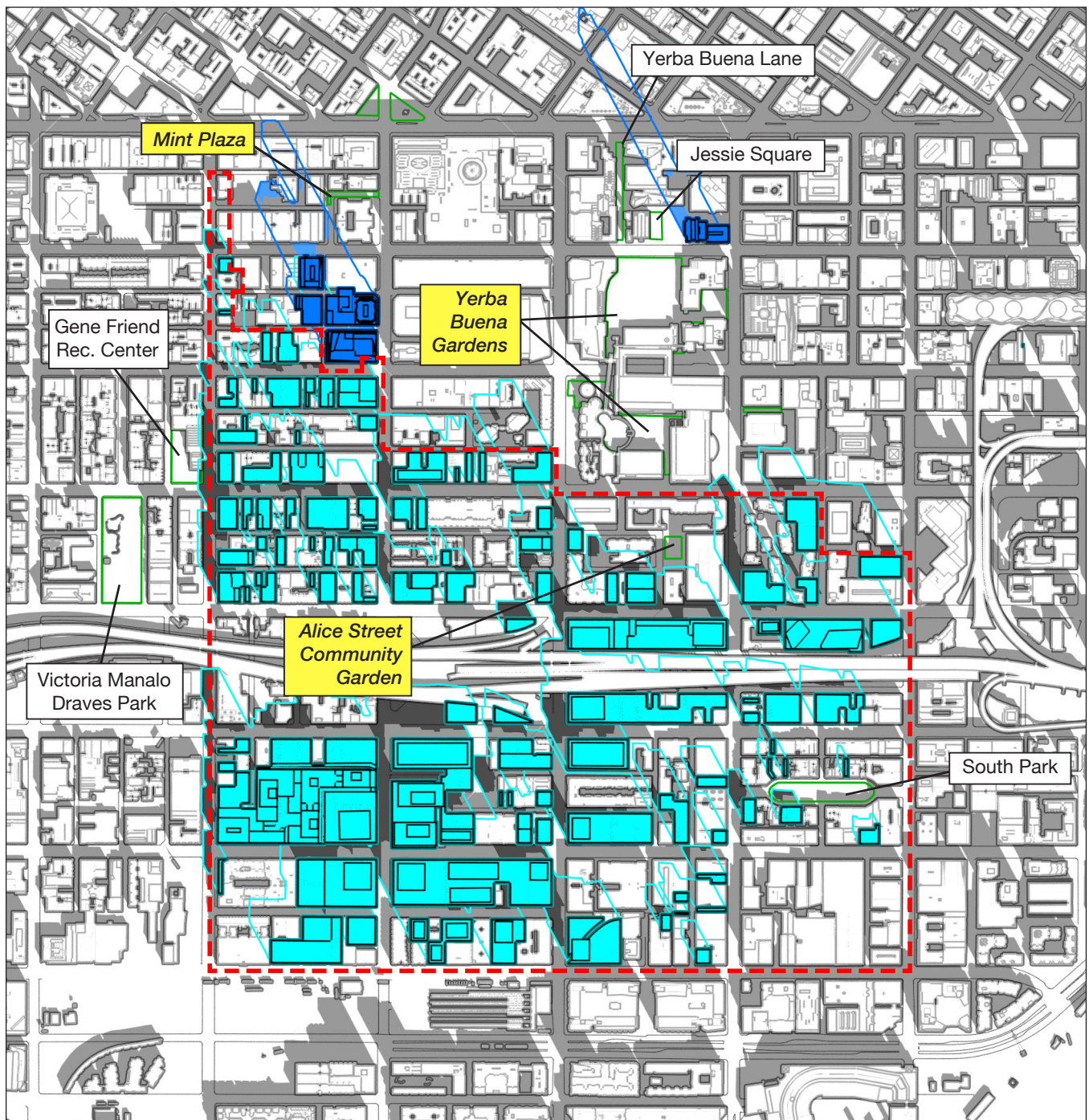
- Approved New Buildings (5M and 706 Mission) and their Shadows
- Approved New Buildings' (5M & 706 Mission) Net New Shadows at Ground Level

SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

Figure IV.H-4

Shadows: June 21 (Summer Solstice) 3:00 p.m.



--- Plan Area Boundary



OPEN SPACES

- Section 295 Park
- Other Open Space

- Potential New Buildings and their Shadows
- Potential New Buildings' Net New Shadows at Ground Level
- Existing Shadows at Ground Level

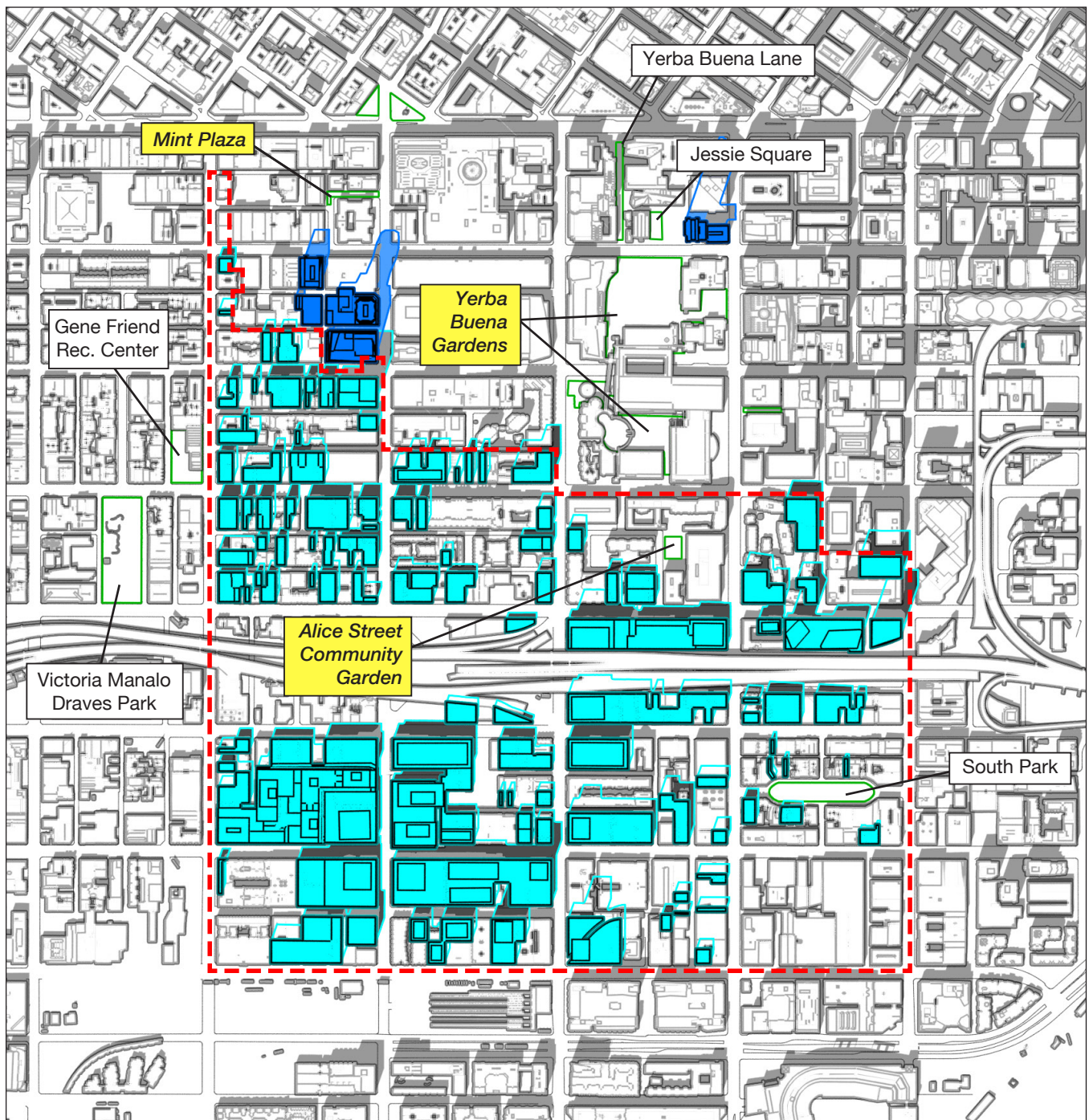
- Approved New Buildings (5M and 706 Mission) and their Shadows
- Approved New Buildings' (5M & 706 Mission) Net New Shadows at Ground Level

SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

Figure IV.H-5

Shadows: September 20 (Fall Equinox) 9:00 a.m.



--- Plan Area Boundary



OPEN SPACES

- Section 295 Park
- Other Open Space

- Potential New Buildings and their Shadows
- Potential New Buildings' Net New Shadows at Ground Level
- Existing Shadows at Ground Level

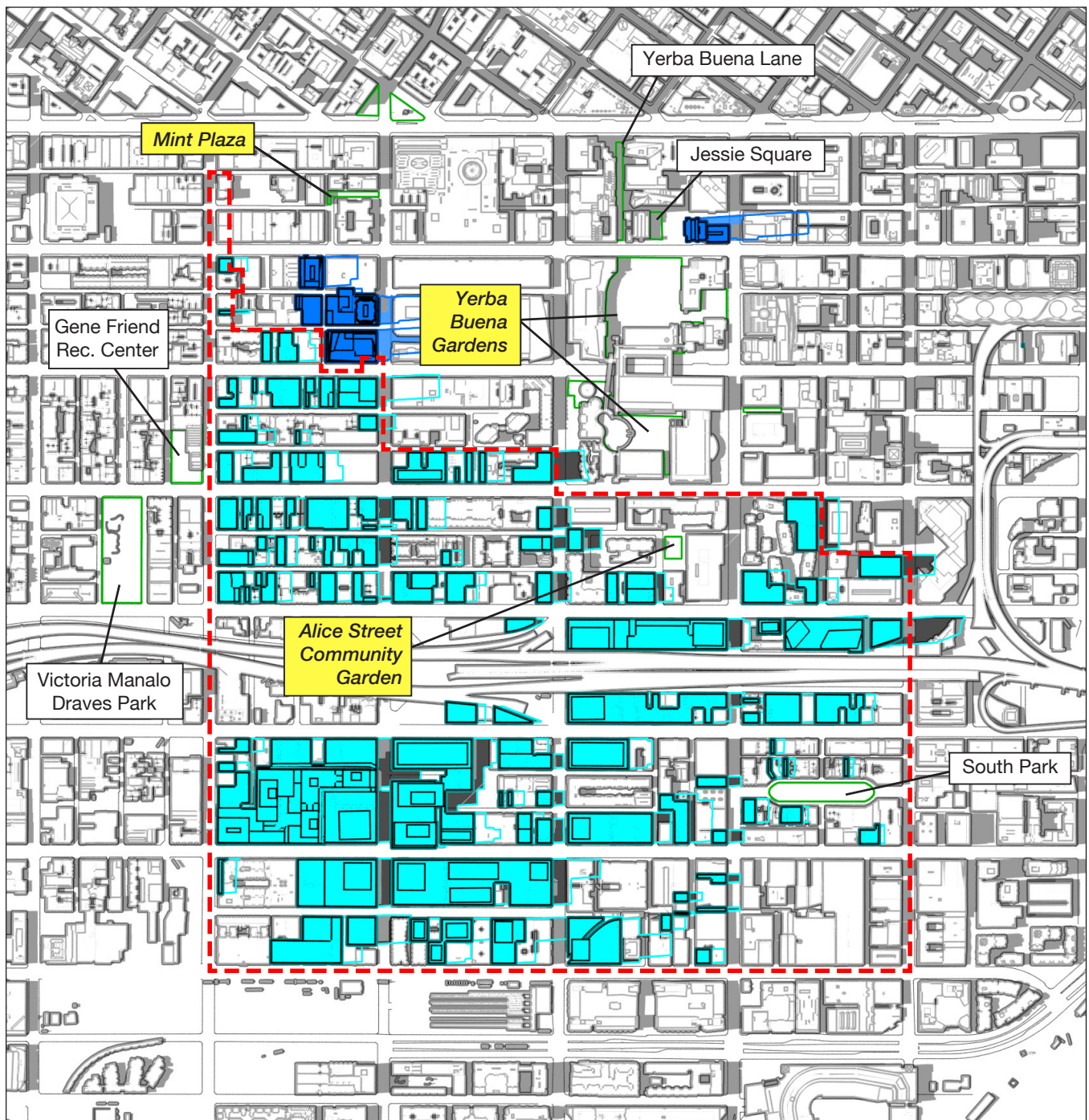
- Approved New Buildings (5M and 706 Mission) and their Shadows
- Approved New Buildings' (5M & 706 Mission) Net New Shadows at Ground Level

SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

Figure IV.H-6

Shadows: September 20 (Fall Equinox) 12:00 noon



--- Plan Area Boundary



NORTH

OPEN SPACES

- Section 295 Park
- Other Open Space

- Potential New Buildings and their Shadows
- Potential New Buildings' Net New Shadows at Ground Level
- Existing Shadows at Ground Level

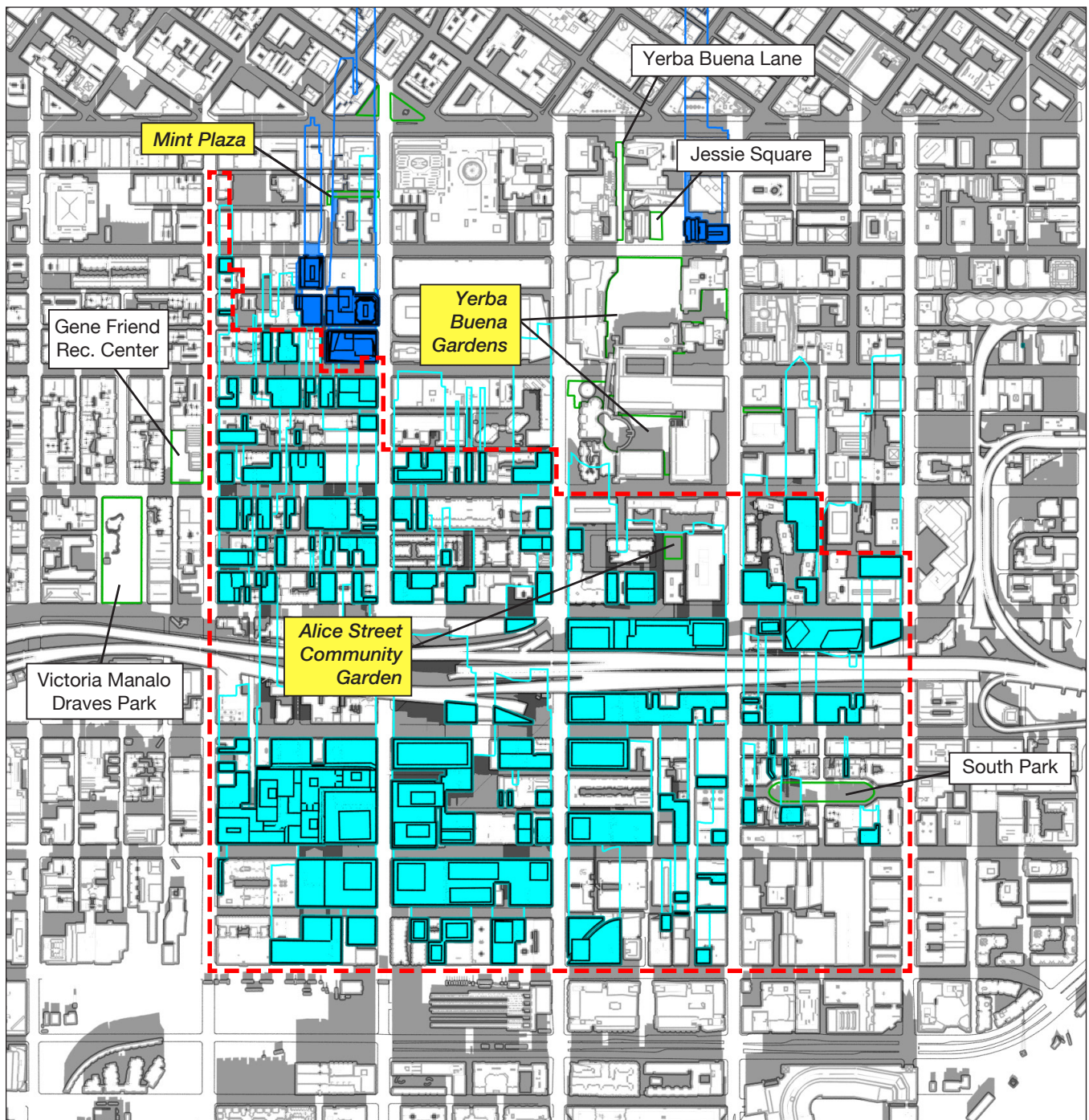
- Approved New Buildings (5M and 706 Mission) and their Shadows
- Approved New Buildings' (5M & 706 Mission) Net New Shadows at Ground Level

SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

Figure IV.H-7

Shadows: September 20 (Fall Equinox) 3:00 p.m.



--- Plan Area Boundary



NORTH

OPEN SPACES

- Section 295 Park
- Other Open Space

- Potential New Buildings and their Shadows
- Potential New Buildings' Net New Shadows at Ground Level
- Existing Shadows at Ground Level

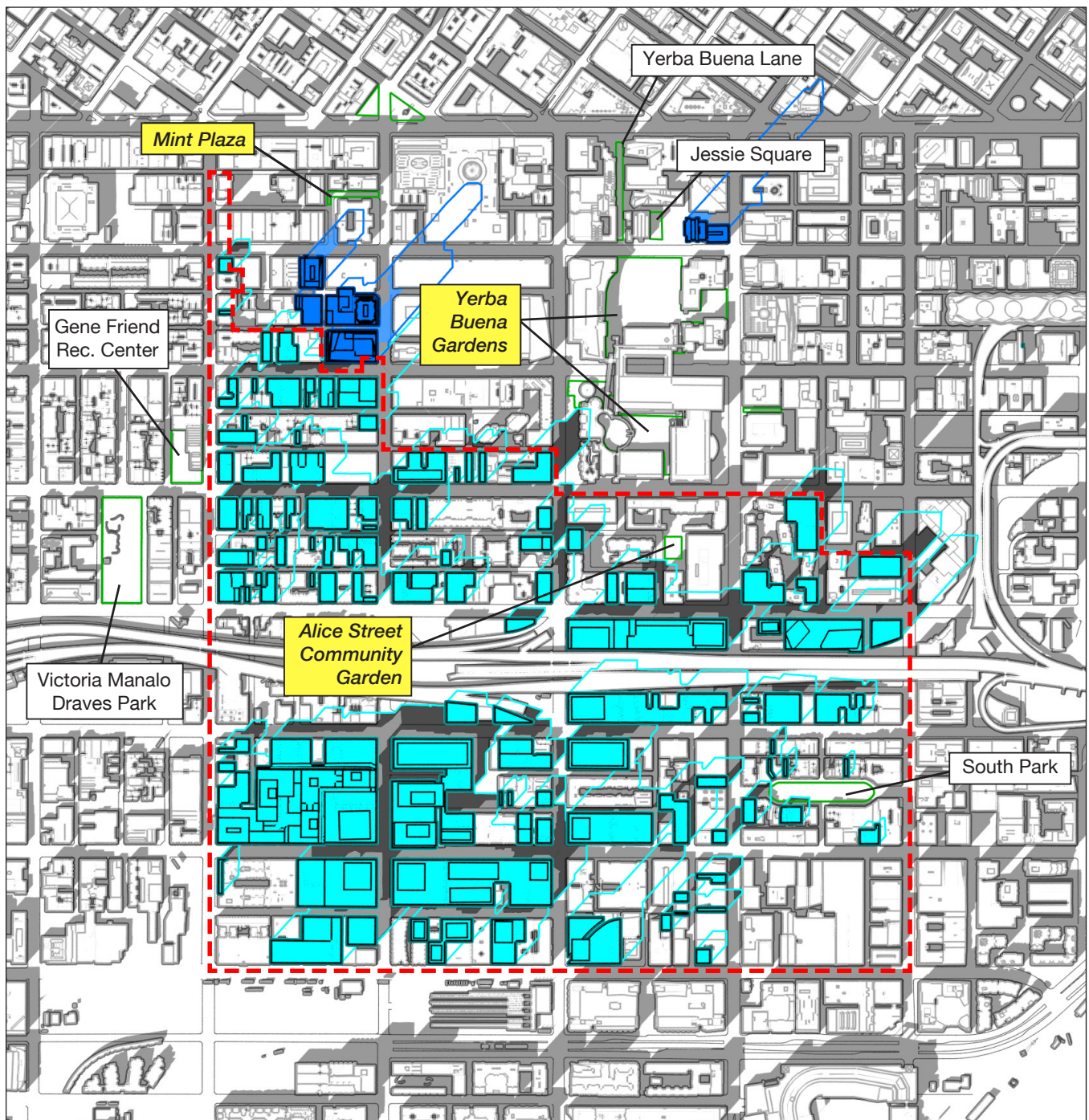
- Approved New Buildings (5M and 706 Mission) and their Shadows
- Approved New Buildings' (5M & 706 Mission) Net New Shadows at Ground Level

SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

Figure IV.H-8

Shadows: December 20 (Winter Solstice) 9:00 a.m.



--- Plan Area Boundary



NORTH

OPEN SPACES

- Section 295 Park
- Other Open Space

- Potential New Buildings and their Shadows
- Potential New Buildings' Net New Shadows at Ground Level
- Existing Shadows at Ground Level

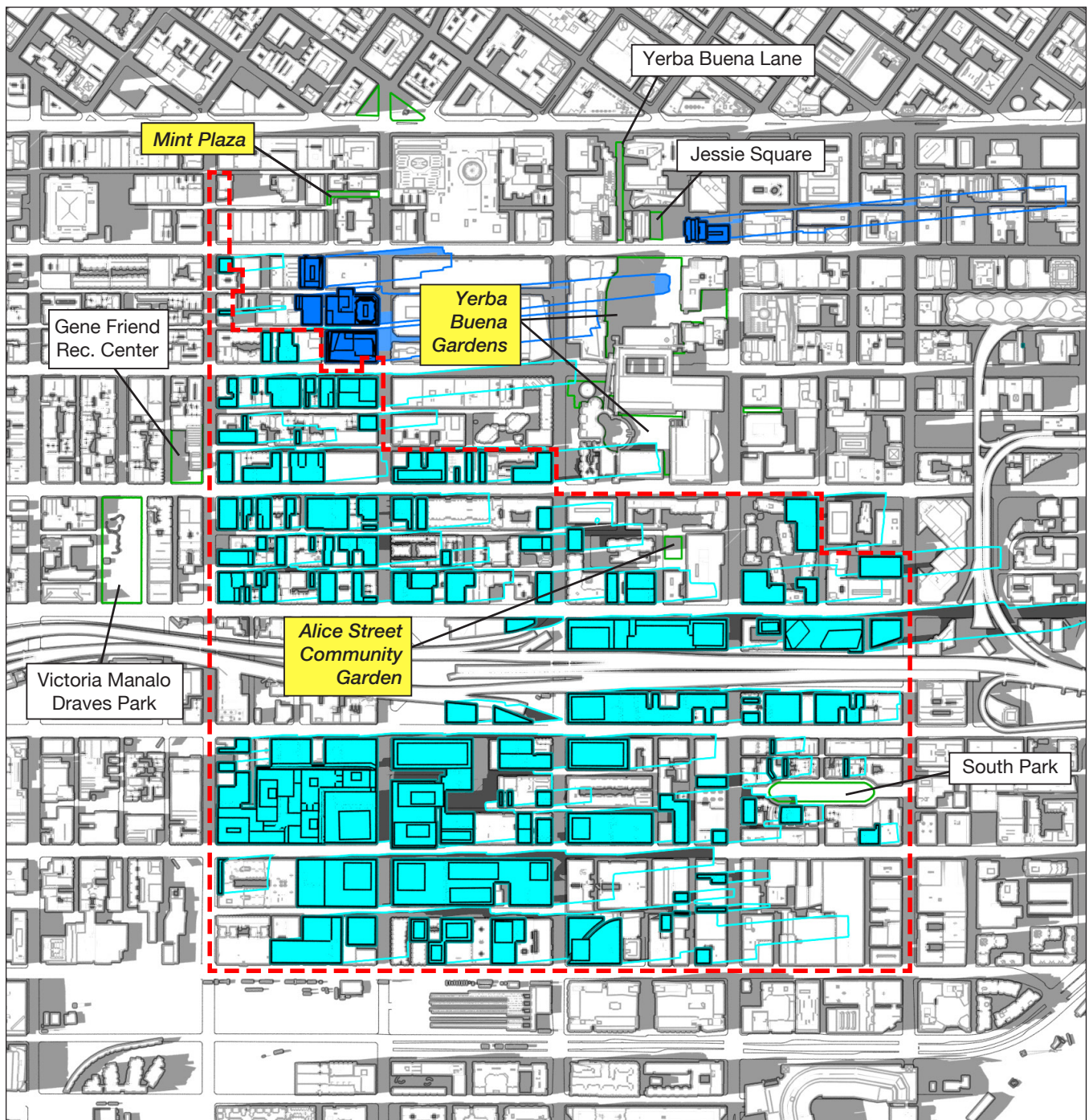
- Approved New Buildings (5M and 706 Mission) and their Shadows
- Approved New Buildings' (5M & 706 Mission) Net New Shadows at Ground Level

SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

Figure IV.H-9

Shadows: December 20 (Winter Solstice) 12:00 noon



--- Plan Area Boundary



OPEN SPACES

- Section 295 Park
- Other Open Space

- Potential New Buildings and their Shadows
- Potential New Buildings' Net New Shadows at Ground Level
- Existing Shadows at Ground Level

- Approved New Buildings (5M and 706 Mission) and their Shadows
- Approved New Buildings' (5M & 706 Mission) Net New Shadows at Ground Level

SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

Figure IV.H-10

Shadows: December 20 (Winter Solstice) 3:00 p.m.

The development assumptions included simple extrusions of parcel lines up to full allowable heights under the Plan for height limits up to 85 feet. In contrast, full coverage of a parcel by a building taller than 85 feet would not be allowed under the Plan, and therefore impacts from such massing are not considered reasonably foreseeable and are not presented. Rather, for parcels with proposed allowable heights taller than 85 feet, building setbacks were built into the model along with reasonable assumptions for limited tower floor plates and tower siting on larger parcels. These assumptions are worst-case in that they do not account for the more refined building setback and bulk controls described in Goal VIII of the Plan and in Chapter II, Project Description. In addition to potential development where height limit changes are proposed under the Plan, the development assumptions upon which this analysis is based also include future development on some parcels where the height limits would not change with implementation of the Plan. Generally, these are sites where existing buildings are substantially shorter than what is allowed under existing height limits.

The massing model used as the basis of this analysis, while generally representative of a reasonably foreseeable outcome of Plan implementation, does not account for individual building designs, such as articulation in massing, parapets, or rooftop projections, as these are unknown at this time. Nor does it consider that one or more buildings may not be built even where rezoning allows for greater height than is currently allowed or where existing height limits permit taller buildings than currently exist. The analysis, therefore, provides a reasonable, conservative estimation of the magnitude of effects, at a programmatic level of analysis. Each subsequent development project that is proposed in the Plan Area—whether on a site where the height limit would be increased pursuant to the Plan or a site where existing height limits would not change—would be subject to *Planning Code* Section 295 (if greater than 40 feet tall), as well as Section 147 as applicable, and therefore project-specific shadow impacts would be analyzed at such a time as a subsequent project is being reviewed by the Planning Department. It is noted that development subsequent to Plan adoption could be proposed and undertaken on parcels not analyzed in this EIR as being the likely location of such subsequent development, and shadow effects of such projects would not have been analyzed herein. As with all subsequent projects, project-specific shadow impacts would be analyzed at such a time as an individual project is proposed.

Shadow effects of the proposed street network changes and open space improvements were evaluated in the Initial Study and determined to result in no significant effect. Accordingly, those project components are not discussed below.

Impact Evaluation

Shadow Impacts on Existing Parks and Open Spaces

Impact SH-1: Development under the Plan would not create new shadow in a manner that substantially affects existing outdoor recreation facilities or other public areas. (Less than Significant)

The discussion below analyzes impacts of the proposed Plan on four City parks (South Park, Victoria Manalo Draves Park, Gene Friend Recreation Center, and Howard-Langton Mini Park), on the Alice Street Community Gardens, which is within the Plan Area but is not subject to *Planning Code* Section 295; and on four open spaces in close proximity to the Plan Area (Yerba Buena Gardens, Yerba Buena Lane, Jessie Square, and Mint Plaza). All of these open spaces are described in the Setting. Shading of the three POPOS mentioned

in the Setting is also discussed, as well as shading of Plan Area sidewalks. Shadow impacts on potential future parks and open spaces that may be created within the Plan Area are described for informational purposes.

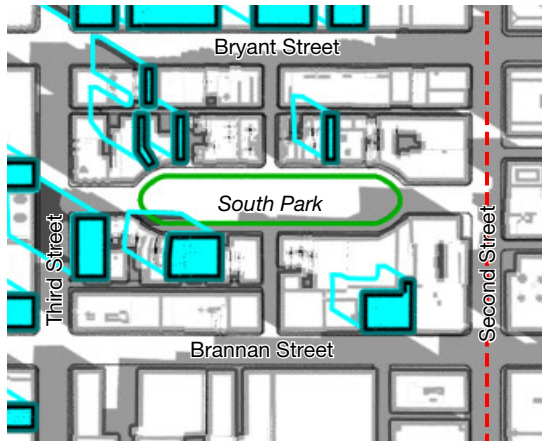
Table IV.H-1, Summary of Plan Shadow on Open Spaces, presents a summary of Plan shadow effects on the open spaces analyzed, both those that are subject to *Planning Code* Section 295 and those that are not. In the table, the time frame presented under the season header (spring/fall equinoxes and summer and winter solstices) denotes the period during which Section 295 regulates solar access. The times shown for the parks and open spaces denote when new shadow, caused by buildings that could be developed under the Plan, would occur.

TABLE IV.H-1 SUMMARY OF PLAN SHADOW ON OPEN SPACES

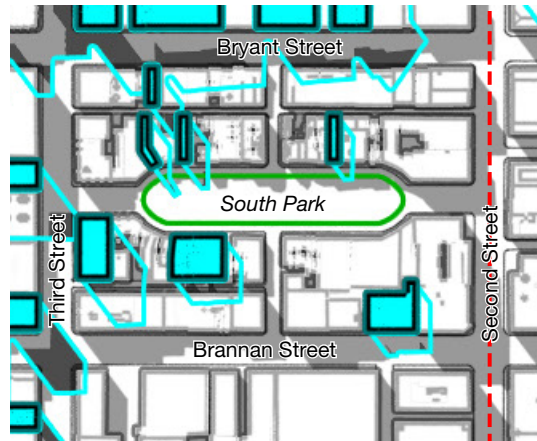
Park/Open Space	Season and Daylight Hours		
	Spring/Fall Equinoxes 7:57 a.m. – 6:09 p.m.	Summer Solstice 6:47 a.m. – 7:36 p.m.	Winter Solstice 8:20 a.m. – 3:54 p.m.
<i>Open Spaces Subject to Section 295</i>			
South Park	9:00–11:00 a.m.(minor new shadow) 6:00-6:09 p.m.(minor new shadow)	8:00 a.m. (minor new shadow) 6:00 – 7:36 p.m. (minor new shadow)	8:20 a.m.–3:54 p.m.(minor new shadow)
Victoria Manalo Draves Park	7:57–8:30 a.m. (minor new shadow)	6:47–7:00 a.m. (minor new shadow)	None
Gene Friend Recreation Center	7:57–9:00 a.m. (moderate new shadow)	6:47–9:00 a.m. (moderate new shadow)	None
Howard-Langton Mini Park	None	None	None
<i>Open Spaces Not Subject to Section 295</i>			
Alice Street Community Gardens	6:00 p.m. (minor new shadow)		11:00 a.m. (minor new shadow) 3:54 p.m. (minor new shadow)
Yerba Buena Gardens:			
Esplanade	None	None	None
East Garden	None	None	None
Howard Street Plaza	None	None	None
Children’s Garden	7:57 – 8:30 a.m. (minor new shadow)	None	11:00 a.m.(minor new shadow)
Yerba Buena Lane	None	None	None
Jessie Square	None	None	None
Mint Plaza	None	None	None

SOURCE: CADP, ESA.

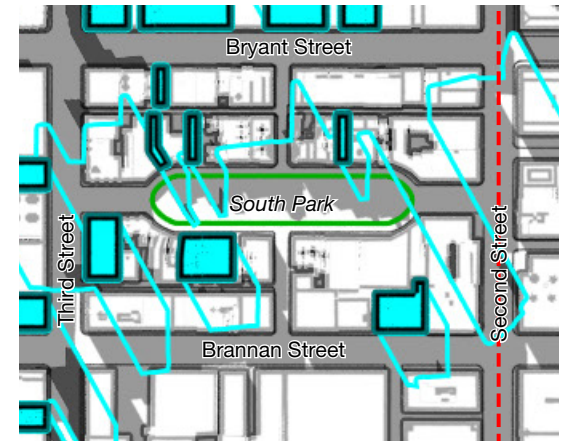
Figure IV.H-11 through **Figure IV.H-22** provide blow-ups of computer-modeled shadow on the parks and open spaces analyzed. Only the times and dates when new Plan-related shadow (i.e., shadow that would be cast by new development projects enabled by the changes to zoning and height limits proposed by the Plan) would be cast on parks and open spaces are included. The full set of model graphics is included in Appendix E.



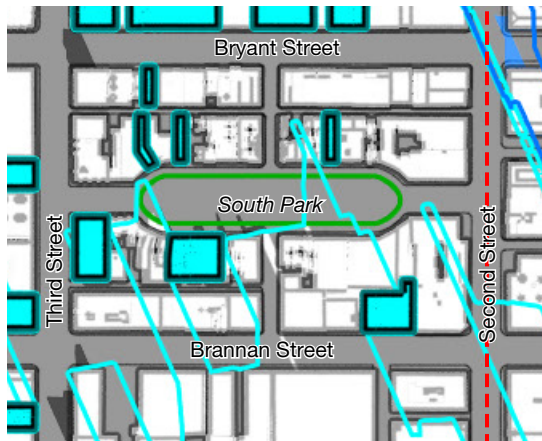
June 21, 8:00 a.m.



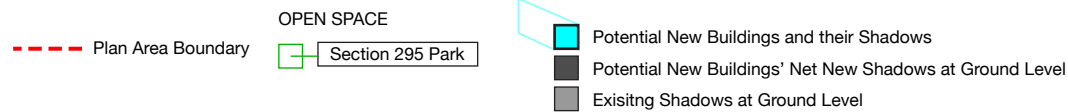
June 21, 6:00 p.m.



June 21, 7:00 p.m.



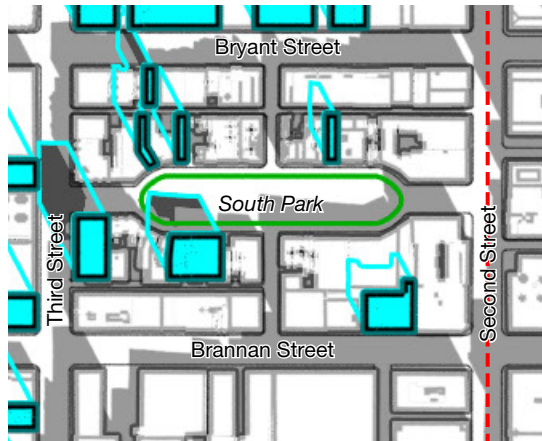
June 21, Sunset -1 hour



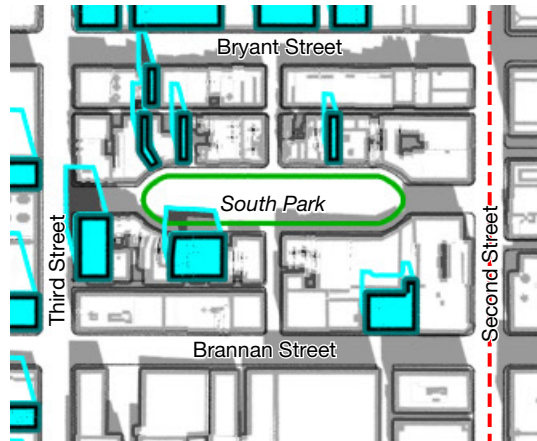
SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

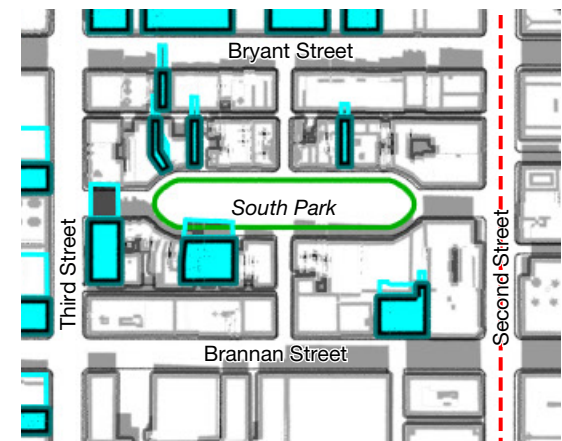
Figure IV.H-11
Shadow from Plan Area Buildings on South Park, June 21 (Summer Solstice)



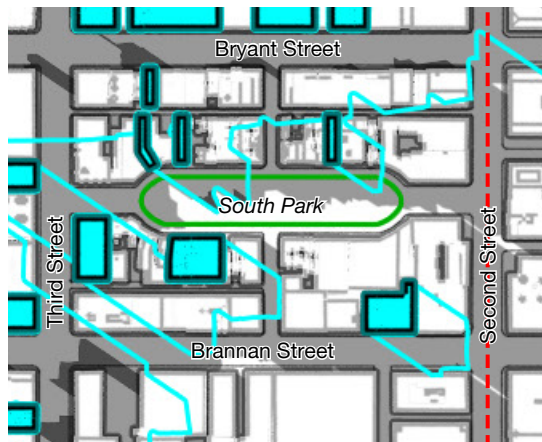
September 20, 9:00 a.m.



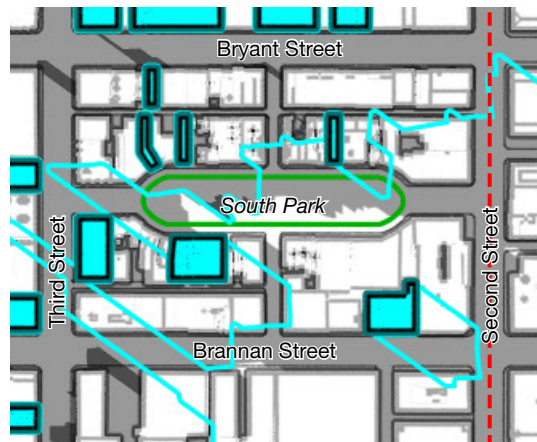
September 20, 10:00 a.m.



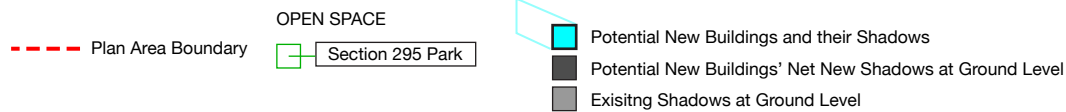
September 20, 11:00 a.m.



September 20, 6:00 p.m.



September 20, Sunset -1 hour

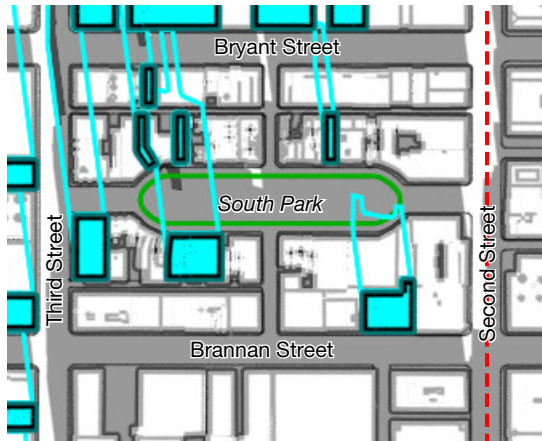


SOURCE: CADP

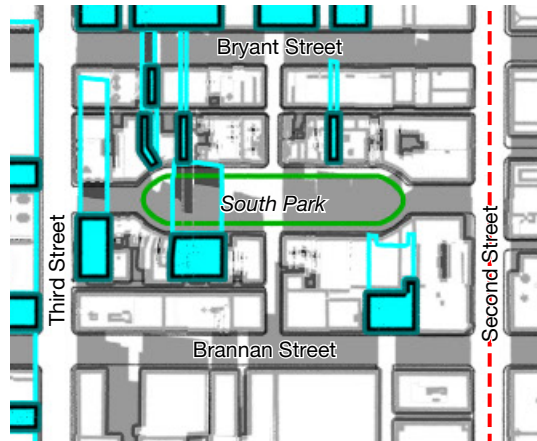
Case No. 2011.1356E: Central SoMa Plan

Figure IV.H-12

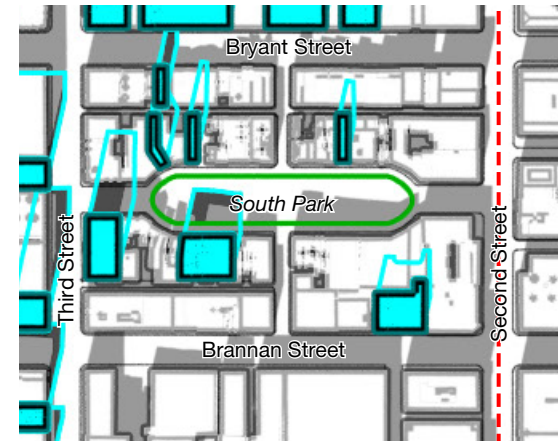
Shadow from Plan Area Buildings on South Park, September 20 (Fall Equinox)



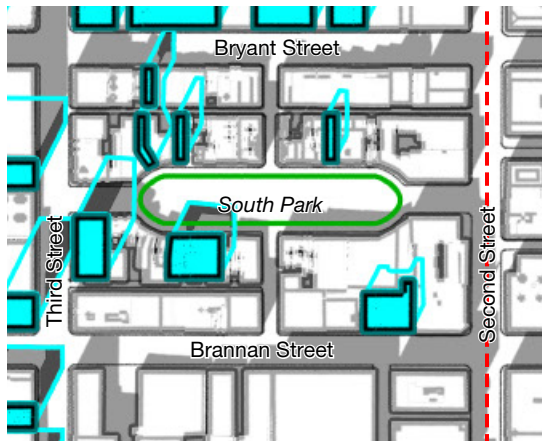
December 20, Sunrise +1 hour



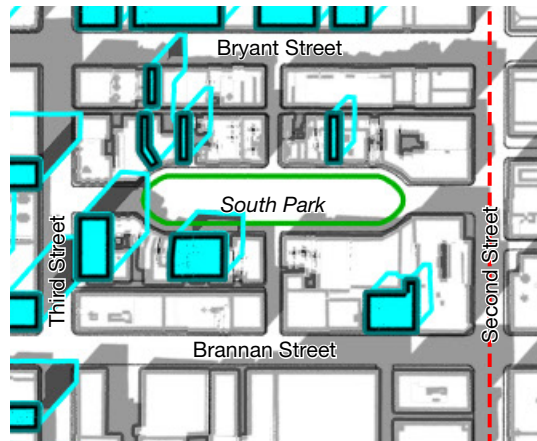
December 20, 9:00 a.m.



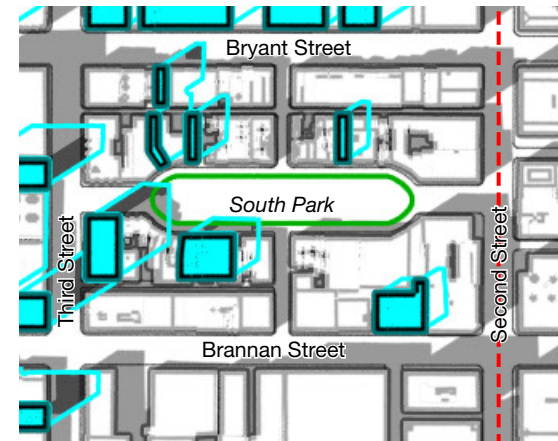
December 20, 10:00 a.m.



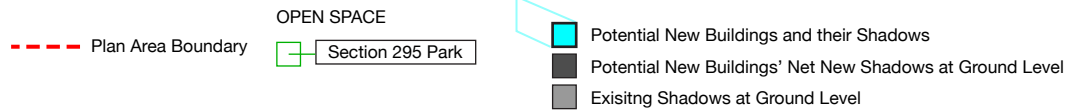
December 20, 11:00 a.m.



December 20, 12:00 noon



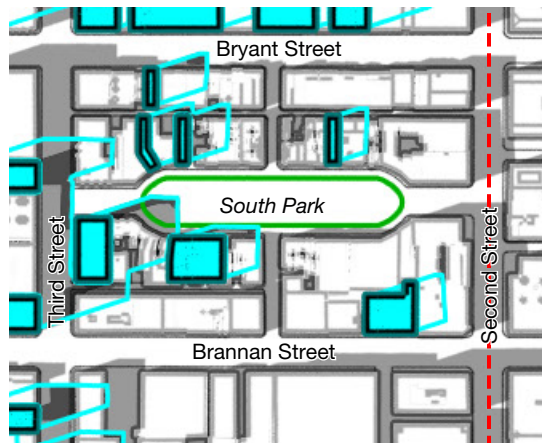
December 20, 1:00 p.m.



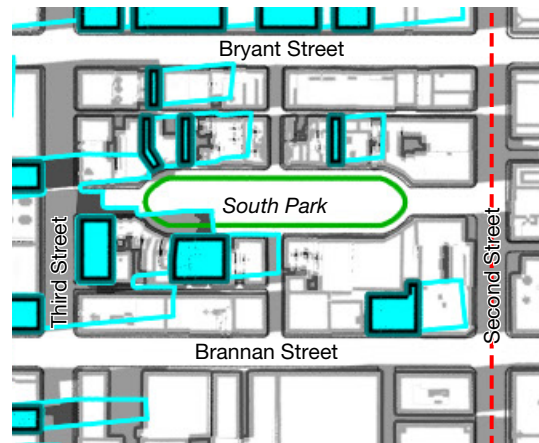
SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

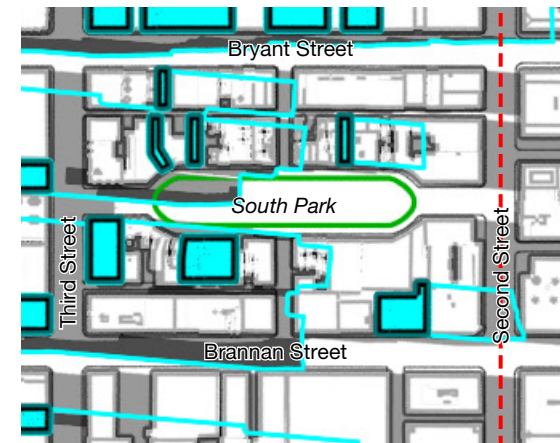
Figure IV.H-13
Shadow from Plan Area Buildings on South Park, December 20 (Winter Solstice)



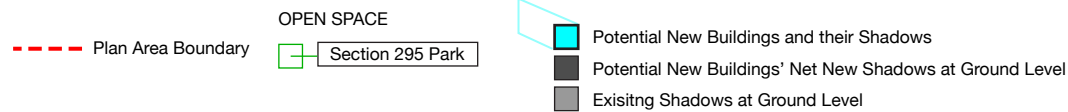
December 20, 2:00 p.m.



December 20, 3:00 p.m.



December 20, Sunset -1 hour

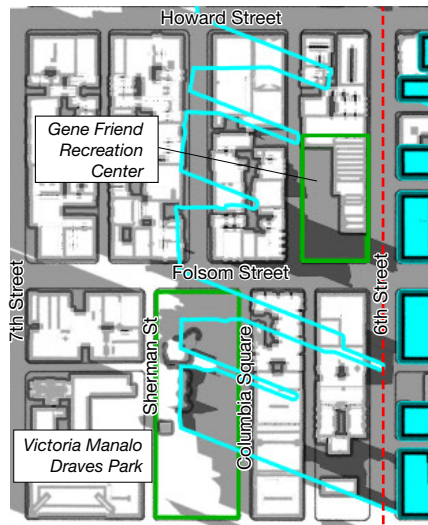


SOURCE: CADP

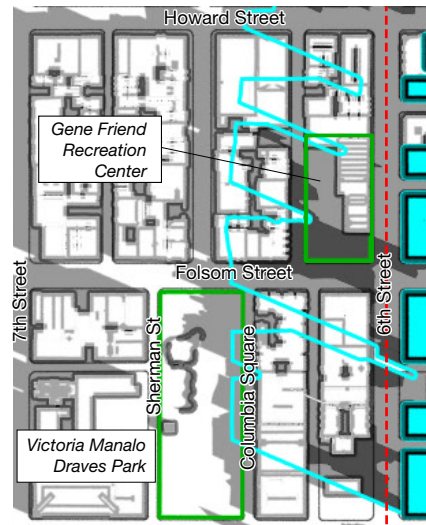
Case No. 2011.1356E: Central SoMa Plan

Figure IV.H-14

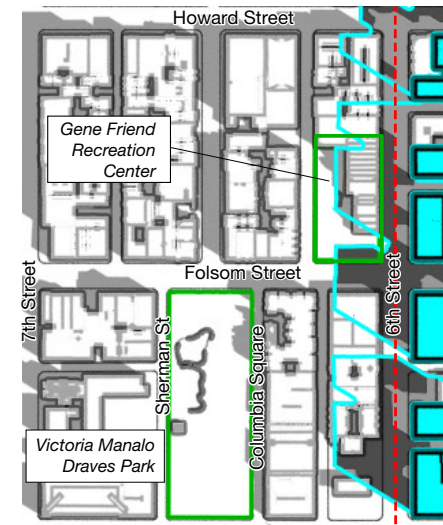
Shadow from Plan Area Buildings on South Park, December 20 (Winter Solstice) (continued)



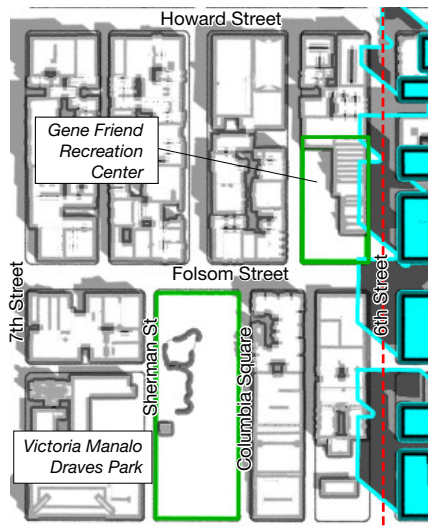
June 21, Sunrise +1 hour



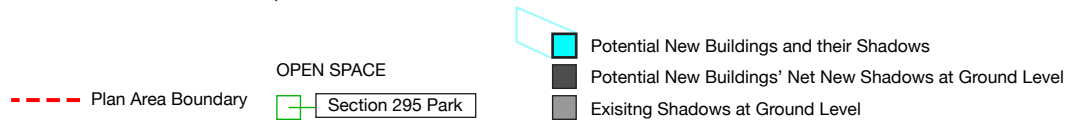
June 21, 7:00 a.m.



June 21, 8:00 a.m.



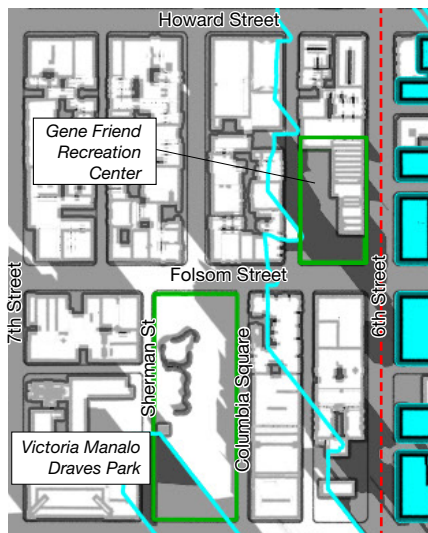
June 21, 9:00 a.m.



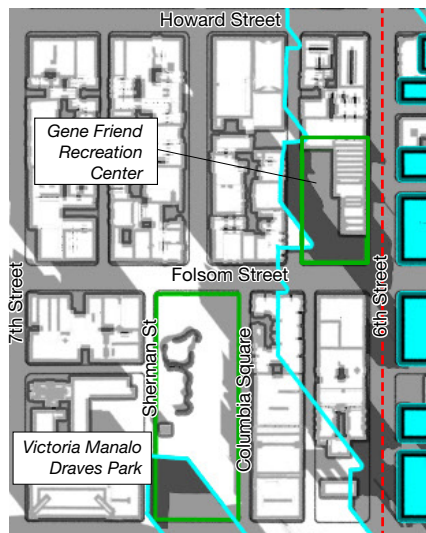
SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

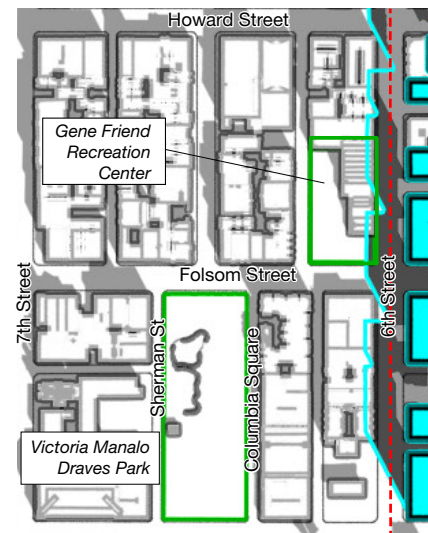
Figure IV.H-15
Shadow from Plan Area Buildings on
Victoria Manalo Draves Park and Gene Friend Recreation Center, June 21 (Summer Solstice)



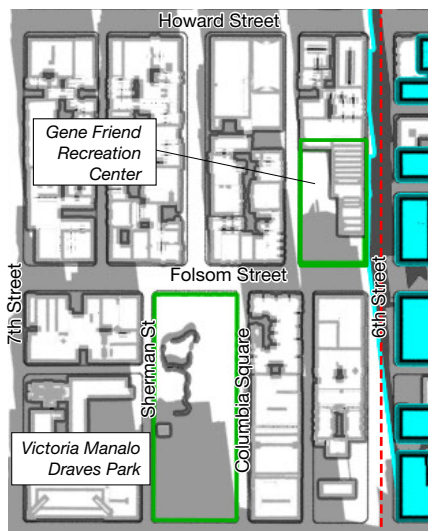
September 20, Sunrise +1 hour



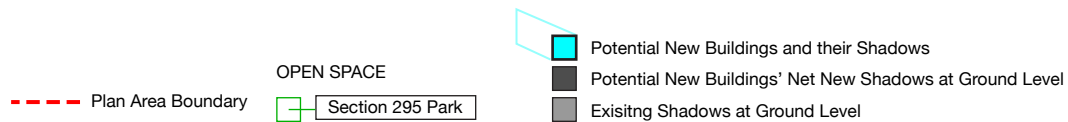
September 20, 8:00 a.m.



September 20, 9:00 a.m.



December 20, Sunrise +1 hour

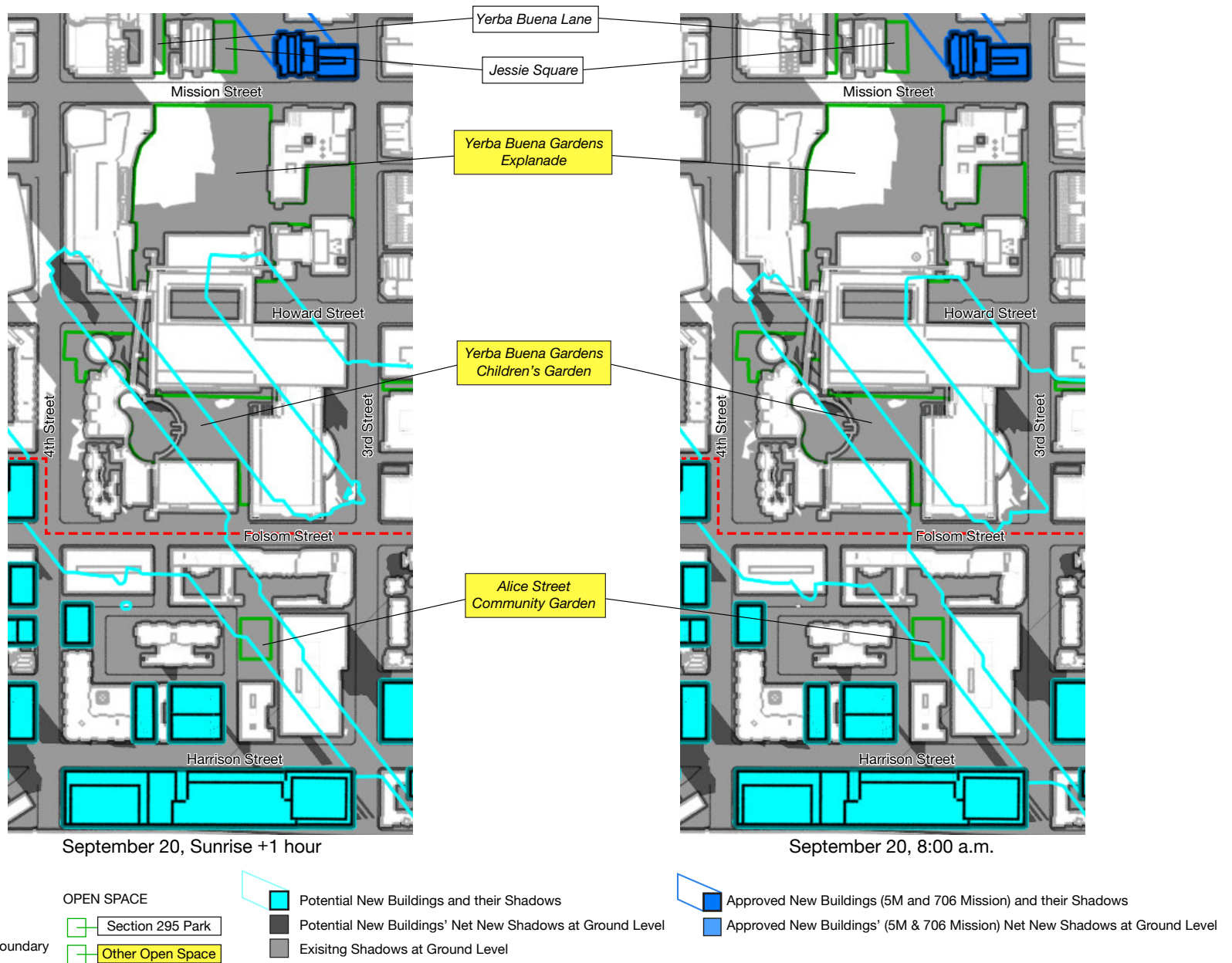


SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

Figure IV.H-16

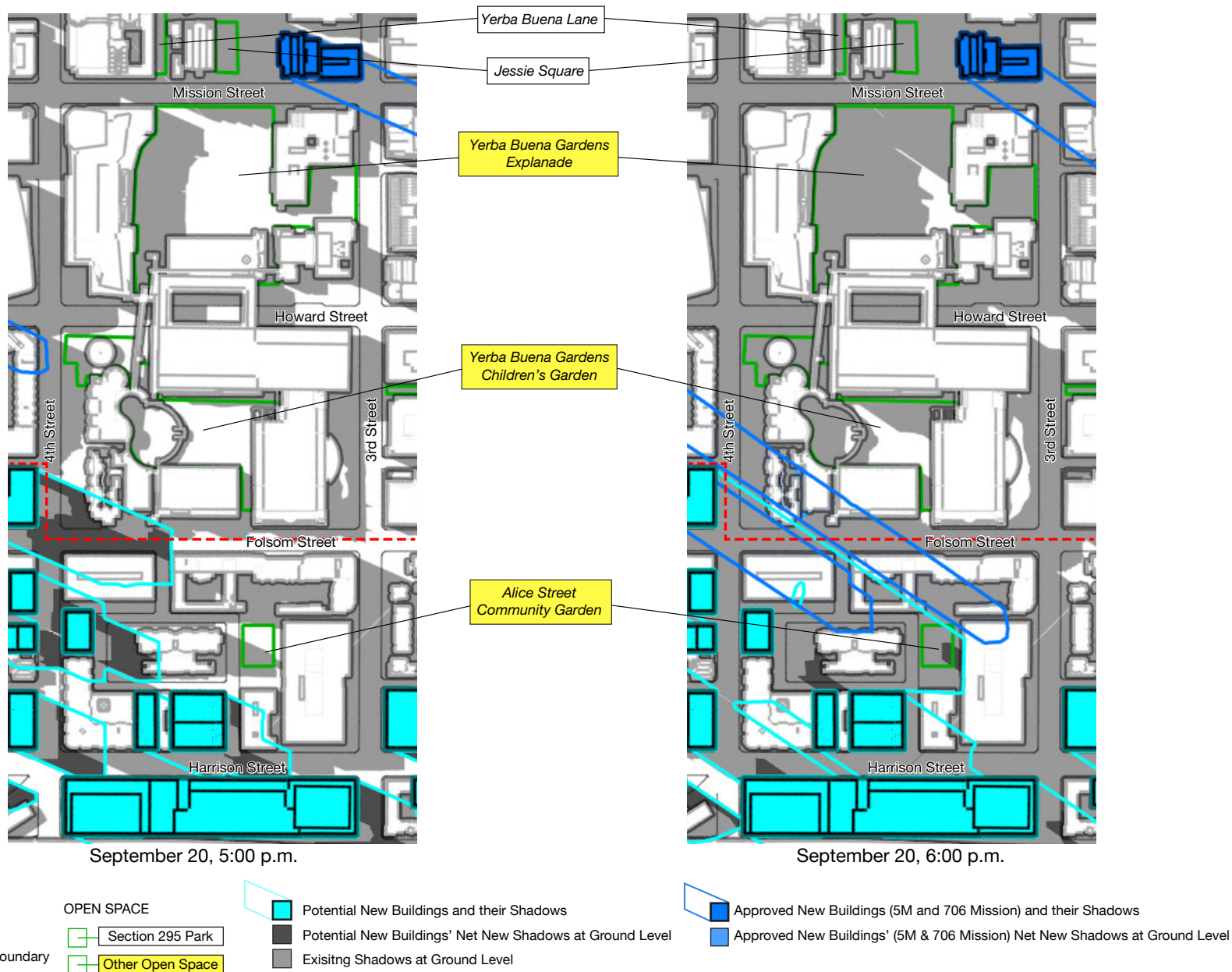
Shadow from Plan Area Buildings on Victoria Manalo Draves Park and Gene Friend Recreation Center, September 20 (Fall Equinox) and December 20 (Winter Solstice)



SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

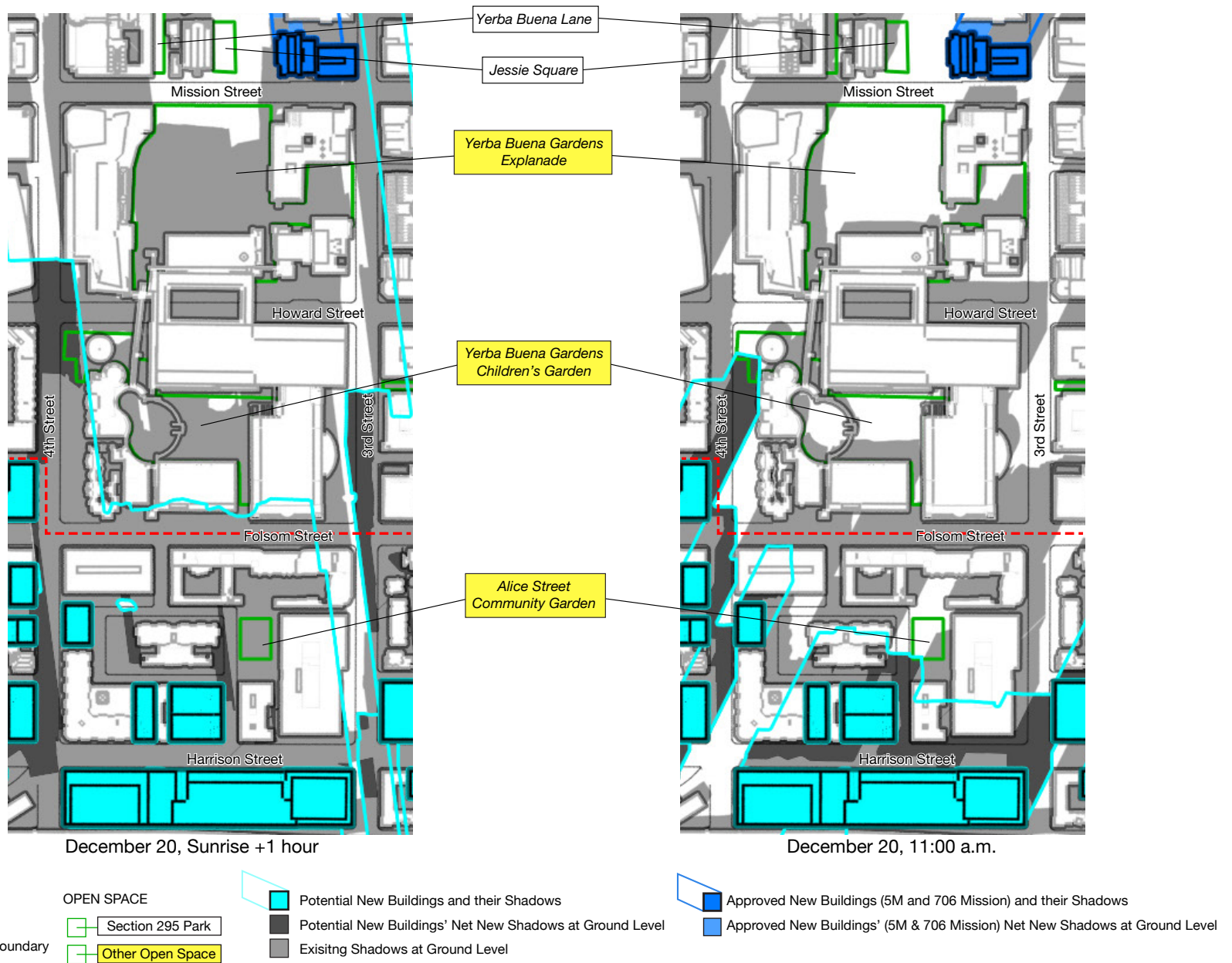
Figure IV.H-17
Shadow from Plan Area Buildings on Yerba Buena Gardens, Alice Street Community Garden, Jessie Square, Yerba Buena Lane, September 20 (Fall Equinox)



SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

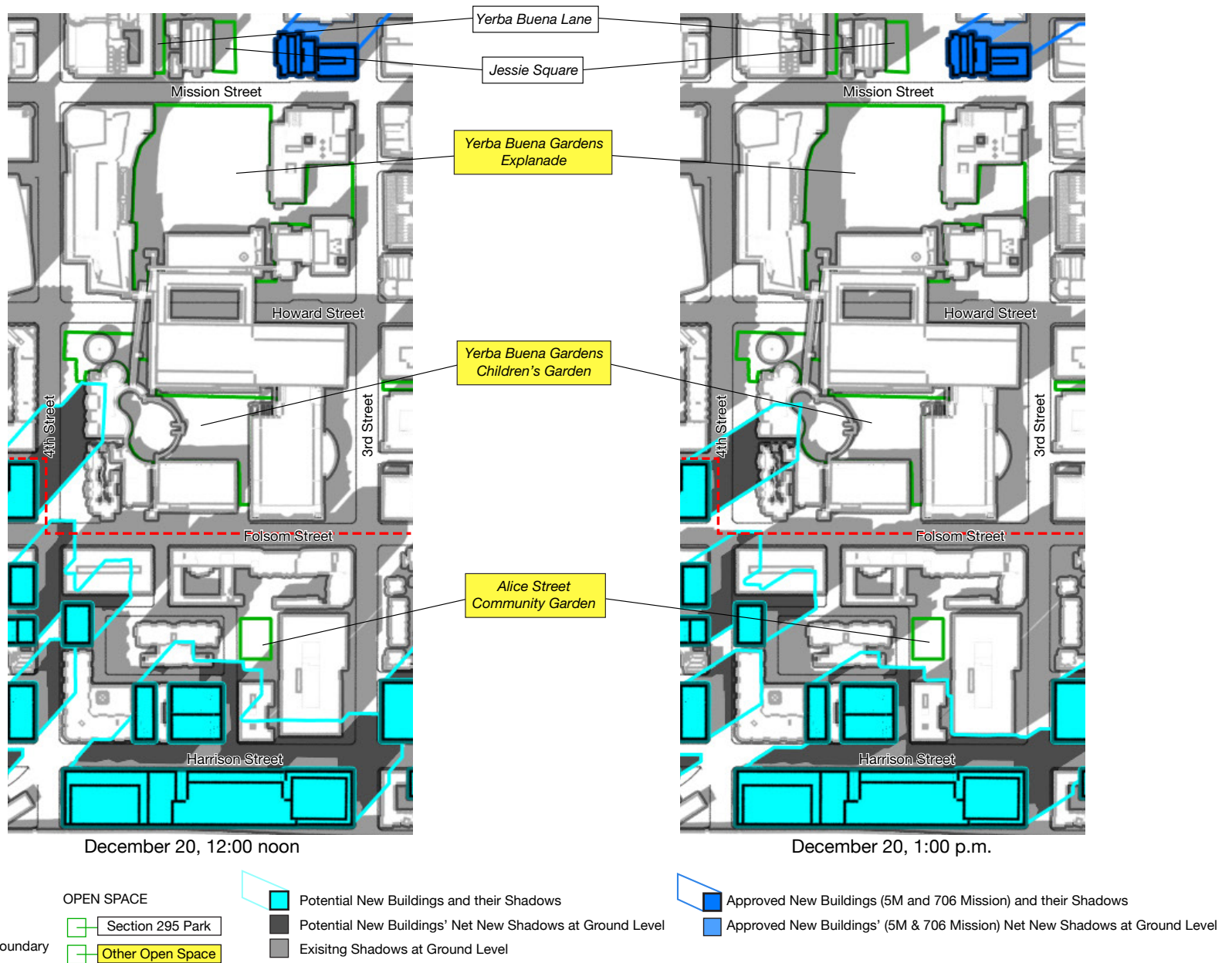
Figure IV.H-18
Shadow from Plan Area Buildings on Yerba Buena Gardens, Alice Street Community Garden, Jessie Square, Yerba Buena Lane, September 20 (Fall Equinox) (continued)



SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

Figure IV.H-19
Shadow from Plan Area Buildings on Yerba Buena Gardens, Alice Street Community Garden, Jessie Square, Yerba Buena Lane, December 20 (Winter Solstice)

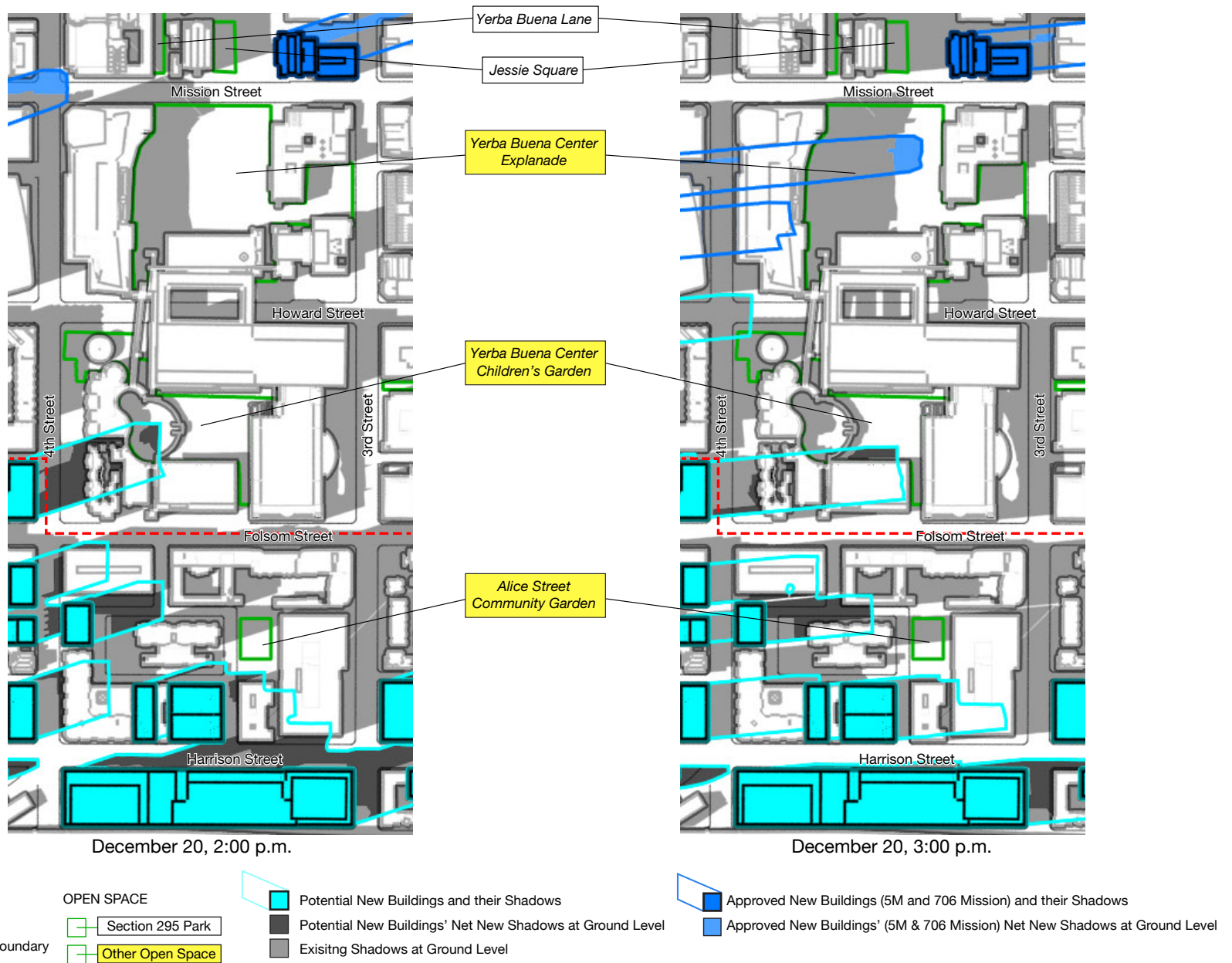


SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

Figure IV.H-20

Shadow from Plan Area Buildings on Yerba Buena Gardens, Alice Street Community Garden, Jessie Square, Yerba Buena Lane, December 20 (Winter Solstice) (continued)

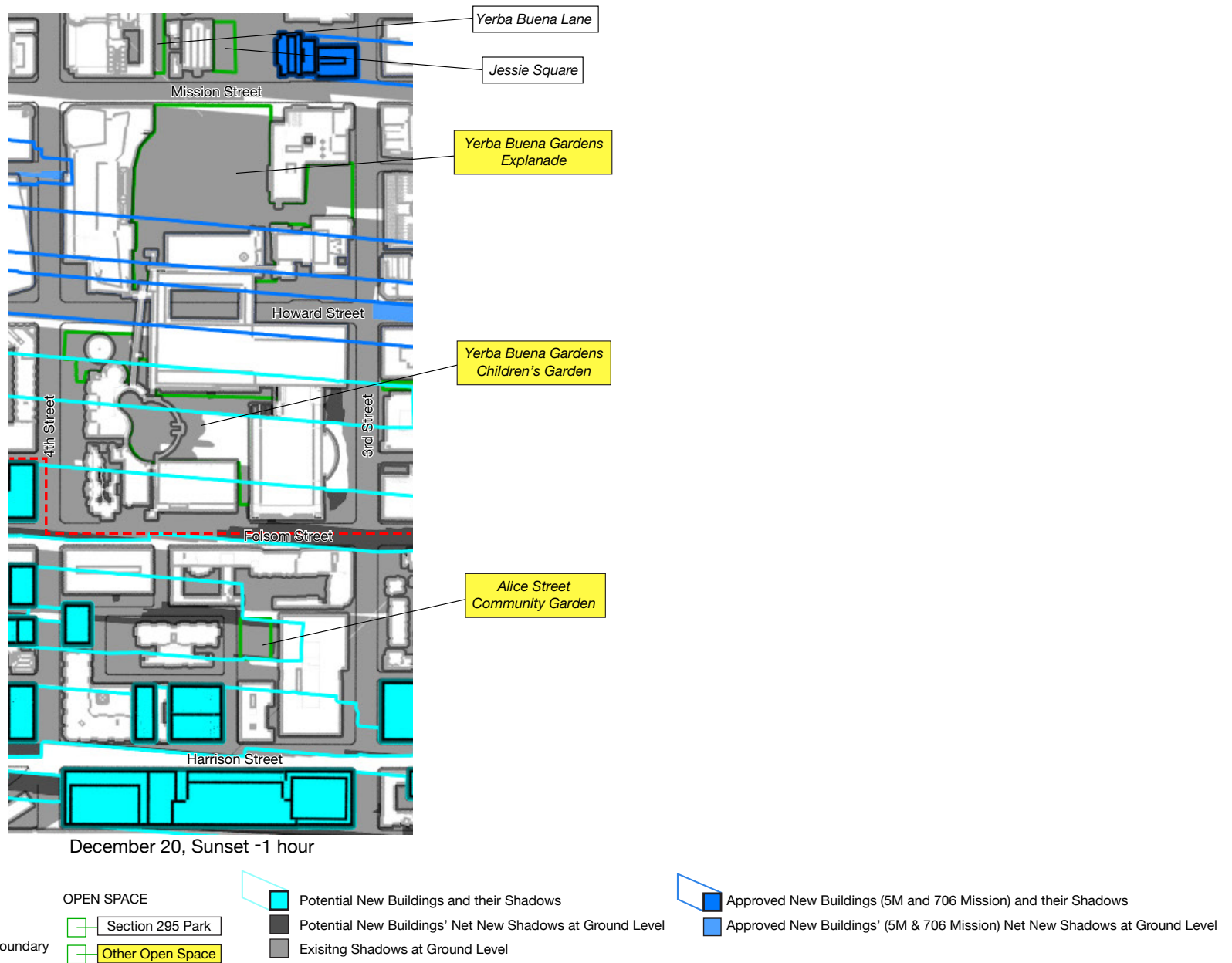


SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

Figure IV.H-21

Shadow from Plan Area Buildings on Yerba Buena Gardens, Alice Street Community Garden, Jessie Square, Yerba Buena Lane, December 20 (Winter Solstice) (continued)



SOURCE: CADP

Case No. 2011.1356E: Central SoMa Plan

Figure IV.H-22
Shadow from Plan Area Buildings on Yerba Buena Gardens, Alice Street Community Garden, Jessie Square, Yerba Buena Lane, December 20 (Winter Solstice) (continued)

Effects on Parks Subject to Section 295

South Park

New, taller buildings developed under the Plan in the vicinity of South Park could increase shadow on portions of South Park during early morning and late afternoon hours from the spring equinox to the fall equinox (March through September). On the Summer Solstice, tiny bits of new shadow could be added to shadow from existing buildings around 8:00 a.m. and in the evening starting around 6:00 p.m. These would be of extremely limited extent, as shown in Figure IV.H-11. On the equinoxes, new shadow could fall on a portion of the western end of the park beginning around 9:00 a.m., disappearing around 11:00 a.m. A very small amount of new shadow may also be added to existing shadow in the early evening on the equinoxes, starting around 6:00 p.m. (Figure IV.H-12). During the seasons of shorter day length and longer mid-day shadows, the Plan could result in an increase in shadow on South Park during most of the day. At the winter solstice, small bits of new shadow could be added to shadow from existing buildings over various parts of the park throughout the day, as shown in Figure IV.H-13 and Figure IV.H-14. All new shadow would be of very limited extent.

During the midday period of heaviest use, new shadow would be of very limited extent at the winter solstice, and would not occur from the spring equinox to the fall equinox. Because of the limited extent of potential new shadow, both in terms of area covered and length of time, and because new shadow would not affect the park during times of heaviest use, new shadow would not be expected to affect people's enjoyment of the park substantially. Because of this, and because Section 295 could function as a means to limit the height of structures that could be developed at some locations where new development could cast shadow on South Park, this impact is *less than significant* for South Park.

Victoria Manalo Draves Park

Victoria Manalo Draves Park is approximately 350 feet west, relative to the street grid, of the Plan Area. At the first Section 295 minute on the summer solstice, when shadows are at their most southerly orientation (i.e., when the sun rises at its most northerly point), a small amount of new shadow would be added to the shadow that existing buildings cast upon the central part of the park (Figure IV.H-15). This new shadow would cover a portion of the grassy knoll in the center of the park and may partially shade portions of the two children's play areas and the northern part of the baseball field. However, because shadows move quickly early in the morning, by 7:00 a.m., less than 15 minutes later, new plan-related shadow would no longer fall on the park. By 8:00 a.m., the park would be mostly in sunshine, except where an existing building shades the northeast corner of the park. Because there is limited usage of the park early in the morning, it is not anticipated that less than 15 minutes of new shadow before 7:00 a.m. on a small area of the park would adversely affect the use of this facility. Plan-related development could also cast a small amount of new shadow on Victoria Manalo Draves Park in the first few Section 295 minutes (the first minutes after one hour following sunrise, or around 8:00 a.m.) around the spring and fall equinoxes (Figure IV.H-16). This new shadow would fall upon the home plate area of the baseball field in the southwestern part of the park, but by 9:00 a.m. the entire park would be in full sun. No new Plan-related shadow would fall on the park at the winter solstice.

Section 295 could limit the height and/or bulk of any new structures at locations that would cause shadow on Victoria Manalo Draves Park, if new shadow from proposed buildings were found by the Planning Commission, on the advice of the Recreation and Park Commission, to affect the park adversely. Because

potential new shadow from Plan-related development would fall on the park for at most only a few minutes in the early morning when the Park is not heavily used, and because of Section 295 protections, the Plan would not be expected to affect use or enjoyment of Victoria Manalo Draves Park substantially, and the impact is *less than significant*.

Gene Friend Recreation Center

Gene Friend Recreation Center is located directly across Sixth Street from the Plan Area. Plan-related development could cast new shadow on the southern portion of the Center, including the open grass area and a portion of the children's play area, up to about 9:00 a.m. on the Summer Solstice and on the equinoxes (Figure IV.H-15 and Figure IV.H-16). On the winter equinox, it is possible that shadow may fall on the Sixth Street frontage of the Center in the first hour of daylight (Figure IV.H-16). Because any new shadow on the outdoor area would occur before 9:00 a.m. when the facility opens to the public, the use and enjoyment of Gene Friend Recreation Center would not likely be substantially or adversely affected by new shading that could occur with development pursuant to the Plan. Furthermore, Section 295 controls could be used to limit or modify development within the Plan Area, in order to reduce shading of the Center. Accordingly, the Plan's potential shadow impact on Gene Friend Recreation Center would be *less than significant*.

Howard-Langton Mini Park

The modeling results indicate that no new shadow from Plan-related development would fall upon the Howard-Langton Mini Park. The Plan would thus have *no impact* on the Howard-Langton Mini Park.

Effects on Open Spaces Not Subject to Section 295

Alice Street Community Gardens

No new shadow would reach the Alice Street Community Gardens at the summer solstice. As shown in Figure IV.H-18, a small amount of new shadow could also be cast on the eastern portion of the gardens late in the afternoon around the spring and fall equinoxes. As shown in Figure IV.H-19 and Figure IV.H-22, a small amount of new shadow would be cast on the gardens around the winter solstice around 11:00 a.m., and again at the end of the day. The effect would be *less than significant* because it would be limited in duration and extent and would not be expected to affect the use or enjoyment of the gardens.

Yerba Buena Gardens

Development in the Plan Area would not cast new shadow on Yerba Buena Gardens at any time during the day on the Summer Solstice. At the equinoxes, there could be a small amount of new shadow cast on a portion of the Children's Garden amphitheater as well as the landscaped area at the corner of Fourth and Howard Streets in the early morning, but this would be gone by 9:00 a.m. (Figure IV.H-17). A small amount of new shadow may also fall on the landscaped corner of Fourth and Folsom Streets around 5:00 p.m. on the equinoxes (Figure IV.H-18). At the winter solstice, small amounts of new shadow may be cast on different areas of Yerba Buena Gardens at different times of day (Figure IV.H-19 through Figure IV.H-22). New shadow may be cast along the western and eastern edges of Yerba Buena Gardens before 9:00 a.m., but these shadows would not fall on the Esplanade, Children's Garden, or East Garden. Later in the day on the winter solstice,

around 11:00 a.m., new shadow would partially cover the Creativity Carousel at the western edge of the Children's Garden. By around noon and continuing until about 3:00 p.m., this shadow would move away from the Carousel and would partially shade the landscaped area at the corner of Fourth and Folsom Streets. During the last hour or so of daylight at the winter solstice, bits of new shadow could be added to existing shadow on the margins of the southern block of Yerba Buena Gardens.

Because new shadow from Plan-related development would only affect small parts of Yerba Buena Gardens for very limited times, mostly in the early morning and evening, the Plan's impact on Yerba Buena Gardens would be *less than significant*.

Mint Plaza, Jessie Square, and Yerba Buena Lane

The computer modeling showed that no new shadow would be cast on Mint Plaza, Jessie Square, or Yerba Buena Lane by development that would be allowed under the Plan. There would therefore be *no impact* of the Plan on these open spaces.

The elevated plazas at the Intercontinental Hotel at Fifth and Howard Streets would not be substantially shaded by Plan Area development because these spaces are elevated several stories and within existing buildings, which generally makes them less sensitive to disruption, such as shading, that would affect a ground-level open space where users are more likely to feel comfortable spending a longer period of time.

Based on the foregoing, none of the above POPOS would be adversely affected by shadow under either option, and the effect would be *less than significant*.

Shadow Impacts on Sidewalks

Where the Plan would include increases to the allowable building heights and/or would create incentives for taller construction up to the proposed and existing height limits, the extent and duration of shadows cast on public sidewalks could increase if and when individual taller buildings are developed, compared to those that currently exist. The effect would likely be most noticeable south of Harrison Street, and particularly south of the I-80 freeway, where the greatest increases in height limits are proposed. The longest shadows are the fastest moving because they occur when the sun is lowest and the angle formed between the sun elevation and the ground is small; a small movement of the sun at these times results in a relatively much larger movement of distant shadow. Therefore, to the extent that the tallest buildings create more distant shadows, these are experienced for a relatively short duration. Moreover, as can be seen in Figure IV.H-2 through Figure IV.H-10, the overall increase in shading of sidewalks in the Plan Area and vicinity would not represent a substantial change, particularly during midday hours when more people are likely to be using sidewalks for leisure activities, as opposed to simply walking to and from work. Therefore, shadow impacts on sidewalks from development in the Plan Area would be *less than significant*.

Publicly Accessible Privately Owned Open Spaces (POPOS)

The 611 Folsom Street POPOS plaza is located just outside the Plan Area, at Folsom and Second Streets. A small amount of new shadow from Plan-related development could fall upon this POPOS around the winter solstice, mid-morning and again in the late afternoon. Because the 611 Folsom Street plaza includes limited amenities in the form of brick benches and five trees, is already substantially shaded, and functions to some

extent as a widened sidewalk, and because net Plan shadow would occur at very limited times of the day and year, shadow associated with Plan implementation would not be expected to substantially affect the use or enjoyment of this POPOS.

New shadow from Plan Area development could cast a small amount of new shadow on the western edge of the POPOS in front of 303 Second Street, across Second Street from the Plan Area, in the mid-afternoon on the summer solstice. On the equinoxes, new shading would begin around noon, and would continue through much of the afternoon, reaching a peak around 2:00 p.m., when about one quarter to one third of the POPOS could be shaded. On the winter solstice, new shading could increase, beginning around 10 a.m. and continuing through most of the afternoon. At its peak, new shading could cover most of the plaza, especially between about noon and 2:00 p.m. By 3:00 p.m. on the winter solstice, most of the plaza is currently shaded. The actual amount of shading would depend on the height and massing of the building projecting its shadow toward this POPOS.

This plaza is one of the most heavily used POPOS in SoMa because of its seating, landscaping, and fountain and due to the presence of restaurants in the adjacent office building that face the plaza. Use of this open space is particularly heavy at lunchtime, when the plaza would remain largely in sunshine except in late fall and early winter. Because the plaza would remain largely sunny at lunchtime except in late fall and early winter, this POPOS would be anticipated to remain heavily used.

Publicly-accessible plazas at the Courtyard by Marriott hotel at Second and Folsom Streets could receive a very small amount of new shadow around 10:00 a.m. on the winter solstice, while an outdoor plaza at 235 Second Street would not receive any additional shadow from Plan-related development. New Plan shadow would not affect the use or enjoyment of these POPOS because of the limited time that this shadow would occur.

Conclusion

Based on the foregoing analysis, development pursuant to the Plan would not create new shadow in a manner that substantially affects the use of existing outdoor recreation facilities or other public areas. Additionally, the specific massing and design of a subsequent development project would be reviewed to determine whether the project could have shadow impacts not identified at this programmatic level of analysis. Therefore, the impact would be *less than significant*.

Mitigation: None required.

Shadow on Plan-Proposed Open Spaces

As described in Chapter II, Project Description, the Plan identifies a potential new neighborhood park on the block bounded by Bryant, Fourth, Brannan, and Fifth Streets. Other proposed open space improvements under the Plan include creation of a new linear open space on a portion of the Bluxome Street right-of-way, between Fourth and Fifth Streets; conversion of several mid-block alleys into rights-of-way shared by pedestrians, bicycles, and motor vehicles, including portions of Annie Street, Jessie Street outside the Plan Area (west of Fourth Street, where Jessie meets Mission Street); and creation of one expanded and one new pedestrian plaza at either end of Annie Street, with an intersecting dog run on Ambrose Bierce (Aldrich) Alley (both outside the Plan Area). In addition, the project proposes the conversion of Lapu Lapu Street, adjacent to

the Alice Street Community Gardens, to a small park or otherwise enhancing this street as partial open space. The design and configuration of these potential new open spaces is not known, nor is any potential future programming of these spaces, and it would therefore be speculative to assess how shadow would affect these open spaces. However, potential shadow that could be cast on these open spaces is discussed below for informational purposes.³⁴²

With respect to the Plan's proposed park on the block bounded by Bryant, Fourth, Brannan, and Fifth Streets, as of March 2016, the project sponsor of the proposed mixed-use project at 598 Brannan Street has filed an application with the Planning Department to develop this area as a publicly accessible mid-block park.³⁴³ Under this proposal, the mid-block park would likely be owned by the City but maintained by the property owner; however, the park would not be under Recreation and Park Commission jurisdiction and thus not subject to Section 295.³⁴⁴ The proposed park would be connected via mid-block pedestrian passages to Bryant, Brannan, and Fifth Streets, and Welsh and Freelon Streets would provide additional pedestrian access to Fourth and Fifth Streets.

This potential new park would be partially shaded by Plan Area development throughout the year. On the summer solstice, this location would be mostly in sunlight during much of the day (between about 9:00 a.m. and 3:00 p.m.), with substantial sunlight even at 8:00 a.m. and as late at 4:00 p.m.;³⁴⁵ after that time, shadows from development at newly increased height limits would cover an increasing portion of the park until, by 6:00 p.m., when it would be nearly fully shaded. At the spring/fall equinox, there would be substantial sunlight during the midday (10:00 a.m. to 2:00 p.m.), with partial sunlight until shortly after 3:00 p.m. At 9:00 a.m., new shadow could be cast on the park, while between 3:00 p.m. and 6:00 p.m., substantial new shadow from Plan-related development could shadow the potential new park. Very early in the morning (before about 8:30 a.m.) and in the early evening (from 6:00 p.m. on), the potential park would be largely shaded by existing buildings. On the winter solstice, the park site would be at least partially shaded, mostly by development at new height limits, throughout the day, with the greatest effect of the increased height limits occurring after 10:00 a.m. Until about 9:00 a.m. and after 3:00 p.m., the potential park would be substantially shaded by existing buildings. However, even on the winter solstice, nearly half of the park would be in sunlight during the noon hour.

To the extent that any open space improvements, on this new park site or elsewhere, were to include ancillary structures, such as restrooms or play structures, that would cast shadow on open space(s), it is presumed that design of such features would ensure that shadow effects are minimal and that the ancillary features would provide an additional benefit to the open space users and would not affect use or enjoyment of the park or open space.

³⁴² It is noted that, under *California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal.4th 369, Opinion Filed December 17, 2015, effects of the environment on a project need not be analyzed under CEQA; thus, potential effects of shading by existing buildings on a proposed new open space is not an impact under CEQA.

³⁴³ Case No. 2012.0640, 598 Brannan Street; Section 295 Shadow Study Application, March 11, 2016, "Revised Project Description," undated, and plans dated September 29, 2015. Available at <http://propertymap.sfplanning.org/>, accessed July 15, 2016.

³⁴⁴ To facilitate the development of this project, an exchange of property would occur such that a portion of the development would occur on what is now SFPUC property.

³⁴⁵ Before 8:00 a.m., the park would be largely shaded by existing buildings.

New development, unless it were abutting a street or mid-block alley, would have little or no effect on linear open spaces or shared rights-of-way, because existing buildings would typically cast shadow on such streets. Bluxome Street, which, at 50 feet, is wider than most mid-block streets in the Plan Area and is lined by a number of one- and two-story buildings, would experience more new shadow from Plan Area development than would most mid-block streets where open space improvements are proposed. Other linear open spaces could be affected when shadows are at the angle in line with the park, although such instances would occur for only a few minutes at a time. These shadows would be relatively fast-moving and would cover only small areas at any given time, also use of such open spaces would not typically involve active recreation or activities that—unlike in a traditional park—would be those for which users anticipate exposure to full sunlight.

IV.H.5 Cumulative Impacts

Impact C-SH-1: Implementation of the Plan, in combination with past, present and reasonably foreseeable future projects in the vicinity, would not contribute considerably to a significant cumulative impact on shadow conditions. (Less than Significant)

Cumulative Projects Analyzed for Shadow Impacts

Of the reasonably foreseeable in the vicinity of the Plan Area, three are in close enough proximity to suggest that their shadow effects on open spaces could combine with shadow effects of Plan-related development in a cumulative manner. These projects are the Moscone Center Expansion Project, currently under construction; the 706 Mission Street project, also under construction; and the approved 5M project.

The Moscone Center Expansion project will add 300,000 gross square feet to the Moscone Center convention facility. New construction will be primarily above grade, at a height of up to 95 feet, while additional space will be created by expanding the existing below-grade exhibition halls. The Moscone Center Expansion Project will not cast new shadow on any parks subject to *Planning Code* Section 295, but will add additional shadow to Yerba Buena Gardens, including the Children’s Garden on the Moscone Center south block.

The 706 Mission Street project will develop a 47-story, 550-foot-tall tower that will accommodate the Mexican Museum and associated public uses on its first three floors and provide up to 215 dwelling units. The project will also renovate the existing Aronson Building on the northwest corner of Third and Mission Streets. The 706 Mission Street project will cast new shadow on Union Square, a Section 295 park, as well as on Jessie Square and Yerba Buena Lane. However, Plan-related development would not cast new shadow on these open spaces, and therefore there is no potential for a cumulative impact involving the 706 Mission Street project.

The approved 5M project, a 1.8-million-square-foot mixed-use development on a four-acre site at 925 Mission Street and adjacent parcels, would add new shadow to Boeddeker Park, north of Market Street, but Plan-related development would not. The 5M project will, however, cast new shadow on Yerba Buena Gardens.

Cumulative shadow impacts of the Moscone Center Expansion and the 5M project the proposed Plan are discussed below, in the order in which the open spaces were discussed for Plan-specific impacts.

Cumulative Shadow Effects on Other Open Spaces

Yerba Buena Gardens

The approved and under-construction Moscone Center Expansion project will add new shadow to various locations of Yerba Buena Gardens at different times of the day and the year. The Moscone Center expansion will add new shadow to the Esplanade primarily during the early morning hours; shadow will then decrease throughout the day until by mid- to late-afternoon. Net new shadow will be most prevalent from the first Section 295 minute until about 9:00 a.m., in the late fall and early winter months, when the shadow will fall on the central, grassy portion of the Esplanade, effectively leaving only the portion of the Esplanade adjacent to Mission Street unshaded. The Moscone Center Expansion project will also add new shadow to the East Garden (late fall and early winter, during the first Section 295 hour). The Moscone expansion will newly shade the Howard Street Plaza in the mid- to late afternoon in late spring and early summer months (cast by the Moscone North building) and to a greater extent in the morning during the rest of the year (cast by the Moscone South building). The Moscone Center Expansion project will add new shadow to the Children's Garden throughout the year and throughout the day, although to only a minimal extent until mid-afternoon hours. In late spring and early summer months, shadow will have the greatest potential effect, given that it will fall on the open space from the mid-afternoon (about 3:00 p.m.) through the last Section 295 minute; however, the majority of the garden will remain unshaded until approximately 7:00 p.m., when the play circle officially closes. The Moscone Center project will also modify some of the features in the Children's Garden, adding a tot lot, relocating and expanding the existing Learning Garden, adding an elevated social seating area, and altering certain other features.³⁴⁶ The Final EIR for the Moscone Center Expansion Project determined that shadow effects of that project would be less than significant, and the Planning Commission, in certifying the FEIR, concurred in that determination.³⁴⁷

The approved 5M Project would also cast new shadow on the Yerba Buena Center Children's Garden, although to a much lesser degree (one twenty-fifth as much net new shadow, measured in shadow-foot hours of shadow coverage annually) as would the Moscone Center Expansion project. This shadow would occur in the late afternoon around the winter solstice, and the impact was determined to be less than significant.³⁴⁸

As discussed above under Plan impacts, Plan-related development will add very little new shadow to Yerba Buena Gardens. It would add no new shadow to the Esplanade or East Garden, and would add only a small amount of new shadow, for brief periods of time, to small areas of the Children's Garden.

Together, the Moscone Center Expansion Project, the 5M Project, and potential Plan Area development would increase shadow on Yerba Buena Gardens, including the Children's Garden on top of Moscone Center South. However, Yerba Buena Gardens would continue to receive substantial sunlight, particularly during the midday hours. Given the varied uses of Yerba Buena Gardens and the relatively limited new shadow that would result from the combination of projects and Plan Area development, cumulative new shadow would not be expected to substantially affect the use and enjoyment of Yerba Buena Gardens, and the cumulative

³⁴⁶ San Francisco Planning Department, *Moscone Center Expansion Project Final EIR* (Case No. 2013.0154E), Final EIR certified August 14, 2014, pp. IV.B-14 – 19.

³⁴⁷ Planning Commission Motion No. 19219, adopted August 14, 2014.

³⁴⁸ Planning Commission Motion No. 19459, adopted September 17, 2015.

effect would be *less than significant*. Therefore, Plan shadow would not combine with cumulative development to result in significant cumulative shadow impacts on Yerba Buena Gardens.

Conclusion

Based on the above analysis of effects of the proposed Plan, the proposed Plan's contribution to cumulative shadow impacts is judged to not be considerable, and therefore the cumulative shadow impact would be *less than significant*.

Mitigation: None required.

IV.I Hydrology (Sea Level Rise and Combined Sewer System)

IV.I.1 Introduction

This section describes the potential effects of the Central SoMa Plan (the Plan) on the existing hydrology and water quality in the Plan Area, with a focus on the potential for flooding impacts as a result of sea level rise and changes in stormwater and wastewater flows.

The impact evaluation in the Hydrology and Water Quality Section of the Initial Study (see Appendix B) explains why the proposed project would not result in significant impacts on hydrology and water quality with respect to construction-related discharges of stormwater; discharges of groundwater during dewatering; depletion of groundwater and interference with groundwater recharge; alteration of drainage patterns; exceedance of the capacity of the stormwater drainage system and providing an additional source of stormwater pollutants; placement of housing within an existing 100-year flood zone; placement of structures within an existing 100-year flood zone; flooding as a result of failure of a levee or dam; and inundation by seiche, tsunami, or mudflow.

Project effects on the capacity of the wastewater and stormwater system are addressed in Section D.11, Utilities and Service Systems, of the Initial Study (Appendix B).

IV.I.2 Environmental Setting

Combined Sewer System

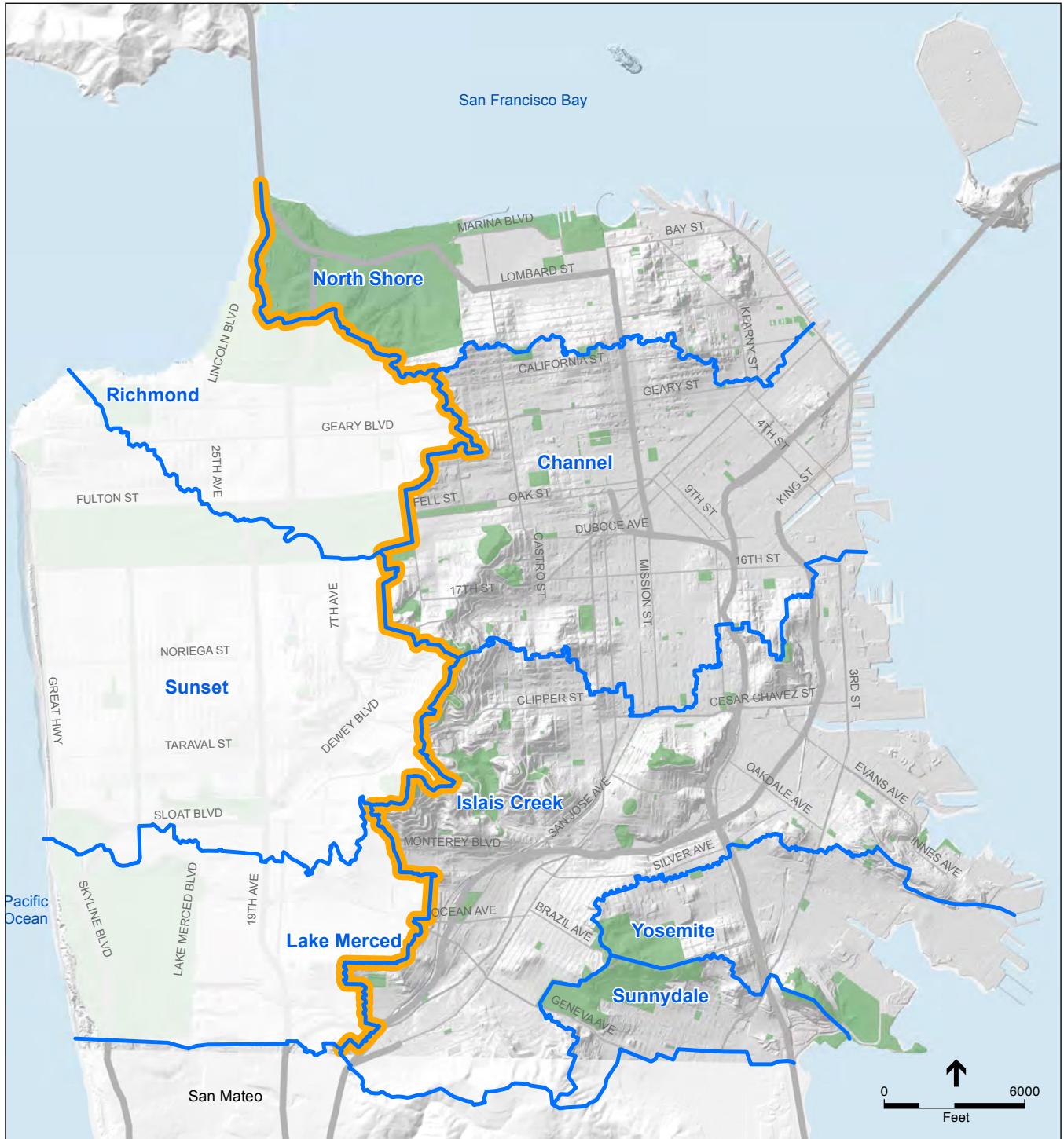
Drainage Basins

San Francisco comprises two drainage basins: the Westside Drainage Basin that drains to the Pacific Ocean, and the Bayside Drainage Basin that includes the Plan Area and drains to the Bay. Freshwater flow to San Francisco Bay from the city, including all of the Plan Area, has been almost entirely diverted to the City's combined sewer system, which collects and transports both sanitary sewage and stormwater runoff in the same set of pipes. This combined sewer system is operated by the San Francisco Public Utilities Commission (SFPUC).

The Bayside Drainage Basin is divided into five distinct urban watersheds:³⁴⁹ North Shore, Channel, Islais Creek, Yosemite, and Sunnysdale as shown on **Figure IV.I-1, Watersheds of the Bayside Drainage Basin**.³⁵⁰ The entire Plan Area and street network changes are located within the Channel urban watershed. With an area of

³⁴⁹ A watershed is defined as the area of land that drains to a "receiving water body" such as a river, lake or ocean. In San Francisco's urban watersheds, rain runs off hardscapes (such as streets, rooftops, sidewalks, and parking areas), flowing through catch basins, sewers, and treatment plants before being discharged to the bay or ocean.

³⁵⁰ San Francisco Public Utilities Commission (SFPUC), "Bayside Drainage Basin Urban Watershed Characterization," Final Draft Technical Memorandum, July 2013. Available at <http://sfwater.org/modules/showdocument.aspx?documentid=4147>, accessed 7/11/15.



SOURCE: Bayside Basin-San Francisco Public Utilities Commission, 2013

Case No. 2011.1356E: Central SoMa Plan

Figure IV.I-1
Watersheds of the Bayside Drainage Basin

5,665 acres, Channel is the largest urban watershed in the Bayside Drainage Basin.³⁵¹ Historically, the main drainage ways in Channel were Hayes, Mission and Arroyo Dolores Creeks, which all flowed to Mission Bay. Today, impervious surfaces comprise approximately 83 percent of the land cover in this watershed and the main sewer trunk lines follow the historical paths of the creeks. The combined sewer system collects about 95 percent of the stormwater drainage from the Channel urban watershed and stormwater from the remaining five percent of the area (Mission Bay and Port property) is served by separate stormwater systems that drain stormwater directly into the Bay.

Wastewater and Stormwater Flows

Wastewater flows in the Bayside Drainage Basin are transported to the Southeast Water Pollution Control Plant, or the “Southeast Treatment Plant” (SEP), located in the Bayview District. The SEP has the capacity to treat up to 150 million gallons per day (mgd) of wastewater to a secondary level.³⁵² During dry weather, wastewater flows consist mainly of municipal and industrial sanitary sewage and wastewater, and the annual average wastewater flow during dry weather is approximately 60 mgd.³⁵³ The average dry weather design flow capacity of the SEP is 84.5 mgd; therefore the existing flows are about 70 percent of the treatment capacity and all dry weather wastewater flow is treated to a secondary level. The treated wastewater is then discharged to the bay through the deep water outfall at Pier 80, located immediately to the north of the Islais Creek Channel.³⁵⁴

During wet weather (generally October through April), the combined sewer collects and treats large volumes of stormwater runoff in addition to the wastewater consisting of municipal and industrial sewage. Depending on the amount of rainfall, these wet weather flows are treated to varying levels before discharge to the bay. Up to 150 mgd of wet weather flows receive secondary treatment at the SEP. The SEP can also treat up to an additional 100 mgd to a primary treatment standard plus disinfection. Treated wet weather discharges of up to 250 mgd from the SEP occur through the Pier 80 outfall to the bay or through the Quint Street outfall to Islais Creek Channel on the south bank of Islais Creek. Only wastewater treated to a secondary level is discharged at the Quint Street outfall.

Up to an additional 150 mgd of wet weather flows receive primary treatment plus disinfection at the North Point Wet Weather Facility, which is located in the northeast portion of the city and operates only during wet weather. Treatment at the North Point Wet Weather Facility consists of using bar screens to remove large

³⁵¹ SFPUC, “Bayside Drainage Basin Urban Watershed Characterization,” July 2013.

³⁵² Secondary treatment is the treatment of wastewater or sewage involving removal of organic matter using biological and chemical processes. This is a higher level of treatment than primary treatment, which is removal of floating and settleable solids using physical operations such as screening and sedimentation. Secondary treatment is less intensive than tertiary treatment, in which additional chemical and biological treatment processes are used to remove additional compounds that may be required for discharge or reuse purposes.

³⁵³ San Francisco Public Utilities Commission, *San Francisco’s Wastewater Treatment Facilities*, June 2014. Available at <http://sfwater.org/modules/showdocument.aspx?documentid=5801>, accessed 7/11/15. Daily wastewater flows have declined by about 10 percent over the last decade due to declining water use, from an average of about 63 mgd during the mid-2000s to about 57 mgd in 2015 (SFPUC website, <http://sfwater.org/index.aspx?page=616>, and SFPUC, Sewer System Master Plan Summary Rpt. Final Draft, Ch. 2, http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=5&cad=rja&uact=8&ved=0CDYQFjAE&url=http%3A%2F%2Fsfwater.org%2Fmodules%2Fshowdocument.aspx%3Fdocumentid%3D613&ei=J4ShVef5KtKwogS8g4X4BQ&usq=AFQjCNEmntwMlk6yo_wNrDEG_HQYAtBHnA).

³⁵⁴ SFPUC, “Bayside Drainage Basin Urban Watershed Characterization,” July 2013.

objects such as garbage; sedimentation to allow solids to settle out; skimming to remove floatables; disinfection with sodium hypochlorite; and dechlorination using sodium bisulfite to remove any chlorine residual before discharge. Treated effluent from this facility is discharged through four deep water outfalls, approximately 800 feet from the Bayshore and 18 feet below mean lower low water. Two of the deep water outfalls terminate at the end of Pier 33, and two terminate at the end of Pier 35 on the northeastern bayshore.

The combined sewer system includes underground concrete storage and transport boxes which, during wet weather, temporarily retain the stormwater and sewage flows that exceed the combined 400 mgd capacity of the SEP and North Point Wet Weather Facility for later treatment. When rainfall intensity results in flows that exceed the total capacity of the SEP, the North Point Wet Weather Facility, and the 126-million-gallon capacity of the storage and transport boxes, the excess flows are discharged through 29 combined sewer discharge (CSD) structures located along the city's bayside waterfront from the Marina Green to Candlestick Point. Discharges from these structures to San Francisco Bay (known as "combined sewer discharge events" or "CSD events") receive "flow-through treatment" to remove settleable solids and floatable materials, which is similar to primary treatment.

In a typical year, approximately 1.3 billion gallons of combined wastewater and stormwater are discharged to the Bay via the CSD structures.³⁵⁵ Overall, 100 percent of all wet weather flows receive the equivalent of primary treatment and in a typical year, 95 percent of the annual wet-weather flows are disinfected prior to discharge. Wet weather flows are intermittent throughout the rainy season, and combined sewer discharge events vary in nature and duration, depending largely on the intensity of individual rainstorms. All discharges from the combined sewer system to the Bay, through either the outfalls or the CSD structures, are operated in compliance with the federal Clean Water Act and the state Porter-Cologne Water Quality Control Act through the National Pollutant Discharge Elimination System (NPDES) permit for discharges from the SEP, the North Point Wet Weather Facility, and all of the Bayside wet-weather facilities, including CSDs to the Bay (referred to as the Bayside NPDES Permit, and described below under the State Regulatory Framework).

On an annual basis, sanitary flows make up 49 percent of the total flow to the Bayside Drainage Basin while stormwater runoff makes about 25 percent of the flows, and base flows (infiltration of groundwater to the sewer system) make up the remaining 26 percent.³⁵⁶ Wet weather flows within the Channel urban watershed are approximately 8,502 million gallons per year, and approximately 516 million gallons of this flow is discharged to the Bay via nine CSD structures: two that drain directly into the Bay and seven that drain into Mission Creek. These structures have been constructed with a regulatory design criterion of a long-term average of 10 discharges per year. Over the last 14 years, the long-term average number of CSD events from the Central Basin of the combined sewer system, which includes the Channel watershed, is 11. This indicates the need to implement improvements to maintain the long-term design criterion of 10 CSD events per year.³⁵⁷

³⁵⁵ San Francisco Public Utilities Commission, "Special Study: Overflow Impacts and Efficacy of Combined Sewer Overflow Controls for the San Francisco Bayside System, Southeast Water Pollution Control Plant, North Point Wet Weather Facility and Bayside Wet Weather Facilities, NPDES No. CA0037664." June 29, 2012.

³⁵⁶ SFPUC, "Bayside Drainage Basin Urban Watershed Characterization," July 2013. In periods of wet-weather flow when discharges to the Bay occur, the flows are more than 90 percent stormwater (SFPUC, Wastewater Collection System webpage: <http://sfwater.org/index.aspx?page=399>).

³⁵⁷ SFPUC, "Bayside Drainage Basin Urban Watershed Characterization," July 2013.

Under peak high tide conditions, some of the City's CSD outfalls are subject to tidal inflow, and more CSD structures could be affected in the future due to projected sea level rise.³⁵⁸ The inflow both uses up storage volumes in the transport and storage boxes, and increases the amount of water requiring treatment at the SEP and the North Point Wet Weather Facility. The SFPUC is evaluating measures to prevent backflow of Bay water into the sewer system such as the installation of gates and valves.

Combined Sewer System Planning Efforts by the SFPUC

The SFPUC is currently implementing a \$7 billion, 20-year capital program called the Sewer System Improvement Program (SSIP) to address system-wide needs and update the aging combined sewer system. The SSIP is the result of an eight-year public planning process incorporating valuable feedback from the community. Improvements constructed under the SSIP will upgrade the wastewater collection, treatment, and discharge facilities to ensure regulatory compliance, reliability, and long-term sustainability.

The SFPUC's endorsed goals for the SSIP are to:

- Provide a compliant, reliable, resilient, and flexible system that can respond to catastrophic events;
- Integrate green and gray infrastructure to manage stormwater and minimize flooding;
- Provide benefits to impacted communities;
- Modify the system to adapt to climate change; and
- Achieve economic and environmental sustainability.

In 2012, the SFPUC Commission authorized staff to proceed with the planning and development of projects totaling \$2.7 billion for Phase 1 of the SSIP, with final approval subject to completion of environmental review.³⁵⁹ Phase 1 SSIP projects include, for example, upgrading of the biosolids treatment facilities at the SEP as well as the odor control and energy recovery facilities; replacement of the SEP Headworks project to provide better screening and grit removal for the wastewater and stormwater influent to the SEP; adding redundancy to wastewater conveyance capacity via the Central Bayside System Improvement Project (funded through design phase only); upgrades to the Oceanside Water Pollution Control Plant and North Point Wet Weather Facility; and installation of green infrastructure (such as stormwater infiltration areas along streets and creek daylighting) in eight locations around San Francisco. Additional projects include improved odor control associated with the liquid treatment processes at SEP (i.e., SEP Existing Digester Gas Handling Improvements Project and Primary and Secondary Clarifier Upgrades Project).³⁶⁰ The SFPUC Commission has not yet authorized planning and development of projects included in Phase 2 or 3 of the SSIP; examples of SSIP Phase 2 and 3 projects that may be authorized for funding in the future include construction of the Central Bayside System Improvement Project, SEP Southside Renovation (demolition of the existing digesters and subsequent redevelopment of SEP South), expansion of the West Side Pump Station, and additional citywide green infrastructure.

³⁵⁸ SFPUC, "Bayside Drainage Basin Urban Watershed Characterization," July 2013.

³⁵⁹ SFPUC Resolution No. 12-0156 applicable to the SSIP "directs staff to return to the Commission after key project milestones have been met, and ultimately for project review and approval, following environmental review of proposed projects ..."

³⁶⁰ SFPUC, SSIP Phase 1 Program Executive Summary, April-June 2015.

The Urban Watershed Assessment being conducted by the SFPUC is a process by which SSIP collection system improvement projects will be developed and evaluated to achieve the endorsed goals of the SSIP. This planning process provides an integrated, urban watershed-wide approach to define the most effective capital improvement projects and policy initiatives for each of the city's eight urban watersheds (five in the Bayside Drainage Basin and three in the Westside Drainage Basin) and to address surface drainage and collection system challenges. The assessment includes several steps:

- Characterizing each watershed;
- Developing and screening watershed alternatives to meet the collection-system related SSIP goals;
- Evaluating the screened watershed alternatives to optimize financial, social, and environmental benefits; and
- Recommending an implementation strategy for all of the preferred watershed alternatives (the goal is to determine a recommended plan of collection system projects for all of the watersheds).

The Urban Watershed Assessment identified several needs related to the Bayside Drainage Basin, including management of excess stormwater and related CSDs and the fact that existing infrastructure is aging, inadequate, or in need of redundancy. Compliance with the City's Stormwater Management Ordinance and associated Stormwater Management Requirements and Design Guidelines, discussed below under Regulatory Setting, will require development on non-SFPUC properties (approximately 70 percent of the impervious surface of the drainage basin) to reduce stormwater flows to the combined sewer system, which will help manage excess stormwater flows and result in less stormwater discharged to the Bay as CSDs. Implementation of the SFPUC's Non-Potable Water Program, which is also discussed below under Regulatory Setting, is expected to increase the number of rainwater harvesting projects in the Bayside Drainage Basin, which would also reduce the amount of stormwater conveyed to the combined sewer system. Graywater³⁶¹ reuse under the Non-Potable Water Program is expected to reduce wastewater discharges to the combined sewer system, also ultimately helping reduce CSDs.

The SFPUC is also considering several incentive programs to reduce stormwater flows to the combined sewer system.³⁶² The Sustainable Roofs Program would encourage properties with large roofs (approximately 40 percent of the impervious surface of the drainage basin) to install green roofs (constructed with vegetation to utilize stormwater falling on the roof) or blue roofs (constructed with facilities to store stormwater flows until the peak has subsided). The Watershed Improvement Grant Program would target properties with greater than half an acre of impervious surfaces (approximately 40 percent of the impervious surface of the drainage basin) and encourage stormwater management projects on properties in areas where the system needs are greatest. The Residential Stormwater Program would target single family and two to four unit buildings (approximately 35 percent of the impervious surfaces in the drainage basin) and provide incentives for implementing a variety of stormwater runoff management technologies, including downspout disconnection, pavement removal, and rain gardens. The Urban Watershed Opportunities Report³⁶³ evaluated

³⁶¹ Graywater is water from washing machines, showers, bathtubs, and bathroom sinks that can be used for irrigation.

³⁶² San Francisco Public Utilities Commission, Sewer System Improvement Program, Bayside Drainage Basin Urban Watershed Opportunities, Final Draft Technical Memorandum, July 2014.

³⁶³ San Francisco Public Utilities Commission, Sewer System Improvement Program, Bayside Drainage Basin Urban Watershed Opportunities, Final Draft Technical Memorandum, July 2014.

opportunities for improving the collection system of the combined sewer and reducing stormwater flows to the sewer. The report identified 34 possible streetscape improvements within the Channel watershed. These streetscape projects would increase stormwater infiltration within the streets, which comprise 30 percent of the impervious surfaces within the Bayside Drainage Basin. One of the potential streetscape projects is along Townsend Street and another is along Sixth Street. None of the other potential locations are within or adjacent to the Plan Area. The report also recommended stormwater infiltration projects on publicly owned parcels within the basin to increase the infiltration of stormwater as well as daylighting of several creeks within the Bayside basin, which would accept some stormwater flows and help alleviate excess stormwater flows and associated CSDs.

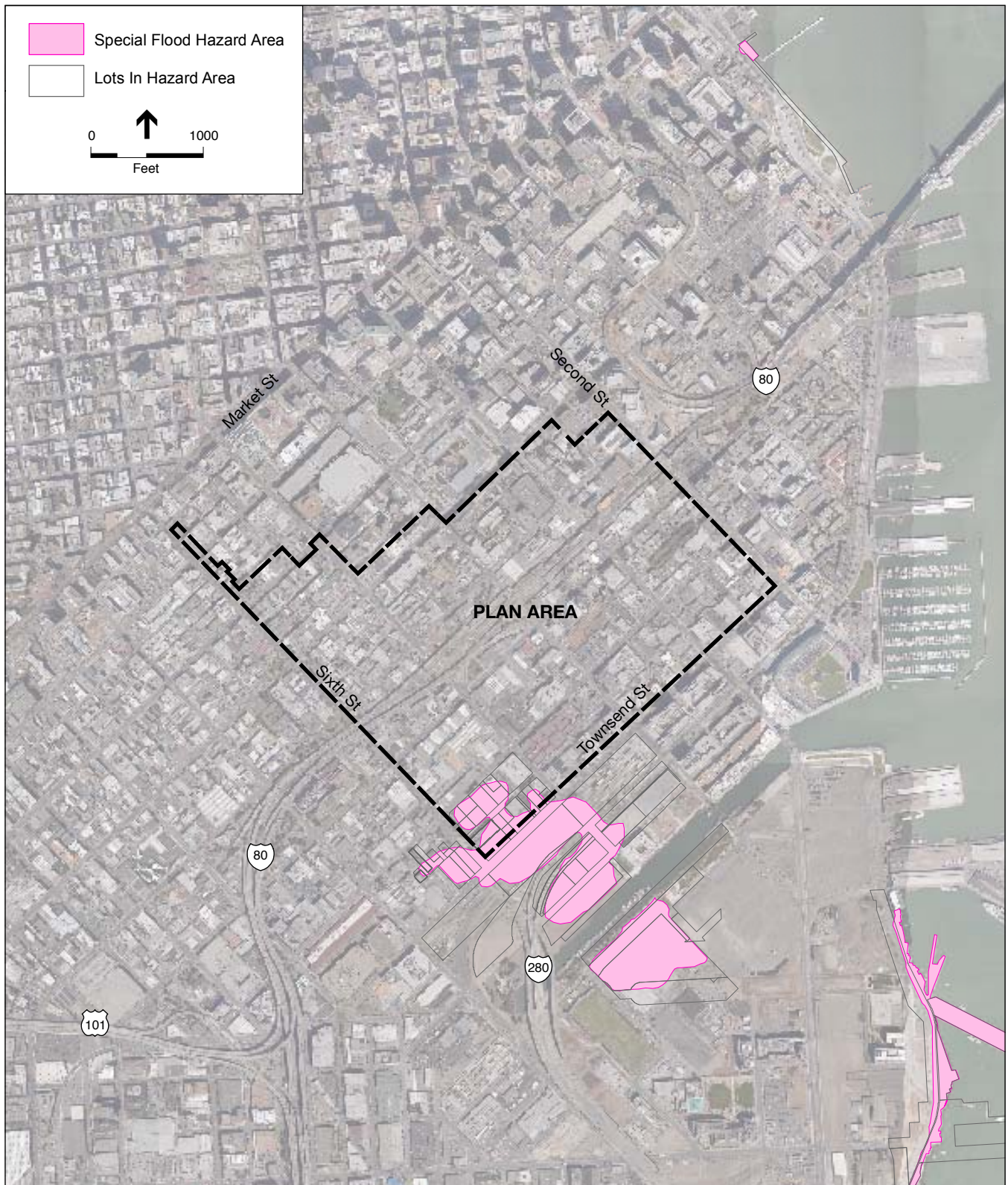
Specific needs identified for the Channel urban watershed related to combined sewer discharges and existing infrastructure include maintaining a long-term average of 10 CSD events per year from the Central Basin; providing redundancy for the Channel force main; constructing pump station reliability improvements; and renewing or replacing aging infrastructure such as the Channel treatment and storage box, Brannan Street Tunnel, North Point Main, 25.3 miles of brick sewers, 1.9 miles of high-risk sewers, and 1.4 miles of force mains.³⁶⁴ Renewing or replacing infrastructure would include providing detention vaults to temporarily store peak stormwater flows, upsizing the pipes to increase conveyance capacity, and constructing CSD outfall capacity improvements that would help balance flows within the system without increasing the volume of CSDs. To reduce CSD volumes and improve the quality of CSDs, operational improvements could be made to reroute dry-weather flows, existing valves could be replaced with ones that would better restrict the discharge of sediments, discharge locations could be reconfigured, or some combination of these approaches could be used.

Bayside projects currently planned under the SSIP include the Central Bayside System Improvement Project, which will include improvements to provide redundancy to the Channel force main that transports flows from the Channel Pump Station to the SEP, along with construction of green and grey infrastructure to reduce stormwater flows to the combined sewer system; operational and seismic improvements to the SEP; operational improvements to the North Point Wet Weather Facility; and green infrastructure projects to manage stormwater before it enters the combined sewer system.

Flooding

Some low lying areas along San Francisco's Bay shoreline are subject to flooding during periods of extreme high tides, storm surge and waves, although these occurrences are relatively rare in San Francisco compared to areas prone to hurricanes or other major coastal storms or with developed areas near or below sea level. In 2008, the City adopted interim flood maps depicting the 100-year flood zone along the city's Bay shoreline. The identified flood zones in the vicinity of the Plan Area are shown on **Figure IV.I-2, San Francisco Interim Floodplain Map**. The 100-year flood zone represents areas that have a one percent chance of flooding in any single year.

³⁶⁴ San Francisco Public Utilities Commission, Sewer System Improvement Program, Bayside Drainage Basin Urban Watershed Opportunities, Final Draft Technical Memorandum, July 2014.



SOURCE: San Francisco Floodplain Management Program, 2008

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Figure IV.I-2
San Francisco Interim Floodplain Map

As shown on Figure IV.I-2, and discussed in Impact HY-5 of the Initial Study, a small portion of the Plan Area bounded by Townsend, Sixth, Brannan, and Fifth Streets is located within a Special Flood Hazard Area identified on San Francisco's Interim Floodplain Map of 2008.³⁶⁵ As part of the building permit review process, project applicants for buildings located in this flood hazard area would have to comply with the standards of construction specified in the City's Floodplain Ordinance passed in 2008 and amended in 2010.³⁶⁶ Accordingly, the first floor of new or substantially improved structures would be required to be elevated above the base flood elevation or otherwise flood-proofed. The remainder of this impact analysis discusses the factors contributing to coastal flooding and the potential for increased flooding in the future as a result of sea level rise.

Factors Contributing to Coastal Flooding

Coastal areas are vulnerable to periodic flooding due to storm surge, extreme tides, and waves. Rising sea level due to climate change has the potential to increase the frequency, severity, and extent of flooding in coastal areas. These factors are defined and described below.

Tides. Diurnal (twice daily) high tides along the San Francisco Bay shoreline typically range from approximately 5 to 7 feet, North American Vertical Datum of 1988 (NAVD88; approximately -4 to -6 feet San Francisco City Datum [SFD]), though annual maximum tides may exceed 7 feet NAVD88.³⁶⁷ The twice yearly extreme high and low tides are called "king tides." These occur each year during the winter and summer when the earth, moon and sun are aligned, and may be amplified by winter weather. King tides and other high tides can result in temporary inundation of low-lying roads, boardwalks, and waterfront promenades. A portion of The Embarcadero Promenade near Pier 14 and the Marina area in San Francisco experience inundation under current king tide conditions.³⁶⁸

Storm Surge. Storm surge occurs when persistent high winds and changes in air pressure push water towards the shore, which can raise the water level near the shoreline by several feet and may persist for several days. Along San Francisco's bay shoreline, storm surge typically raises the surface water elevation 0.5 to 3 feet during major winter storms several times a year.³⁶⁹ Extreme high tides in combination with storm surge can cause inundation of low-lying roads, boardwalks, and promenades; can exacerbate coastal flooding; and can interfere with stormwater and sewer outfalls.

³⁶⁵ City and County of San Francisco, San Francisco Interim Floodplain Map, Northeast, Final Draft, July 2008.

³⁶⁶ Office of the City Administrator, San Francisco Floodplain Management Program Fact Sheet, revised March 1, 2016.

³⁶⁷ San Francisco City Datum (SFD) establishes the City's zero point for surveying purposes at approximately 11.3 feet above the current 1988 North American Vertical Datum. Street elevations on Department of Public Works maps are given in SFD, and this datum is commonly used in mapping and technical reports in the City.

³⁶⁸ San Francisco Public Utilities Commission (SFPUC), *Climate Stressors and Impact: Bayside Sea Level Rise Mapping*, Final Technical Memorandum (hereinafter "SFPUC, *Bayside Sea Level Rise Mapping*"). Prepared for San Francisco Public Utilities Commission by the Sewer System Improvement Program, Prepared by Program Management Consultant AECOM Contract CS-165, June 2014.

³⁶⁹ SFPUC, *Bayside Sea Level Rise Mapping*.

The degree of storm surge depends on the severity of the storm as well as tidal levels at the time of the storm and is characterized using a return period, which represents the expected frequency of a storm event occurring based on historical information. One-year storm surge is expected to occur each year while 100-year storm surge (which represents more extreme conditions) has a one percent chance of occurring in any year.

Storm Waves. Waves and wave run-up primarily affect a narrow band along the shoreline where wave energy can damage structures and overtop both natural embankments and shoreline protection structures such as seawalls and levees. The influence of waves diminishes inland as wave energy dissipates. In addition, the Pacific Ocean waves which are generally larger than those originating in the Bay are substantially dampened along the Bay shoreline due to transformation processes within San Francisco Bay. Along San Francisco's bay shoreline, storm waves typically raise the surface water elevation 1 to 4 feet during major winter storms several times a year.³⁷⁰

El Niño winter storms. During El Niño,³⁷¹ atmospheric and oceanographic conditions in the Pacific Ocean bring warm, higher waters to the Bay Area and may produce severe winter conditions that bring intense rainfall and storm conditions to the Bay Area. Tides are often elevated 0.5 to 3.0 feet above normal along the coast for months at a time, and additional storm surge and wave setup during storm events can elevate water levels even further. El Niño conditions prevailed in 1977–1978, 1982–1983, 1997–1998, and 2009–2010. Typical impacts include severe flooding of low-lying roads, boardwalks and waterfront promenades; storm drain backup; wave damage to coastal structures and erosion of natural shorelines.

Sea Level Rise. Seas are rising globally due to climate change, and are expected to continue to rise at an accelerating rate for the foreseeable future. The sea level at the San Francisco tidal gauge has risen 8 inches over the past century. The National Research Council's (NRC's) 2012 report, *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future*, provides a scientific review of sea level rise for the West Coast and provides the most recent regional sea level rise predictions for 2030, 2050, and 2100, relative to year 2000 sea level.³⁷² In this report, the NRC projects that sea levels in the San Francisco Bay Area will rise 11 inches by 2050 and 36 inches by 2100 (see **Table IV.I-1, Sea Level Rise Estimates for San Francisco Relative to the Year 2000**). As presented in the NRC Report, these sea level rise projections represent likely sea level rise values based on the current understanding of global climate change and assuming a moderate level of greenhouse gas (GHG) emissions³⁷³ and extrapolation of continued accelerating land ice melt patterns.

³⁷⁰ SFPUC, *Bayside Sea Level Rise Mapping*.

³⁷¹ El Niño–Southern Oscillation (ENSO) is a natural oceanic-atmospheric cycle. El Niño conditions are defined by prolonged warming in the Pacific Ocean sea surface temperatures. Typically, this happens at irregular intervals of two to seven years, and can last anywhere from nine months to two years.

³⁷² National Research Council, *Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future*, Washington, DC: The National Academies Press, 2012. Available at http://www.nap.edu/catalog.php?record_id=13389, accessed October 1, 2014.

³⁷³ Future emissions of greenhouse gases depend on a collection of human decisions at local, regional, national, and international levels as well as potential unknown technological developments. For this reason, future changes in greenhouse gas emissions cannot be accurately estimated, and a range of emissions levels is considered in the NRC Report. Estimates of sea level rise relative to thermal expansion of the oceans were formulated using the mid-level, or moderate level, of predicted changes in greenhouse gas emissions (from a combination of fossil and non-fossil fuels), as well as an assumption of high economic growth; this represents scenario “A1B” as described by the Intergovernmental Panel on Climate Change (IPCC).

**TABLE IV.I-1 SEA LEVEL RISE ESTIMATES FOR SAN FRANCISCO
RELATIVE TO THE YEAR 2000**

Year	Projection	Upper Range
2030	6 inches	12 inches
2050	11 inches	24 inches
2100	36 inches	66 inches

SOURCE: National Research Council, 2012.

The NRC report also includes ranges of sea level rise that could occur based on different estimates of GHG emissions and ice melt patterns. The extreme upper limit of the ranges represents unlikely, but possible levels of sea level rise that are based on very high GHG emissions scenarios and significant ice melt that is not currently anticipated, but could occur. Assuming the maximum level of greenhouse gas emissions and ice melt, the NRC anticipates that sea levels in the San Francisco Bay area could rise up to 24 inches by 2050 and 66 inches by 2100 as presented in Table IV.I-1.

The estimates represent the permanent increase in Mean Sea Level and the associated average daily high tide conditions (represented by Mean Higher High Water, or MHHW),³⁷⁴ that could result from sea level rise; they do not take into account storm surge, extreme tides, or waves which can result in water levels that are temporarily higher than MHHW as discussed above.

In March 2013, the California Ocean Protection Council updated its 2010 statewide sea level rise guidance to adopt the NRC Report as the current best available science on sea level rise for California.³⁷⁵ The California Coastal Commission supports the use of the NRC Report as the best science currently available in its *Sea Level Rise Policy Guidance*, adopted in 2015.³⁷⁶ The San Francisco Bay Conservation and Development Commission (BCDC) also considers the NRC Report to be the best available science-based prediction of sea level rise for San Francisco Bay. Accordingly, this EIR considers the NRC Report to be the best science currently available on sea level rise affecting San Francisco for both CEQA and planning purposes.

Although the NRC Report provides the best available sea level rise projections for San Francisco Bay at this time, scientific uncertainty remains regarding the rate and magnitude of sea level rise. Sea level rise projections beyond 2050 are highly dependent on assumptions regarding future GHG emissions and future changes in the rate of land ice melting. In recognition of this uncertainty, State of California Sea-Level Rise Guidance recommends an adaptive management approach, incorporating risk assessment, for development in areas that may be subject to sea level rise beyond 2050.³⁷⁷

³⁷⁴ Mean higher high water is the higher of each day's two high tides averaged over time.

³⁷⁵ State of California, *State of California Sea-Level Rise Guidance Document*, Developed by the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT), with science support provided by the Ocean Protection Council's Science Advisory Team and the California Ocean Science Trust, March 2013 Update. Available at http://www.opc.ca.gov/webmaster/ftp/pdf/docs/2013_SLR_Guidance_Update_FINAL1.pdf/.

³⁷⁶ California Coastal Commission, *Sea Level Rise Policy Guidance*, Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs and Coastal Development Permits, Unanimously Adopted August 12, 2015. Available at http://documents.coastal.ca.gov/assets/slr/guidance/August2015/0_Full_Adopted_Sea_Level_Rise_Policy_Guidance.pdf, accessed November 28, 2015.

³⁷⁷ State of California, *State of California Sea-Level Rise Guidance Document*.

Sea Level Rise Inundation Mapping

The SFPUC, as part of the planning for its SSIP, has developed a series of maps published in 2014 that represent areas of inundation along both the Bay and Ocean shorelines of San Francisco. These maps use a one-meter horizontal grid resolution³⁷⁸ based on the 2010/2011 California Coastal Mapping Program LiDAR.³⁷⁹ The inundation maps leverage data from FEMA's California Coastal Analysis and Mapping Project, which includes detailed coastal engineering analyses and mapping of the San Francisco Bay shoreline.

The SFPUC inundation maps evaluate scenarios that represent the NRC projections of sea level rise in combination with the effects of storm surge. They represent permanent inundation that could occur as a result of total water level rises (over and above year 2000 MHHW) based on daily tidal fluctuations. Each scenario also addresses temporary inundation that could occur from extreme tides and one-year, two-year, five-year, 25-year, 50-year, and 100-year storm surge. Flooding as a result of storm surge would occur on a temporary basis, during and immediately after a storm event or extreme tide.

The scenarios listed below represent Bay water elevations that could occur by the year 2050 and the year 2100 based on the NRC's projected level of sea level rise and considering 100-year storm surge:

- MHHW plus 12 inches of sea level rise (representative of NRC's projected sea level rise by 2050);
- MHHW plus 36 inches of sea level rise (representative of NRC's projected sea level rise by 2100);
- MHHW plus 52 inches of sea level rise (representative of NRC's projected sea level rise by the year 2050 in combination with 100-year storm surge); and
- MHHW plus 77 inches of sea level rise (representative of NRC's projected sea level rise by the year 2100 in combination with 100-year storm surge).

The following scenarios represent the maximum Bay water elevations that could occur by the year 2100, based on the NRC's upper range of sea level rise and considering 100-year storm surge:

- MHHW plus 66 inches of sea level rise (representative of NRC's upper range of sea level rise by 2100); and
- MHHW plus 107 inches of sea level rise (representative of NRC's upper range of sea level rise by the year 2100 in combination with a 100-year storm surge).

The SFPUC cautions that its maps represent a "do nothing" scenario, in which no site-specific measures are taken to prevent future flooding and no area-wide measures such as waterfront protection structures are constructed. In the event that the City undertakes area-wide measures to protect against inundation in the future, the mapping would need to be revised to reflect the modified inundation areas with construction of these measures. In addition, because the SFPUC sea level rise maps are based on 2010/2011 topographic

³⁷⁸ The horizontal grid resolution of a digital elevation model (DEM) defines the scale of the features that are modeled; this is generally the minimum resolution necessary to depict levees, berms, and other topographic features important to diverting floodwaters.

³⁷⁹ LiDAR (Light Detection and Ranging) is a remote sensing technology that measures distance by illuminating a target with a laser and analyzing the reflected light. LiDAR is commonly used to create high-resolution terrain models, topography data sets, and topographic maps.

mapping, they do not account for placement of fill that could be conducted at individual development sites to prevent future flooding due to sea level rise.

The SFPUC inundation maps indicate that the Plan Area would not be permanently inundated with a sea level rise of 12 inches that is expected by 2050 or a sea level rise of 36 inches which is expected by 2100.³⁸⁰ Water levels could temporarily rise to 11 feet NAVD88 (-0.7 feet SFD) with 12 inches of sea level rise and 100-year storm surge. As shown on **Figure IV.I-3, Inundation with 12 Inches of Sea Level Rise plus 100-Year Storm Surge**, a very small area in the southwest portion of the Plan Area would be temporarily flooded to a depth of approximately two feet, with local inundation as deep as six feet under this scenario.³⁸¹ Similar to flooding under current conditions, the potential flooding zone is roughly bounded by Townsend, Sixth, Brannan, and Fifth Streets.

With 36 inches of sea level rise that is expected by 2100 and 100-year storm surge, water levels could temporarily reach 13 feet NAVD88 (1.4 feet SFD) and a larger area within the southwest portion of the Plan Area would be temporarily flooded. As shown on **Figure IV.I-4, Inundation with 36 Inches of Sea Level Rise plus 100-Year Storm Surge**, most of the area bounded by Sixth Street, Folsom Street, Fourth Street, and Townsend Street would be flooded to depths of at least two feet with localized areas being inundated to depths of approximately eight feet.

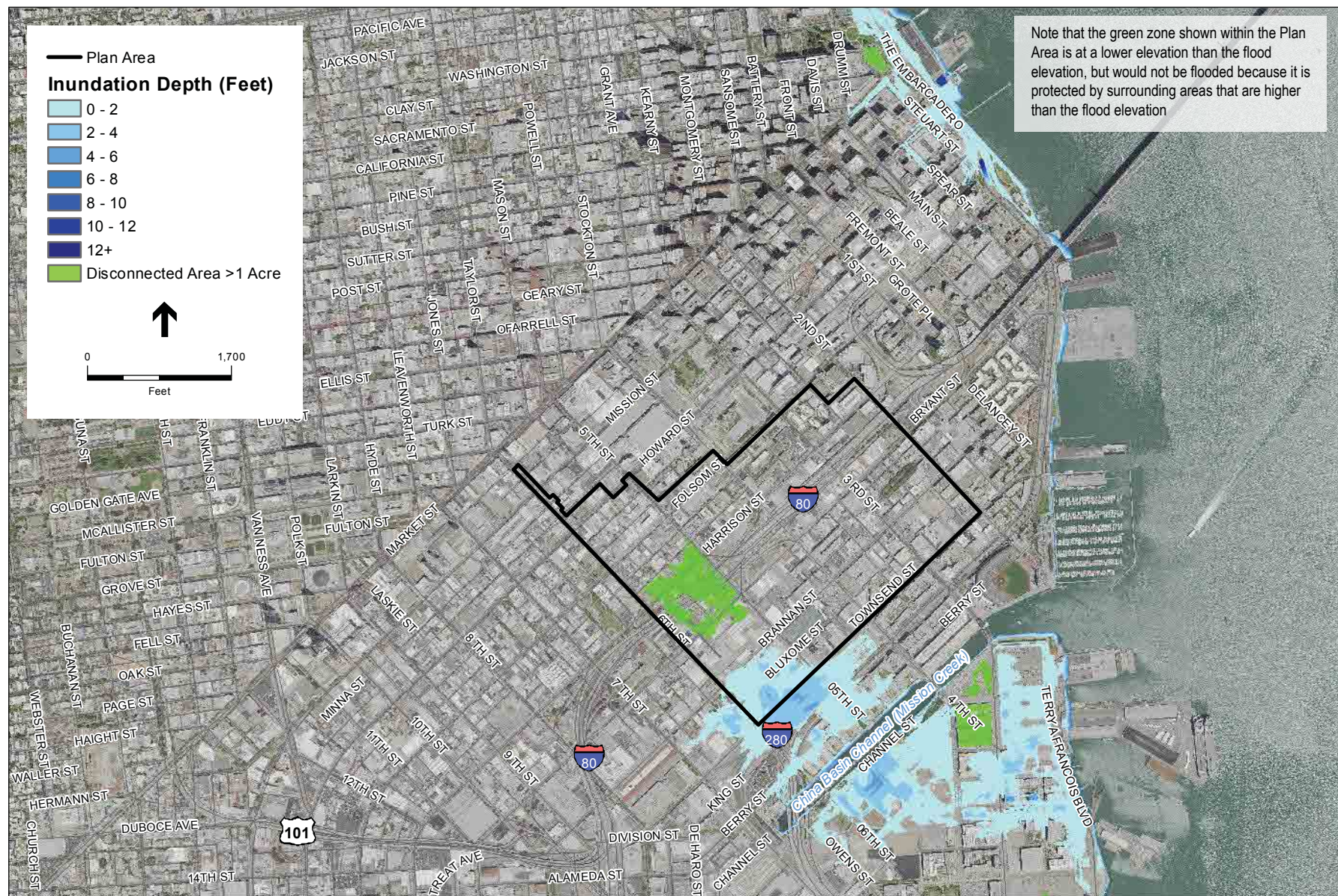
Planning for Sea Level Rise in San Francisco

Mayor Edwin M. Lee also established two interdepartmental committees to manage the City's efforts on addressing sea level rise: the Sea Level Rise (SLR) Coordinating and SLR Technical Committees. The SLR Coordinating Committee was established in February of 2005 and is a director-level committee co-chaired by the Director of Citywide Planning at the Planning Department and the City Engineer and Deputy Director at the SFPW. SLR Coordinating Committee members also include the Chief Resiliency Officer, and senior staff from the Mayor's Office, the City Administrator's Office, the San Francisco Airport (SFO), the Port, the SFPUC, MTA, Department of Building Inspection (DBI), Office of Community Investment and Infrastructure (OCII), Office of Economic and Workforce Development (OEWD), and the Capital Planning Committee. The responsibilities of the SLR Coordinating Committee are as follows:

- Coordinate the efforts of City departments and advise the Mayor's Office on policies, strategies, initiatives, and resolutions to deal with and plan for the potential impact on San Francisco from sea level rise;
- Coordinate local efforts and initiatives with the work of other governmental entities and various stakeholders at the regional, state, and national levels such as U.S. Environmental Protection Agency (U.S. EPA), U.S. Department of Housing and Urban Development (HUD), Department of the Interior, California Coastal Commission, California Ocean Protection Council, BCDC, etc.;
- Provide guidance and specific recommendations to City departments with regard to land use and strategies to protect assets and communities along the shoreline;

³⁸⁰ SFPUC, *Bayside Sea Level Rise Mapping*.

³⁸¹ Note that the green zone shown within the Plan Area on Figure IV.I-3 is at a lower elevation than the flood elevation, but would not be flooded because it is protected by surrounding areas that are higher than the flood elevation.



SOURCE: USDA, 2014; San Francisco Public Utilities Commission, 2014; AECOM, 2014; ESA, 2015

Case No. 2011.1356E: Central SoMa Plan

Figure IV.I-3

Inundation with 12 Inches of Sea Level Rise plus 100-year Storm Surge

- Oversee and guide the existing SLR Technical Committee and implementation of the Capital Planning Guidance to address vulnerability and risks, and adaptability of the City's physical infrastructure; and
- Promote coordination and collaboration among city departments, private utility providers, and other stakeholders.

The SLR Coordinating Committee is first charged with assessing the city's risk to sea-level rise. Once the data analysis phase is complete, the SLR Coordinating Committee will coordinate the City's SLR vulnerability assessment and adaptation planning efforts with local, regional, and national governmental and non-governmental organizations and with community stakeholders, as needed. Key to this effort will be determining how to best involve the community.

The SLR Technical Committee was established in February of 2015 and is comprised of the same membership that developed the Capital Planning Committee's Sea Level Rise Guidance, including the SFPUC, Port, SFPW, SFO, SFMTA, SFMTA, Capital Planning, and the Planning Department. This committee is charged with assisting all City agencies with consistent implementation of the Guidance, revising the Guidance as needed, and assisting the SLR Coordinating Committee as requested.

Guidance for Incorporating Sea Level Rise into Capital Planning

On September 14, 2014, the City's Capital Planning Committee adopted the *Guidance for Incorporating Sea Level Rise into Capital Planning in San Francisco: Assessing Vulnerability and Risk to Support Adaptation*, which was prepared by the SLR Coordinating Committee.³⁸² The guidance document has been revised to simplify the analysis of specific sea level rise scenarios and clarify how to select the appropriate scenario for design and planning purposes. The revised document also provides a methodology for determining the design tide for use in project design and planning, and was adopted by the Capital Planning Committee on December 14, 2015.³⁸³

San Francisco Sea Level Rise Action Plan

In March 2016, the SLR Coordinating Committee released the *San Francisco Sea Level Rise Action Plan*, with lead City staffing by the Planning Department and Public Works, along with other City departments and a consultant team.³⁸⁴ The Action Plan is intended to guide City departments in their understanding of and adaptation to the impacts of sea level rise, and it also identifies what long-term sea level rise means for San Francisco's residents, visitors, economy and waterfront.

The Action Plan is the first step in the development of the Citywide Sea Level Rise Adaptation Plan, expected to be complete in 2018, which will incorporate the adaptation strategies identified in the Action Plan and help prioritize investments to best improve climate resilience while protecting economic and environmental value.

³⁸² City and County of San Francisco Sea Level Rise Committee, *Guidance for Incorporating Sea Level Rise into Capital Planning in San Francisco: Assessing Vulnerability and Risk to Support Adaptation*, September 14, 2015. Available at <http://onesanfrancisco.org/wp-content/uploads/San%20Francisco%20SLR%20Guidance%20Adopted%2009.22.14%2012182014.pdf>, accessed March 15, 2016.

³⁸³ City and County of San Francisco Sea Level Rise Committee, *Guidance for Incorporating Sea Level Rise into Capital Planning in San Francisco: Assessing Vulnerability and Risk to Support Adaptation*, December 14, 2015. Available at <http://onesanfrancisco.org/wp-content/uploads/Guidance-for-Incorporating-Sea-Level-Rise-into-Capital-Planning1.pdf>, accessed January 22, 2016.

³⁸⁴ City and County of San Francisco, *Sea Level Rise Action Plan*, March 2016. Available at http://default.sfplanning.org/plans-and-programs/planning-for-the-city/sea-level-rise/160309_SLRAP_Final_ED.pdf.

The Adaptation Plan will also identify potential funding sources, governance structures, and implementation timelines.

The Action Plan establishes an overarching vision, goals, and a set of guiding principles for sea level rise planning; summarizes current climate science, relevant policies and regulations, and vulnerability and risk assessments conducted to date; identifies data gaps and establishes a framework for further assessment, adaptation planning, and implementation; and provides the foundation and guidance to develop a citywide Sea Level Rise Adaptation Plan.

Mission Creek Sea Level Rise Adaptation Study

The San Francisco Bay Area Planning and Urban Research Association (SPUR) released the Mission Creek Sea Level Rise Adaptation Study in September 2016.³⁸⁵ This study was prepared on the behalf of a several City and regional agencies and groups including the Port, BCDC, Delta Alliance, SFPUC, SFPW, San Francisco City Administrator, and San Francisco Planning Department. The study concluded that future flooding in the South of Market area due to sea level rise could occur due to low points along the northern Mission Creek shoreline that will provide paths for inundation. Flooding that could occur by 2050 could be prevented by raising a few low spots along the creek shoreline to cutoff pathways of inundation. The entire shoreline would need to be raised to prevent flooding that could occur by 2100.

The study evaluated seven adaptation concepts to control flooding as a result of sea level rise. These include three that focus on adaptations to Mission Creek and four that focus on adaptations to the Bay shoreline. All three of the Mission Creek concepts would reduce future flooding hazards in the Plan Area. The first concept includes constructing perimeter shoreline protection features to address vulnerable low spots. The measures implemented under this concept could include a mix of levees and seawalls. The second concept includes constructing a tidal barrier at the mouth of Mission Creek that can be closed during high tides and storm surge. The third concept includes completely closing off Mission Creek from the Bay with a levee or dam. All of the concepts focusing on the Bay shoreline include improvements that would be constructed to the south of Mission Creek. These measures would not address flooding issues in the Plan Area. To select the best option to control flooding due to future sea level rise, the study recommends completing a citywide adaptation plan.

Planning for Climate Change under the SFPUC Sewer Improvement Program

The SFPUC is also addressing sea level rise as part of its Sewer System Improvement Program, and is conducting a detailed analysis of the potential for new and existing combined sewer infrastructure to be affected by sea level rise.³⁸⁶ Accordingly, all new facilities will be built using a climate change criterion so the combined sewer system will be better able to respond to rising sea levels. Because rising sea levels and storm surge could potentially inundate the combined sewer system and exacerbate existing flooding from the sewer system, or cause new flooding, the SFPUC is also evaluating alternatives such as the installation of backflow preventers on the CSD structures to restrict the intrusion of Bay water into the combined sewer system.

³⁸⁵ San Francisco Bay Area Planning and Urban Research Association (SPUR), Mission Creek Sea Level Rise Adaptation Study, September 2016. Available at http://www.spur.org/sites/default/files/publications_pdfs/Mission_Creek_Sea_Level_Rise_Adaptation_Study.pdf, accessed October 18, 2016.

³⁸⁶ San Francisco Public Utilities Commission, *Bayside Drainage Basin Urban Watershed Opportunities*, Final Draft Technical Memorandum, July 2014.

IV.I.3 Regulatory Framework

Federal Regulations

Clean Water Act – Water Quality

In 1972, the Clean Water Act (CWA) established the basic structure for regulating discharges of pollutants into the waters of the U.S. and gave the U.S. Environmental Protection Agency (U.S. EPA) the authority to implement pollution control programs. The CWA sets water quality standards for contaminants in surface waters. The statute employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, to finance municipal wastewater treatment facilities, and to manage polluted runoff. The U.S. EPA has delegated responsibility for implementation of portions of the CWA, including water quality control planning and programs in California to the State Water Resources Control Board (SWRCB) and the nine RWQCBs. Water quality standards applicable to the project are listed in the *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan), discussed further below under State Regulations.

Section 303(d) and Total Maximum Daily Loads

In accordance with Section 303(d) of the CWA, states must present the U.S. EPA with a list of “impaired water bodies,” defined as those water bodies that do not meet water quality standards. The CWA requires the development of total maximum daily loads (TMDLs) to improve water quality of impaired water bodies. Implementation of this program in the project area is conducted by the RWQCB and is discussed below under the heading State Regulations.

Section 402

Section 402 of the CWA authorizes the U.S. EPA to establish a nationwide surface water discharge permit program for municipal and industrial point sources known as the National Pollutant Discharge Elimination System (NPDES) program. Under Section 402, the San Francisco Bay RWQCB has set standard conditions for each permittee in the Bay Area, including effluent limitation and monitoring programs. The stormwater and wastewater discharges under a subsequent development project would be subject to the City’s NPDES permit requirements for the Bayside facilities described below under the heading State Regulations.

Federal Combined Sewer Overflow Control Policy

In 1994, the U.S. EPA adopted the Combined Sewer Overflow Control Policy (CSO Control Policy), which became part of the CWA in December 2000. This policy establishes a consistent national approach for controlling discharges from combined sewers to the nation’s waters. Using the NPDES permit program, the permittee (e.g., the City, for its waste water control and treatment facilities) is required to implement the following nine minimum controls that constitute the technology-based requirements of the CWA and can reduce the frequency of CSDs and their effects on receiving water quality:

- Conduct proper operation and regular maintenance programs for the combined sewer system and CSD outfalls;

- Maximize the use of the collection system for storage;
- Review and modify pretreatment programs to minimize the effect of non-domestic discharges to the collection system;
- Maximize flow to the SEP and North Point Wet Weather Facility for treatment;
- Prohibit CSDs during dry weather;
- Control solids and floatable materials in CSDs;
- Develop and implement a pollution prevention program focused on reducing the effect of CSDs on receiving waters;
- Notify the public of CSDs; and
- Monitor to effectively characterize CSD effects and the efficacy of CSD controls.

The City is currently implementing these controls as required by the CSO Control Policy and has also developed a long-term control plan to optimize operations of the wastewater collection and treatment system and maximize pollutant removal during wet weather.

Consistent with the CSO Control Policy and the Long-Term Control Plan, the City captures and treats 100 percent of the combined sewage flow collected in the combined sewer system during precipitation events. Captured flows are directed first to the SEP and North Point Wet Weather Facility for primary or secondary treatment. Flows in excess of the capacity of these facilities are diverted to storage and transport boxes constructed around much of the city, and receive the equivalent to primary treatment prior to discharge to San Francisco Bay. The Long-Term Control Plan specifies operational parameters that must be met in each drainage basin before a CSD can occur, and includes the long-term average annual design goals for CSDs.

State Regulations

California Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Division 7 of the *California Water Code*) provides for protection of the quality of waters of the State of California for use and enjoyment by the people of California. The act also establishes provisions for a statewide program for the control of water quality, recognizing that waters of the state are increasingly influenced by inter-basin water development projects and other statewide considerations, and that factors such as precipitation, topography, population, recreation, agriculture, industry, and economic development vary regionally within the state. The statewide program for water quality control is therefore administered most effectively on a local level with statewide oversight. Within this framework, the act authorizes the SWRCB and RWQCBs to oversee the coordination and control of water quality within California.

San Francisco Bay Water Quality Control Plan (Basin Plan)

San Francisco Bay waters are under the jurisdiction of the San Francisco Bay RWQCB, which has established regulatory standards and objectives for water quality in the Bay in the *Water Quality Control Plan for the San Francisco Bay Basin*, commonly referred to as the Basin Plan.³⁸⁷ The Basin Plan identifies existing and potential beneficial uses for surface waters and provides numerical and narrative water quality objectives designed to protect those uses. The preparation and adoption of water quality control plans is required by the *California Water Code* (Section 13240) and supported by the federal CWA. Because beneficial uses, together with their corresponding water quality objectives, can be defined per federal regulations as water quality standards, the Basin Plan is a regulatory reference for meeting the state and federal requirements for water quality control. Adoption or revision of surface water standards is subject to the approval of the U.S. EPA.

The Plan Area is located adjacent to Lower San Francisco Bay, which extends from approximately the Bay Bridge on the north to the Dumbarton Bridge on the south. During wet weather, the Channel urban watershed discharges excess flows via nine CSD outfalls: two that drain directly into Central or Lower San Francisco Bay and seven that drain into Mission Creek, which ultimately drains to Lower San Francisco Bay.³⁸⁸ Identified beneficial uses for Mission Creek include commercial and sport fishing, estuarine habitat, wildlife habitat, water contact recreation, noncontact water recreation, and navigation. Identified beneficial uses for Central and Lower San Francisco Bay include industrial service supply, commercial and sport fishing, shellfish harvesting, estuarine habitat, fish migration, preservation of rare and endangered species, fish spawning, wildlife habitat, water contact recreation, noncontact water recreation, and navigation. Central San Francisco Bay also has a beneficial use of industrial process supply.

Impaired Water Bodies and Total Maximum Daily Loads

As described above under Section 303(d) of the CWA, states must present the U.S. EPA with a list of “impaired water bodies,” defined as those water bodies that do not meet water quality standards. The proposed project is located inland from Lower San Francisco Bay. The RWQCB has listed Central and Lower San Francisco Bay and Mission Creek as impaired water bodies for a number of pollutants, including industrial and other chemicals, pesticides, metals, invasive species, and trash.³⁸⁹

As required by the CWA, the U.S. EPA requires the development of TMDLs to improve water quality of impaired water bodies. The first step of the TMDL process is development of a TMDL report describing the water quality problem, detailing the pollutant sources, and outlining the solutions. An implementation plan, included in the TMDL report, describes how and when pollution prevention, control, or restoration activities will be accomplished and who will be responsible for these actions. The final step of the TMDL process is adopting and amending the Basin Plan to legally establish the TMDL and to specify regulatory requirements

³⁸⁷ San Francisco Bay Regional Water Quality Control Board (RWQCB), *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan), June 29, 2013. Available at http://www.swrcb.ca.gov/rwqcb2/water_issues/programs/planningtmdls/basinplan/web/docs/BP_all_chapters.pdf, accessed March 4, 2015.

³⁸⁸ The Bay Bridge divides the Central and Lower basins of San Francisco Bay, according to the Basin Plan.

³⁸⁹ State Water Resources Control Board, *2010 Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report) — Statewide*. Available at http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml, accessed October 2, 2014.

for compliance. As part of a Basin Plan amendment, waste load allocations are specified for entities that have permitted discharges.

TMDLs for polychlorinated biphenyls (PCBs) and mercury in San Francisco Bay have been approved by the U.S. EPA and officially incorporated into the Basin Plan. The RWQCB also adopted the San Francisco Bay Watershed Permit (Order No. R2-2012-0096) which addresses mercury and PCBs in municipal and industrial wastewater discharges.³⁹⁰

NPDES Waste Discharge Regulations

As discussed above under the heading Federal Regulations, Section 402 of the federal CWA established the NPDES program to protect water quality of receiving waters. The NPDES program requires all facilities that discharge pollutants into waters of the United States to obtain a permit. The permit provides two levels of control—technology-based limits and water-quality-based limits—to control discharge of pollutants for the protection of water quality. Technology-based limits are based on the ability of dischargers in the same category to treat wastewater, while water quality-based limits are required if technology-based limits are not sufficient to protect the water body. Water quality-based effluent limitations required to meet water quality criteria in the receiving water are based on federal and state regulations, including the Basin Plan. In California, the SWRCB and the RWQCBs implement and enforce the NPDES program.

Southeast Plant, North Point, and Bayside Facilities NPDES Permit

The City currently holds an NPDES permit, adopted by the RWQCB in August 2013, that covers the SEP, the North Point Wet Weather Facility, and all of the bayside wet-weather facilities, including CSDs to the Bay.³⁹¹ The permit specifies discharge prohibitions, dry-weather effluent limitations, wet-weather effluent performance criteria, receiving water limitations, sludge management practices, and monitoring and reporting requirements. The permit prohibits overflows from the combined sewer discharge structures during dry weather, and requires wet-weather overflows to comply with the nine minimum controls specified in the federal CSO Control Policy, described above, and the City's Long-Term Control Plan. Areas that drain to the city's combined sewer system—the vast majority of the city, including the Plan Area—are subject to this permit.

As also discussed above in regard to the federal CSO Control Policy, the NPDES permit does not explicitly regulate the number, volume, duration, or frequency of CSDs from the combined sewer system, but instead requires that the system meet the long-term average annual design goals for CSDs. Under the Long-Term Control Plan, the City must optimize operations of the combined sewer system to minimize CSD frequency, magnitude, and duration and maximize pollutant removal during wet weather and must also provide treatment of all discharges from the combined sewer system, including CSDs. The NPDES permit also requires

³⁹⁰ San Francisco Bay Regional Water Quality Control Board, *Waste Discharge Requirements for Mercury and PCBs from Municipal and Industrial Wastewater Discharges to San Francisco Bay*, Order No. R2-2012-0096, NPDES No. CA0038849, adopted December 12, 2012. Available at http://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2012/R2-2012-0096.pdf pdf, accessed October 2, 2014.

³⁹¹ Regional Water Quality Control Board, San Francisco Bay Region, National Pollutant Discharge Elimination System (NPDES) Permit No. CA0037664, Order No. R2-2013-0029, for City and County of San Francisco Southeast Water Pollution Control Plant, North Point Wet Weather Facility, Bayside Wet Weather Facilities and Wastewater Collection System, adopted January 31, 2008.

the City to monitor the water quality of all CSDs and the efficacy of wet weather discharge controls. If the CSDs cause a violation of water quality standards in the receiving water, the City must evaluate its Long-Term Control Plan and combined sewer system operation to ensure compliance with water quality standards.

Local and Regional Regulations and Plans

Stormwater and Wastewater Management

Stormwater Management Ordinance and Stormwater Management Requirements and Design Guidelines

Development projects that discharge stormwater to the combined sewer system or a separate stormwater system must comply with the City's Stormwater Management Ordinance contained in Article 4.2 of the *Public Works Code*, Section 147, which was last updated on April 27, 2016. The SFPUC and the Port of San Francisco have developed San Francisco Stormwater Management Requirements and Design Guidelines in accordance with the requirements of Article 4.2.

The Stormwater Management Requirements and Design Guidelines describe the regulatory context for a post-construction stormwater control program and provide four tools to help project developers achieve compliance with stormwater management requirements, including but not limited to:

- A set of stormwater BMP fact sheets;
- A vegetation palette to assist in bioretention BMP-appropriate plant selection;
- Sizing calculators to determine the required size of each BMP; and
- Illustrative examples of green infrastructure.

In accordance with the Stormwater Management Requirements and Design Guidelines, developers of projects that create and/or replace 5,000 square feet or more of impervious surfaces and discharge to the combined sewer system must implement BMPs to manage the flow rate and volume of stormwater going into the sewer system by achieving the equivalence of Leadership in Energy and Environmental Design (LEED)® for New Construction Version 2.2 Sustainable Sites Credit 6.1 (Stormwater Design—Quantity Control).³⁹² For covered projects with less than 50 percent existing impervious surfaces, the stormwater management approach must prevent the runoff flow rate and volume from exceeding existing conditions for the one- and two-year 24-hour design storm. For covered projects that include more than 50 percent impervious surfaces—which is the case for the vast majority of the Plan Area—the stormwater management approach must reduce the existing runoff flow rate and volume by 25 percent for a two-year 24-hour design storm.

³⁹² LEED® is a green building certification system administered by the United States Green Building Council. The certification protocols are periodically updated (as of 2015, Version 4 is the newest version). However, LEED standards are not prescriptive in the way that, for example, the *Building Code* must be complied with, and the reference in the Stormwater Guidelines to a particular LEED credit is for information only.

The Stormwater Management Requirements and Design Guidelines also require developers to use certain preferred BMPs to the maximum extent feasible before considering use of remaining BMPs. The preferred BMP hierarchy prioritizes infiltration-based BMPs, rainwater harvesting, and vegetated roofs followed by lined bioretention (e.g., lined bioretention materials with an underdrain, commonly known as a “flow-through planter”). If none of these BMPs are feasible on site, projects may be able to incorporate high-rate filtration BMPs (e.g., tree-box filters and media filters) into their site design pending approval by the SFPUC.

The SFPUC inspects stormwater BMPs once they are constructed, and any issues noted by the inspection must be corrected. The owner is responsible for completing an annual self-certification inspection, and must submit completed checklists and maintenance logs for the year to the SFPUC. In addition, the SFPUC inspects all stormwater BMPs every third year. Any issues identified by either inspection must be resolved. Projects that are required to implement the San Francisco Stormwater Management Requirements and Design Guidelines are also subject to review by the Department of Building Inspection, and are subject to building code provisions that include provisions for managing drainage for new construction.

Modified Compliance Program

The City has developed the Modified Compliance Program to allow development projects with proven site challenges and limitations to modify the standard stormwater performance requirements set by the Stormwater Management Requirements and Design Guidelines. The Modified Compliance Program applies only to projects served by the combined sewer system.

In order to qualify for modified compliance, a site owner must submit a modified compliance application to the SFPUC that documents existing and proposed site features that limit infiltration such as high groundwater, shallow depth to bedrock, poorly infiltrating soils, steep slopes, contamination, or limited space for infiltration. The application also requires the applicant to estimate the non-potable demand for the project if the project is subject to the City’s Recycled Water Ordinance. Based on this information, the SFPUC can decrease the amount of stormwater runoff volume the applicant must reduce; and would increase the required flow rate reduction by the same percentage.

Construction-Related Stormwater Discharges to the Combined Sewer System

Discharges of construction-related stormwater runoff to the combined sewer system are subject to the construction site runoff requirements of Article 4.2 of the *Public Works Code*, Section 146. In accordance with these requirements, any site that disturbs more than 5,000 square feet of land must obtain a Construction Site Runoff Control Permit. Covered land disturbing activities include building demolition, clearing, grading, grubbing, filling, stockpiling, excavating, and transporting soil. The permit specifically requires easements for drainage facilities; provision of adequate dust controls in conformance with applicable air pollution laws and regulations; and improvement of any existing grading, ground surface, or site drainage to meet the requirements of Article 4.2. The application for the permit must also include an Erosion and Sediment Control Plan. For private projects, a building permit cannot be issued until a Construction Site Runoff Control Permit has been issued.

Under the Construction Site Runoff Control Permit, the site operator would be required to conduct daily inspections and maintenance of all erosion and sediment controls and must provide inspection and maintenance information to the SFPUC. The SFPUC would also conduct periodic inspections of the project site

to ensure compliance with the plan. The project sponsor would be required to notify the SFPUC at least two days prior to the start of construction, completed installation of erosion and sediment control measures, completion of final grading, and project completion. At the SFPUC's discretion, sampling, metering, and monitoring may also be required.

Wastewater Discharges to the Combined Sewer System

Discharges of non-sewage wastewater to the combined sewer system, such as groundwater produced during dewatering, are subject to the permit requirements specified in Article 4.1 of the *Public Works Code* and supplemented by Department of Public Works Order No. 158170. The permit requires development and implementation of a pollution prevention program and specifies discharge limitations for specific chemical constituents as well as general conditions for the discharge. In addition, the discharge must meet the pretreatment standards specified in Article 4.1 and the discharger must monitor the discharge quality for compliance with permit limitations. The discharger must also submit periodic reports to the SFPUC which also conducts periodic inspections to ensure compliance.

San Francisco Non-Potable Water Program

In 2012, the City amended the *Health Code* to add Article 12C, Alternate Water Sources for Non-Potable Applications (commonly referred to as the Non-potable Water Ordinance), to allow for the collection, treatment, and use of alternate water sources for non-potable applications. The ordinance was amended in 2013 to allow implementation of shared non-potable water systems for multiple buildings, referred to as district-scale water systems. In 2015, the ordinance was again amended: effective November 1, 2015, all new buildings of 250,000 square feet or greater that are within the City's designated recycled water use area,³⁹³ such as those within the Plan Area, must be constructed, operated, and maintained using available alternate water sources for toilet and urinal flushing and irrigation. As of one year later—November 1, 2016, this requirement will apply citywide to all new buildings 250,000 square feet in floor area or larger. Article 12C also requires that all new buildings of 40,000 square feet or larger prepare water budget calculations for review and approval by the SFPUC. In practice, Article 12C requires such new large buildings to employ non-potable water for toilet and urinal flushing, through the on-site collection, storage, treatment, and reuse of rain water, graywater (e.g., wastewater from bathtubs, showers, bathroom sinks, lavatories, clothes washing machines, and laundry tubs), water pumped from below grade for foundation drainage, and, if necessary, stormwater (surface runoff) and blackwater (e.g., wastewater from toilets, dishwashers, kitchen sinks, and utility sinks).

San Francisco Reclaimed Water Use Ordinance

The Recycled Water Ordinance, which added Article 22 of the *Public Works Code*, requires property owners to install recycled water systems in certain new construction, modified, or remodel projects. The goal of the ordinance is to maximize the use of recycled water. Buildings and facilities that are located within the designated recycled water use areas, such as those within the Plan Area, are required to use recycled water for

³⁹³ The recycled water use area covers downtown from Sansome Street east, South of Market from Seventh Street east and, west of Second Street, from Mission Street south, much of the Third Street corridor south to Newcomb Avenue, Hunters Point, Treasure Island and Yerba Buena Island, the Presidio, Golden Gate Park, Lincoln Park, the area around Lake Merced, and the Great Highway. The entire Central SoMa Plan Area is within the recycled water use area.

all uses authorized by the State of California. Some of the common uses include irrigation, cooling, and/or toilet and urinal flushing. These systems must meet San Francisco's *Plumbing Code* and *Health Code*, which include specifications for pipe type, pipe separation, backflow prevention assemblies, water meters, and signage.

The requirements of the Recycled Water Ordinance apply to properties located within the designated recycled water use areas under the following circumstances:

- New construction or major alterations to a building totaling 40,000 square feet or more;
- All subdivisions; and
- New and existing irrigated areas of 10,000 square feet or more.

While the City does not currently have a source of recycled water for use under this ordinance, new construction must be plumbed to use recycled water for non-potable purposes when and if recycled water becomes available.

San Francisco Sea Level Rise Guidance

The City has developed guidance for incorporating sea level rise into the planning of capital projects in San Francisco.³⁹⁴ The guidance presents a framework for considering the effects of sea level rise on capital projects implemented by the City and selecting appropriate adaptation measures based on site-specific information. The planning process described in the guidance includes six primary steps:

- Review sea level rise science;
- Assess vulnerability;
- Assess risk;
- Plan for adaptation;
- Implement adaptation measures; and
- Monitor.

As noted, this EIR considers the 2012 NRC report as the best available science on sea level rise in California. However, the guidance acknowledges that the science of sea level rise is continually advancing and projections of sea level rise may need to be updated at some point to reflect the most updated science. Sea level rise inundation maps prepared by the SFPUC, described above under the heading Sea Level Rise Inundation Mapping, are considered the most up-to-date maps and take into account both water level rises and the temporary effects of storm surge along the shoreline based on existing topography and conditions. The guidance states that the review of available sea level science should determine whether the project site could be subject to flooding during the lifespan of the project.

³⁹⁴ City and County of San Francisco Sea Level Rise Committee, *Guidance for Incorporating Sea Level Rise into Capital Planning in San Francisco*.

For those projects that cost \$5 million or more that could be inundated during their lifespan, the guidance requires a vulnerability assessment based on the degree of inundation that could occur, the sensitivity of the project to sea level rise, and the adaptive capacity of the project site and design (the ability to adjust to sea level rise impacts without the need for substantial intervention or modification). The risk assessment takes into consideration the likelihood that the project could be adversely affected by sea level rise and the related consequences of flooding. An adaptation plan is required for projects that are found to be vulnerable to sea level rise and have a potential for substantial consequences. The plan should focus on those aspects of the project that have the greatest consequences if flooded. It should include clear accountability and trigger points for bringing adaptation strategies online and a well-defined process to ensure that milestones are being met and the latest science is being considered.

The City's sea level rise guidance document also acknowledges that there is some flexibility in how to plan for adaptations, and it may not always be feasible or cost effective to design and build for long-term potential sea level rise scenarios that are of a highly uncertain nature, such as the upper end of the NRC report range for the year 2100 (66 inches of sea level rise). In this case, a capital project constructed by the City could be designed and constructed to be resilient to the likely mid-century sea level rise (11 inches by 2050). Under this guidance, an alternative approach would be to build the project to be resilient to the *likely* sea level rise by 2100 (36 inches), while including adaptive capacity to be resilient to the *upper range* of sea level rise estimates for 2100 (66 inches).

San Francisco Floodplain Management

San Francisco's Floodplain Management requirements are specified in the *Administrative Code*. For buildings located within a flood-prone area, this code requires the following:

- The building must be adequately anchored to prevent flotation, collapse, or lateral movement.
- The building must be constructed with materials and utility equipment that is resistant to flood damage, and with methods and practices that minimize flood damage.
- Electrical, heating, ventilation, plumbing, and air conditioning equipment must be designed or located to prevent water from entering or accumulating within the components during flooding.
- All water supply and sanitary sewage systems must be designed to minimize or eliminate infiltration of flood waters into the system as well as discharges from the systems into floodwaters.

For projects located in areas that could be prone to flooding from the combined sewer system during wet weather, the SFPUC may require additional actions such as provision of a pump station for sewage flows, raised elevation of entryways, special sidewalk construction, and deep gutters.³⁹⁵

³⁹⁵ San Francisco Planning Department, Planning Director Bulletin No. 4, Review of Project Identified in Areas Prone to Flooding.

IV.I.4 Impacts and Mitigation Measures

Significance Thresholds

For purposes of this EIR, the project would have a significant impact related to hydrology and water quality if it were to:

- Violate any water quality standards or waste discharge requirements;
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality; or
- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.

The analysis of violation of water quality standards or waste discharge requirements provided in Impact HY-1 also addresses significance criterion (a) from Section D.11, Utilities and Service Systems of the Initial Study (Appendix B):

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

This criterion is evaluated here because, as described above, the City's NPDES permit for discharges from its wastewater treatment facilities is issued by the RWQCB, and the analysis herein evaluates whether development pursuant to the Plan could result in a substantial increase in CSDs.

The complete list of CEQA significance criteria used in the hydrology and water quality analysis is included in Section D.15 of the Initial Study (see Appendix B), which also explains why the implementation of the Plan would not result in significant impacts on hydrology and water quality with respect to degradation of water quality during construction (Impact HY-1); depletion of groundwater and interference with groundwater recharge (Impact HY-2); alteration of drainage patterns (Impact HY-3); exceedance of the capacity of a stormwater system or providing an additional source of stormwater pollutants (Impact HY-4); flooding under existing conditions (Impact HY-5); and inundation by seiche, tsunami, or mudflow (Impact HY-7). Therefore, as discussed in Section IV, Overview, and in the Initial Study included in Appendix B, no further analyses of these topics are presented in this section. The Hydrology and Water Quality Section of the Initial Study determined that all construction-related hydrology and water quality impacts of the proposed project would be less than significant.

Approach to Analysis

This section addresses two impacts associated with long-term implementation of the Central SoMa Plan. The first impact analyzes the potential for projects in the Plan Area to exacerbate future flooding hazards, taking into account future sea level rise. The second impact analyzes the potential for changes in wastewater and stormwater flows to exceed the wastewater treatment requirements of the Bayside facilities of the City's combined sewer system or increase the frequency of CSDs from the Bayside Drainage Basin. The approach to analyzing these impacts is discussed below relative to the applicable significance criteria:

- **Exacerbate flooding conditions such that people or structures would be exposed to a significant risk from future flooding:** In the *California Building Industry Association v. Bay Area Air Quality Management District* case decided in 2015,³⁹⁶ the California Supreme Court held that CEQA does not generally require lead agencies to consider how existing hazards or conditions might impact a project's users or residents, except where the project would significantly exacerbate an existing environmental hazard. Accordingly, hazards resulting from a project that places development in an existing or future flood hazard area are not considered impacts under CEQA unless the project would significantly exacerbate the flood hazard. Thus, the analysis below evaluates whether the proposed project would exacerbate future flood hazards in the Plan Area and result in a substantial risk of loss, injury, or death. The impact is considered significant if implementation of individual development projects pursuant to the Plan, or overall development under the Plan, would exacerbate future flood hazards by increasing the frequency or severity of flooding or causing flooding to occur in an area that would not be subject to flooding without the project.
- **Exceed wastewater treatment requirements, violate water quality standards or waste discharge requirements, exceed the capacity of a storm drainage system, provide a substantial source of stormwater pollutants, or otherwise substantially degrade water quality:** Because stormwater and wastewater are conveyed in the same set of pipes within the Bayside Drainage Basin of the City's combined sewer system (and, indeed, in most of San Francisco), as described above in the Setting, the hydrology and water quality impacts related to changes in stormwater and wastewater flows are combined under one impact statement. This discussion is related to the analysis presented in Section D.11, Utilities and Service Systems of the Initial Study (Appendix B), which evaluates impacts related to the *capacity* of wastewater or stormwater facilities; however, this analysis focuses primarily on the potential to affect *water quality*.

In order to meaningfully determine the long-term impacts of Plan implementation on wastewater treatment requirements and contributions to CSDs from the combined sewer system, the impact analysis must account for the cumulative effects of wastewater and stormwater flows resulting from development pursuant to Plan implementation in combination with flows from other developments within the Bayside Drainage Basin because all flows are collected together and transferred to the SEP at the same time. Therefore, the Plan's direct impacts are analyzed together with cumulative impacts, and a separate cumulative impact analysis is not necessary.

The impact analysis is broken down as described below.

Dry weather flows to combined sewer system: The analysis considers whether implementation of the plan in combination with other developments would contribute additional wastewater to the City's combined sewer system to the extent that the contribution would cause the system to exceed the treatment requirements (with respect to volume and treatment level) or other permit requirements of the RWQCB-issued NPDES permit for the SFPUC's Bayside wastewater facilities. The impact is considered less than significant if the increase in dry weather flows remains within the treatment capacity of the SEP.

Wet weather flows to combined sewer system: The impact analysis examines whether changes in wastewater and stormwater flows from the Plan Area in combination with flows from other developments would contribute to an increase in combined sewer discharges to the Bay during wet weather. The impact is

³⁹⁶ *California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal.4th 369. Opinion Filed December 17, 2015.

considered less than significant if the changes in flows would not increase the frequency of CSDs above the long-term average specified in the NPDES permit for the SEP, the North Point Wet Weather Facility, and bayside wet-weather facilities.

Impact Evaluation

Note that each impact statement below corresponds to the impact statement in Section D.15, Hydrology and Water Quality, of the Initial Study (Appendix B) that also discusses the impact.

Impact HY-6: Development under the Plan, including the proposed open space improvements and street network changes, would not exacerbate future flood hazards in a manner that could expose people or structures to a significant risk of loss, injury, or death. (Less than Significant)

As discussed in the Environmental Setting, SFPUC inundation maps indicate that the Plan Area would not be permanently inundated with a sea level rise of 12 inches, which is expected by 2050 or a sea level rise of 36 inches that is expected by 2100.³⁹⁷

However, with 12 inches of sea level rise and 100-year storm surge, water levels could temporarily rise to 11 feet NAVD88 (-0.3 foot SFD). As shown on Figure IV.I-3, the southwest corner of the project area could be inundated to depths of at least two feet, with local inundation as deep as six feet.³⁹⁸ With 36 inches of sea level rise and 100-year storm surge, water levels could temporarily reach 13 feet NAVD88 (1.7 feet SFD) and a larger area within the southwest portion of the Plan Area would be flooded. As shown on Figure IV.I-4, most of the area bounded by Sixth Street, Folsom Street, Fourth Street, and Townsend Street would be inundated to depths of at least two feet with localized areas being inundated to depths of approximately eight feet. Under both scenarios, flooding in the Plan Area would result because the Mission Creek water levels would exceed the height of existing features along the northern shore of the creek.

Implementation of the Plan could significantly exacerbate future flood hazards related to sea level rise if development under the plan would expose areas to flooding that would not otherwise be subject to flooding, increase the depth of inundation during flood events, or prolong the duration of flooding. Development under the plan could have such effects if it were to reduce the capacity of the stormwater system, alter the configuration of the Mission Creek shoreline, or lower the elevation of finished grades below future flood levels.

As discussed under Impact HY-1 in the Initial Study (Appendix B), the entire Plan Area is developed. Impervious surfaces cover most of Plan Area, with the exception of existing parks and open spaces. Individual development projects that would be proposed and approved pursuant to the Plan would be required to comply with the Stormwater Management Ordinance and Stormwater Management Requirements and Design Guidelines. Given that the Plan Area is almost entirely covered with impervious surfaces at present, the Stormwater Management Ordinance would require a large majority of projects to reduce the peak rate and total volume of stormwater runoff from the two-year 24-hour design storm. Accordingly, projects would be

³⁹⁷ SFPUC, *Bayside Sea Level Rise Mapping*.

³⁹⁸ Note that the green zone shown within the Plan Area on Figure IV.I-2 is a depressed area that is not hydrologically connected to flooding zones and would not be inundated until flood waters reached a sufficient elevation to reach the area.

required to incorporate LID techniques into project design and to implement stormwater BMPs to reduce the flow rate and volume of stormwater entering the combined sewer system. Recommended BMPs to achieve these goals include infiltration methods such as vegetated roofs, pervious paving, and other measures to minimize impervious surfaces. This decrease in stormwater flows would offset overall increases in wastewater flows during wet weather such that total combined wet weather flows to the combined sewer system would not increase as discussed in Impact C-HY-2, below. Therefore, development in the Plan Area would not increase the frequency or severity of flooding due to the volume or rate of stormwater runoff, or cause flooding to occur in an area that would not be subject to flooding due to stormwater runoff without the project. Nor would the project include any modifications to the combined sewer system that would lessen the system capacity and result in flooding that would not have otherwise occurred. Further, the project would not alter the northern Mission Creek shoreline where low spots provide pathways for inundation.

As discussed in Impact HY-5 of the Initial Study (Appendix B), projects located in areas that are currently prone to flooding from the combined sewer system during wet weather would be reviewed by the SFPUC during the project approval process and may require additional actions such as incorporation of a pump station for sewage flows, raised elevation of entryways, special sidewalk construction, and deep gutters. These measures would reduce the potential for localized flooding to occur. Lastly, as discussed in the Setting Section above, improvements to the combined sewer system, proposed as part of the SSIP, are being planned with future sea level rise taken into consideration. Given all of the above, development in the Plan Area would not have the potential to exacerbate future flood hazards and this impact would be *less than significant*. No mitigation measures are required.

Although development within the Plan Area would not exacerbate future flood hazards, portions of the plan area would be exposed to an increased risk of flooding in the future due to sea level rise. The Plan includes objectives, policies and implementation measures intended to “Maximize Flood Resilience.” Policy 6.6.1 would develop a sea level rise and flood management strategy for the Plan Area aimed at developing targeted policies and programs to reduce flood risk. Implementation Measures 6.6.2.1 and 6.6.2.2 are intended to ensure that new development meets the flood resistant building standards of the City’s Floodplain Management Ordinance and *Building Code* and to develop and implement Flood Resistant Design Guidelines for representative building typologies in Central SoMa. Additionally, City capital projects, including critical facilities such as hospitals, jails, emergency response facilities (police, medical, and fire), and data centers used for City or other public data storage would be designed and constructed to minimize risks due to future flooding in accordance with the City’s sea level rise guidance for capital projects as further discussed above under the heading “San Francisco Sea Level Rise Guidance.”

Proposed Street Network Changes and Open Space Improvements

The proposed street network changes would not alter the elevation or grade of any of the streets and would not affect the northern shoreline of Mission Creek where low spots provide inundation paths for future flood flows. Further, in accordance with the Wastewater & Water Standards, the SFPUC would require that the reconfigured streets are designed to convey the existing flood flow capacity at a minimum.³⁹⁹ Therefore, the

³⁹⁹ San Francisco Public Utilities Commission, *General Manager Order, SFPUC Wastewater & Water Standards for Surface Improvement Project*, June 2014.

reconfigured streets and sidewalks would not redirect flood flows or exacerbate future flooding conditions. As discussed above under Regulatory Framework, street network changes and other capital planning projects of \$5 million or more in areas subject to flooding resulting from future sea level rise would be subject to the City's sea level rise guidance.

The proposed open spaces along Fourth and Bluxome Streets would be located in areas that could be flooded in the future as a result of sea level rise (no other open spaces would be located in such areas). However, the proposed open space improvements at these locations would not include the construction of any structures or filling of land that could cause flooding to occur in an area that would not be subject to flooding without the project or otherwise exacerbate future flooding conditions. In addition, Plan implementation would not result in the removal of any open space areas or other features that would currently impede the intrusion of flood waters. Nor would any of the proposed improvements substantially alter the frequency or severity of flooding. Further, all of the street network and open space improvements would likely include stormwater BMPs to enhance the infiltration of stormwater and reduce flood potential. Therefore, the street network changes and open space improvements would not have the potential to exacerbate existing or future flood hazards and this impact would be *less than significant*.

Mitigation: None required.

IV.I.5 Cumulative Impacts

Impact C-HY-2: Operation of individual development projects through implementation of the Plan, in combination with past, present, and foreseeable future development in San Francisco, would not exceed the wastewater treatment requirements of the Southeast Treatment Plant (SEP); violate water quality standards or waste discharge requirements; otherwise substantially degrade water quality; or result in an increase in the frequency of combined sewer discharges from the City's combined sewer system. (Less than Significant)

Growth within the Plan Area and most of the citywide growth would be on the city's Bayside, which is served by the SEP (and the North Point Wet Weather Facility in wet weather). In addition to the Plan Area, substantial growth on the Bayside would occur in the Market-Octavia, Central Waterfront, and Balboa Park Better Neighborhood Plan Areas; Candlestick Point and Hunters Point; Visitacion Valley; Mission Bay; and in the greater Downtown. To a lesser degree, growth would also occur in other areas such as transit corridors on Van Ness Avenue (and, potentially, Geary Street).⁴⁰⁰

As discussed above in the Setting, the volume of wet weather flows in the Bayside Drainage Basin varies due to the addition of stormwater during wet weather. When the increased flows exceed the combined storage and treatment capacity of the SEP and North Point Wet Weather Facility and the transport and storage boxes, excess flows are discharged to the Bay after receiving the equivalent of primary treatment. An increase in the frequency of CSDs from the watershed could be a concern because combined sewer discharges contain

⁴⁰⁰ *San Francisco General Plan*, Housing Element, Part I, Data Needs and Analysis, adopted April 27, 2015; Section IV.A, Meeting Housing Needs: New Housing Development Potential Under Existing Zoning. Available at http://www.sf-planning.org/ftp/files/plans-and-programs/planning-for-the-city/housing-element/2014HousingElement-Part_I_ADOPTED_web.pdf.

pollutants for which the Bay and Mission Creek are designated impaired water bodies pursuant to the Clean Water Act. Two aspects of the project in combination could result in long-term changes in flows to the City's combined sewer system in the Channel urban watershed: changes in the amount of wastewater generated and changes in stormwater runoff volumes and rates. The effects of these factors on the combined sewer system are closely related, and the combined effect on the frequency of CSDs to the Bay is discussed below, along with the potential to exceed the wastewater treatment capacity of the SEP.

Changes in Wastewater Flows

Growth under the Plan along with other citywide growth would increase year-round wastewater flows to the Bayside Drainage Basin as described below.

Increases in Plan Area Wastewater Generation

The Plan would accommodate new development in the Plan Area, which would, in turn, result in an increase of up to 14,500 residential units and up to 63,600 jobs in the Plan Area. The volume of wastewater flows to the combined sewer system with implementation of the Plan would be directly related to the amount of water used for purposes such as washing dishes and clothes, hand washing, flushing of urinals and toilets, and water cooled heating and ventilation systems. The discussion below focuses on the increased water demand and associated wastewater generation that would occur with implementation of the Plan.

The anticipated growth in the Plan Area would conservatively increase the amount of water used by approximately 1.7 mgd, based on the SFPUC's water use calculator.⁴⁰¹ However, the related increase in wastewater flows would not be as great for several reasons. First, development projects implemented pursuant to the Plan would be required to comply with San Francisco's Non-Potable Water program, described in the Regulatory Setting, which requires the developers of buildings of 250,000 square feet or more to use non-potable water for toilet and urinal flushing. One potential source of non-potable water for these purposes is the use of graywater generated on site (e.g., wastewater from bathtubs, showers, bathroom sinks, lavatories, clothes washing machines, laundry tubs, and cooling). If future developers utilize on-site graywater for toilet and urinal flushing, the amount of wastewater discharged to the combined sewer would be reduced by the approximate volume of graywater used. Based on the SFPUC's water use calculator, approximately 0.9 mgd of the water demand would be suitable for use as graywater to fulfill the requirements of the Non-Potable Water Program. Because the program also allows the use of other non-potable water such as rain water and foundation drainage for these purposes, it is reasonable to assume that half of the non-potable water demand would be met with on-site sources of graywater. This would reduce wastewater flows by approximately 0.4 mgd, to 1.3 mgd.

Additionally, a portion of the water use is consumed on site, rather than discharged to the sewer. Consistent with the SFPUC's standard assumption for multi-family residential buildings, the amount of wastewater

⁴⁰¹ San Francisco Public Utilities Commission, Building-Scale Water Use Calculator. Prepared for Plan implementation by Environmental Science Associates, March 10, 2015. Default employment densities in the calculator were modified for consistency with Planning Department growth forecasts for the Plan Area, with the result being approximately 27 more employment than under default assumptions.

discharged to the sewer would be approximately 95 percent of the water use.⁴⁰² This would reduce wastewater flows by approximately 0.1 mgd to 1.2 mgd. Also, the above estimate of water use does not account for use of recycled water in conjunction with the proposed Central SoMa Sustainability policies.

Finally, the *California Building Code* is updated every three years; after each update, the City adopts most of the statewide changes into its own *Building Code*. Future code versions are likely to include more stringent water conservation and recycling requirements that would decrease the potable water demand for future development projects, although the effects of these as of yet undefined changes on wastewater flows cannot be quantified.

Increases in Citywide Wastewater Generation

Growth in the Plan Area would contribute to a citywide increase of about 92,000 residential units as well as a citywide employment increase of about 191,000 jobs by 2040. As a result, citywide water use would also increase as estimated in the SFPUC's 2015 Urban Water Management Plan (UWMP). As discussed in that document, the citywide water demand has historically declined prior to 2015, due in large part to increasingly more efficient plumbing fixtures. However, the SFPUC projects in the UWMP that the citywide water demand will reach a point at which conservation savings will no longer outpace anticipated population and job growth by around 2018.⁴⁰³ Thus, the citywide water demand is forecasted to increase steadily through 2040. After accounting for the projected conservation savings, the retail water demand is projected to increase from 64.8 mgd in 2015 to 83.9 mgd in 2040. This is an increase of 19.1 mgd, or 29 percent over water use in 2015.

Based on the citywide projected 19.1 mgd increase in water use, year-round citywide wastewater discharges to the combined sewer system would increase by about 18.1 mgd by 2040, assuming a 95 percent conversion factor.

Effects on Wastewater Treatment Capacity

As stated above, most of the future development in San Francisco is expected to occur within the Bayside drainage basin of the combined sewer system which is served by the SEP. Existing dry-weather flows to the SEP are 60 mgd, or approximately 24.5 mgd less than the permitted 84.5 mgd capacity of the plant. The entire 19.1 citywide increase in wastewater flows would be approximately 74 percent of the remaining dry-weather capacity of the SEP. For the Plan Area, the increase in wastewater generation would be up to approximately 1.2 mgd of the projected city-wide increase as noted above. Therefore, during dry weather, impacts related to exceeding the wastewater treatment requirements of the San Francisco Regional Water Quality Control Board would be less than significant. No mitigation measures are required.

⁴⁰² The 95 percent of water use assumed to be discharged to the combined sewer system is consistent with the SFPUC's standard assumption for multi-family residential buildings (SFPUC, "Wastewater Service Charge Appeal" webpage: <http://www.sfwater.org/index.aspx?page=132>; reviewed February 28, 2016). The SFPUC assumes that non-residential (and single-family residential) uses discharge 90 percent of water used to the combined sewer. The 95 percent figure is used here for both residential and non-residential uses for purposes of a conservative assessment of combined sewer system demand.

⁴⁰³ San Francisco Public Utilities Commission, *2015 Urban Water Management Plan for the City and County of San Francisco*, June 2016.

Changes in Stormwater Runoff

As discussed above, development within the Plan Area in combination with citywide growth would increase year-round wastewater discharges to the combined sewer system. While the amount of wastewater generated would be within the dry-weather capacity of the SEP, the increased flows could contribute to an increase in the frequency of CSDs from the Bayside Drainage Basin during wet weather with the addition of stormwater flows. However, anticipated reductions in stormwater flows would alleviate the effects of wastewater discharges on CSDs as discussed below.

In accordance with San Francisco's Stormwater Management Ordinance (*Public Works Code* Article 4.2) and Stormwater Management Requirements and Design Guidelines, individual development projects that would be proposed and approved pursuant to the Plan and individual development projects throughout the Bayside Basin would need to comply with the City's Stormwater Management Requirements and Design Guidelines. Accordingly, all projects that create or replace 5,000 square feet or more of impervious surfaces would be required to minimize the flow and volume of stormwater into the combined sewer system. The Plan Area, and most of the city, is almost entirely covered by impervious surfaces at present, and the vast majority of development projects would be located on sites that are already developed. Therefore, a large majority of projects would be required to achieve a 25 percent reduction in the peak rate and total volume of stormwater runoff from the two-year 24-hour design storm, compared to existing conditions.

To achieve compliance, the project sponsors for individual development projects would be required to incorporate low-impact design (LID) techniques into the project design and to implement stormwater BMPs to reduce the flow rate and volume of stormwater entering the combined sewer system. Recommended BMPs to achieve these goals include infiltration methods such as vegetated roofs, pervious paving, and other measures to minimize impervious surfaces. Reuse of stormwater for non-potable uses such as landscape irrigation, toilet and urinal flushing in accordance with the City's Non-Potable Water Program would also reduce the volume of stormwater discharged to the combined sewer system. As discussed in Impact HY-4 of the Initial Study (Appendix B), the Stormwater Control Plan prepared for each project in accordance with the Stormwater Management Requirements and Design Guidelines would describe BMPs that would be implemented to achieve the specified reduction in stormwater flow rates and volumes as well as a plan for post-construction operation and maintenance of the BMPs. The plan must be reviewed and approved by the SFPUC to certify compliance with the Stormwater Management Requirements and Design Guidelines, and the SFPUC would inspect stormwater BMPs once they are constructed to confirm that they perform as designed.

With implementation of required stormwater control measures by individual development projects as required by the Stormwater Management Ordinance and the Stormwater Management Requirements and Design Guidelines, implementation of the Plan would contribute to a decrease in the volume of stormwater flows relative to existing conditions.

Net Impact on Combined Sewer Discharges

As discussed above, implementation of the Plan and other development projects in San Francisco would facilitate new development that would contribute to a citywide increase in year-round sanitary sewage flows, but would also decrease stormwater runoff to the combined sewer system through compliance with the Stormwater Management Ordinance and the Stormwater Management Requirements and Design Guidelines.

The estimated 1.2 mgd of wastewater produced as a result of plan implementation represents less than 0.1 percent of the annual 1.3 billion gallons of combined wastewater and stormwater discharge to the Bay via the Bayside CSD structures annually. The reduction in stormwater flows is expected to offset estimated increases in wastewater flows during wet weather such that there would not be an increase in wet weather CSDs.

Further, as described in the Setting, the SFPUC is implementing the SSIP, a \$7 billion, 20-year capital program to proactively address system-wide needs and update the aging combined sewer system. Specific projects planned under the SSIP will improve the management of wet weather flows to the Bayside Drainage Basin of the City's combined sewer system. The Central Bayside System Improvement Project will include improvements to provide redundancy to the Channel force main that transports flows from the Channel Pump Station to the SEP and assist the SFPUC in controlling the number of CSDs from the Bayside Drainage Basin.⁴⁰⁴ This project also includes construction of green and gray infrastructure to reduce stormwater flows to the combined sewer system. Improvements to the North Point Wet Weather Facility will include rehabilitation of the outfall to improve its operational reliability as well as wet weather pump station improvements. Green infrastructure projects in the Channel urban watershed include several measures to manage stormwater before it enters the combined sewer system and reduce the volume of stormwater discharges. These include integration of bioretention planters and permeable pavement into bulb outs along Fell and Oak Streets as well as in the parking lanes and alleys along and adjacent to the Wiggle bike path extending from Market Street to Golden Gate Park. Implementation of these projects would further reduce stormwater flows to the Bayside Drainage Basin which would contribute to a reduction in CSDs during wet weather.

Therefore, both cumulative and plan-level water quality impacts related to a violation of water quality standards or degradation of water quality associated with changes in CSDs to the Bay would be *less than significant*.

Mitigation: None required.

Proposed Street Network Changes and Open Space Improvements

Neither the repaving, construction of wider sidewalks and sidewalk bulbs, and installation of mid-block traffic signals that would be conducted as part of the proposed street network changes, nor the proposed open space improvements, would substantially alter the street system or include construction of any facilities that would increase the volume of wastewater discharges to the combined sewer system. Additionally, these improvements would likely include stormwater BMPs to enhance the infiltration of stormwater and reduce stormwater discharges to the combined sewer system. Therefore, water quality impacts related to violation of water quality standards or degradation of water quality associated with changes in CSDs to the Bay would be *less than significant* for the proposed street network changes and open space improvements.

Mitigation: None required.

⁴⁰⁴ San Francisco Public Utilities Commission, Wastewater Enterprise Capital Improvement Program Quarterly Report (July 2014 to September 2014). December 2, 2014.

Impact C-HY-3: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable future projects, would not exacerbate future flood hazards that could expose people or structures to a significant risk of loss, injury, or death. (Less than Significant)

The geographic scope for impacts related to future flooding as a result of sea level rise includes the entire waterfront. The projects that are included in the cumulative scenario for purposes of this analysis are described in Section II.G, Other Reasonably Foreseeable Projects.

As shown in Figure IV.I-3 and Figure IV.I-4, existing and future development along the city's shoreline could be exposed to an increased risk of coastal flooding in the future due to sea level rise. However, neither the Plan, including proposed street network changes and open space improvements, nor any cumulative projects would alter the northern shoreline of Mission Creek where low spots provide pathways for inundation. Similarly, compliance with the City's Stormwater Management Ordinance and Stormwater Management Requirements and Design Guidelines would ensure that stormwater flows to the combined sewer system are reduced and would not exacerbate existing flooding conditions within the combined sewer system. Therefore, development under the Plan, including the proposed street network changes and open space improvements, in combination with past, present and reasonably foreseeable development would not increase the frequency or severity of flooding, or cause flooding to occur in areas that would not be subject to flooding without the proposed project in combination with cumulative development. Therefore, cumulative development would not have the potential to exacerbate existing or future flood hazards and this impact would be *less than significant*.

Mitigation: None required.

CHAPTER V

Other CEQA Considerations

The California Environmental Quality Act (CEQA) Guidelines Section 15126 requires that all aspects of a project must be considered when evaluating its impact on the environment, including planning, acquisition, development, and operation. As part of this analysis, the Environmental Impact Report (EIR) must also identify (1) significant environmental effects of the proposed project; (2) significant environmental effects that cannot be avoided if the proposed project is implemented; (3) significant irreversible environmental changes that would result from implementation of the proposed project; (4) growth-inducing impacts of the proposed project; (5) mitigation measures proposed to minimize the significant effects; and (6) alternatives to the proposed project.

V.A Significant Environmental Effects of the Proposed Project

Table S-1, Summary of Impacts of the Plan—Identified in the EIR, and Table S-2, Summary of Impacts of the Plan—Identified in the Initial Study, both of which are contained in the Summary chapter; and Sections IV.A through IV.I of this EIR provide a comprehensive identification of the environmental effects of the Central SoMa Plan (the Plan), including the level of significance both before and after mitigation.

V.B Significant Environmental Effects That Cannot Be Avoided If the Proposed Project Is Implemented

CEQA Guidelines Section 15126.2(b) requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. Development of the proposed project would result in the following significant and unavoidable project-related and cumulative impacts, as further discussed in Sections IV.A, Land Use and Land Use Planning, IV.C, Cultural and Paleontological Resources, Section IV.D, Transportation and Circulation, Section IV.E, Noise and Vibration, Section IV.F Air Quality, and Section IV.G, Wind.

V.B.1 Land Use and Land Use Planning

Impact LU-2: Development under the Plan, including proposed open space improvements and street network changes, would conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

Impact C-LU-1: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would contribute considerably to a significant cumulative land use impact.

V.B.2 Cultural and Paleontological Resources

Impact CP-1: Development under the Plan would result in the demolition or substantial alteration of individually identified historic architectural resources and/or contributors to a historic district or conservation district located in the Plan Area, including as-yet unidentified resources, a substantial adverse change in the significance of an historical resource as defined in CEQA Guidelines Section 15064.5.

Impact C-CP-1: Development under the Plan, in combination with past, present, and reasonably foreseeable future projects in the vicinity, could result in demolition and/or alteration of historical resources, thereby contributing considerably to significant cumulative historical resources impacts.

V.B.3 Transportation

Impact TR-3: Development under the Plan, including the proposed open space improvements and street network changes, would result in a substantial increase in transit demand that would not be accommodated by local transit capacity, and would cause a substantial increase in delays resulting in adverse impacts on local and regional transit routes.

Impact TR-4: Development under the Plan, including the proposed open space improvements and street network changes, would not result in pedestrian safety hazards nor result in a substantial overcrowding on sidewalks or at corner locations, but would result in overcrowding at crosswalks.

Impact TR-6: Development under the Plan, including the proposed open space improvements and street network changes, would result in a reduction in on-street commercial loading supply such that the loading demand during the peak hour of loading activities would not be accommodated within on-street loading supply, would impact existing passenger loading/unloading zones, and may create hazardous conditions or significant delay that may affect transit, other vehicles, bicycles, or pedestrians.

Impact TR-9: Construction activities associated with development under the Plan, including the proposed open space improvements and street network changes, would result in substantial interference with pedestrian, bicycle, or vehicle circulation and accessibility to adjoining areas, and would result in potentially hazardous conditions

Impact C-TR-3: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would contribute considerably to significant cumulative transit impacts on local and regional transit providers.

Impact C-TR-4: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would contribute considerably to significant cumulative pedestrian impacts.

Impact C-TR-6: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would contribute considerably to significant cumulative loading impacts.

V.B.4 Noise and Vibration

Impact NO-1: Development under the Plan, including the proposed street network changes, would generate noise that would result in exposure of persons to noise in excess of standards in the *San Francisco General Plan* or Noise Ordinance (Article 29 of the *Police Code*), and would result in a substantial permanent increase in ambient noise above existing levels.

Impact NO-2: Development under the Plan, including the proposed street network changes and open space improvements, would result in construction activities in the Plan Area that could expose persons to substantial temporary or periodic increases in noise levels substantially in excess of ambient levels

Impact C-NO-1: Development under the Plan, including the proposed street network changes and open space improvements, in combination with past, present, and reasonably foreseeable future projects, would result in cumulative noise impacts.

V.B.5 Air Quality

Impact AQ-3: Operation of subsequent individual development projects in the Plan Area and street network changes, but not proposed open space improvements, would violate an air quality standard, contribute to an existing or projected air quality violation, and/or result in a cumulatively considerable net increase of criteria pollutants for which the project region is in nonattainment under an applicable federal or State ambient air quality standard.

Impact AQ-5: Development under the Plan, including proposed street network changes, would result in operational emissions of fine particulate matter (PM_{2.5}) and toxic air contaminants that would result in exposure of sensitive receptors to substantial pollutant concentrations.

Impact C-AQ-1: Development under the Plan, including proposed street network changes, but not open space improvements, in combination with past, present, and reasonably foreseeable future projects in the vicinity, under cumulative 2040 conditions, would contribute considerably to criteria air pollutant impacts.

Impact C-AQ-2: Development under the Plan, including the proposed street network changes, but not open space improvements, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would result in exposure of sensitive receptors to substantial levels of fine particulate matter (PM_{2.5}) and toxic air contaminants under 2040 cumulative conditions.

V.B.6 Wind

Impact WI-1: Subsequent future development anticipated under the Plan could alter wind in a manner that substantially affects public areas.

V.C Significant Irreversible Environmental Changes That Would Result If the Proposed Project Is Implemented

In accordance with CEQA Section 21100(b)(2)(B), and CEQA Guidelines Section 15126.2(c), an EIR must identify any significant irreversible environmental changes that could result from implementation of the proposed project. This may include current or future uses of 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 ensure that such current consumption is justified.

In general, such irreversible commitments include resources such as energy consumed and construction materials used in construction of a proposed project, as well as the energy and natural resources (notably water) that would be required to sustain a project and its inhabitants or occupants over the usable life of the project. This latter commitment of resources essentially assumes that residents or occupants would not require a similar commitment but for the proposed project; that is, in the case of the Plan, occupants of Plan Area office space would not work in San Francisco, new residents in Plan Area dwelling units would not live in San Francisco, and guests in new Plan Area hotel rooms would not visit the city, unless new development in the Plan Area were undertaken. Such a condition is unlikely (because other office space, residential units, and hotel rooms are and would continue to be available in the city and because only a portion of employees or residents in any given new building would be likely to relocate to the area as a result of their employment or housing). This assumption is consistent with similar conservative assumptions underlying the rest of the analyses in the EIR (e.g., that trips generated by workers, residents, and guests to and from Plan Area buildings would not occur in San Francisco unless new development were constructed).

In this light, while implementation of the Plan would intensify development in the Plan Area, the density and land use intensity of subsequent development would be generally in keeping with the scale and intensity of the urban, built-out land use and development pattern characteristic of greater Downtown San Francisco.

The Plan is a regulatory program and would result in new planning policies and controls for land use to accommodate additional jobs and housing. Other than the proposed street network changes and open space improvements, the Plan itself would not result in direct physical changes to the environment and thus would not directly result in physical impacts of commitment of nonrenewable resources. However, implementation of development under the Plan would commit future generations to an irreversible commitment of energy, primarily in the form of fossil fuels for heating and cooling of buildings, for automobile and truck fuel, and for energy production for lighting, computers, and other equipment in the Plan Area buildings. Implementation of the Plan would also require an ongoing commitment of potable water for building occupants and landscaping, although the Plan promotes a variety of policies and implementation measures addressing sustainability that could, among other things, lead to reductions in potable water and energy consumption, by through optimizing use of non-potable water infrastructure and creating an overall district where only non-potable water is used for non-potable uses. The Plan includes policies that address the area's energy demands by calling for a net zero carbon energy district and incentives to encourage the implementation of community-scale clean energy projects.

Demolition and construction of subsequent development projects in the Plan Area would also require the use of fossil fuels and the commitment of construction materials, such as steel, aluminum, other metals, concrete, masonry, lumber, sand and gravel, and other such materials, as well as water. Because subsequent development in the Plan Area would be required to comply with *California Code of Regulations* Title 24, the *California Green Building Standards Code*, and the City's Green Building Ordinance, future buildings built in the Plan Area would use less energy and water over their lifetime than comparable buildings not built to those standards. Therefore, subsequent development in the Plan Area would not use non-renewable resources in a wasteful manner.

V.D Growth Inducement

The CEQA Guidelines require that an EIR evaluate the growth-inducing impacts of a proposed action (Section 15126.2(d)). A growth-inducing impact is defined in the CEQA Guidelines Section 15126.2(d) as:

[T]he ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth ... It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

A project can have direct and/or indirect growth-inducement potential. Direct growth inducement would result if a project involved construction of new housing that would result in new residents moving to the area. A project can have indirect growth-inducement potential if it would establish substantial new permanent employment opportunities (e.g., commercial, industrial or governmental enterprises) or if it would involve a substantial construction effort with substantial short-term employment opportunities and indirectly stimulate the need for additional housing and services to support the new employment demand. Similarly, under CEQA, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service. Increases in population could tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. The CEQA Guidelines also require analysis of the characteristics of projects that may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.

As described in the Overview Section of Chapter IV, Environmental Setting, Impacts, and Mitigation Measures, the Plan's proposed zoning changes would expand the Plan Area's capacity for growth through a "planning horizon" year of 2040, during which time up to an additional 14,500 residential units and up to an additional 63,600 jobs could be accommodated within the Plan Area. The anticipated population and job growth in the Plan Area would represent a portion of the approximately 92,000 residential units and about 191,000 jobs that are anticipated citywide by 2040 in *Plan Bay Area*.

Implementation of the Plan would generate greenhouse gas emissions associated with Plan Area population growth and settlement pattern, as well as from indirect subsequent activities (e.g., construction, vehicle trips, residential and commercial energy demand, etc.) in the Plan Area. Although implementation of the Plan would increase development capacity, the Plan's policies and regulations would be directed to an area of the city that has been designated a Priority Development Area (PDA) in *Plan Bay Area*. *Plan Bay Area* is a long-range integrated transportation and land-use/housing strategy through 2040 for the San Francisco Bay Area.

Plan Bay Area provides a strategy for meeting 80 percent of the region's future housing needs in PDAs. These are neighborhoods within walking distance of frequent transit service, offering a wide variety of housing options, and featuring amenities such as grocery stores, community centers, and restaurants. *Plan Bay Area* grew out of the California Sustainable Communities and Climate Protection Act of 2008 (SB 375), which requires each of the state's 18 metropolitan areas – including the Bay Area – to reduce greenhouse gas emissions from cars and light trucks. More pointedly, one of the primary objectives of the Plan is to reduce greenhouse-gas emissions in accordance with State mandates under SB 375 by planning for more intensive new development in PDAs, like the Plan Area, to accommodate more population (and employment) in compact, walkable areas in proximity to transit. As explained in the Plan:

*This Plan asserts that Central SoMa should play a major role in accommodating the city's share of anticipated regional growth in jobs and housing. Accommodating substantial growth here can help address the local and regional issues of high rents, sprawl, and congestion, and the global issue of greenhouse gas emissions. The addition of millions of square feet of residential and commercial space is certain to help relieve price pressure. Simultaneously, dense development in this transit-rich, temperate, and walkable neighborhood can drastically reduce the amount of greenhouse gas emission per person from both buildings (e.g., for heating and cooling) and transportation (in terms of the amount of miles traveled in private vehicles), while reducing pressures for growth in more outlying areas of the region.*⁴⁰⁵

Thus, the Plan seeks to accommodate future employment growth in a part of San Francisco that is accessible to regional transit (BART on the north and Caltrain on the south) as well as the under-construction Central Subway Muni Metro extension, and is adjacent to existing job centers in both Downtown and Mission Bay. As stated in the Plan (under Goal 1, Increase the Capacity for Jobs and Housing), employment growth would be accommodated by changing the development capacity of the area by increasing the area where new office development could occur, by increasing the limits on how tall buildings can be, and by removing density controls. The potentially significant impacts of new employment growth associated with the Plan are described in this EIR. In this regard, adoption and implementation of the Plan could be seen as removing an impediment to future population and employment growth forecasted for San Francisco. The Plan would serve to accommodate this growth in a way that is more sustainable, given access to transit, than were such employment growth to be diverted to more outlying portions of the Bay Area with less density and less access to local and regional transit.

As stated in *Plan Bay Area*, “in order to meet the Bay Area's GHG emissions reduction and housing targets, and to make progress toward meeting the other adopted performance targets, *Plan Bay Area* encourages future job and population growth in established communities with access to existing or planned transportation investments.”⁴⁰⁶ Therefore, this city-centered growth would be consistent with *Plan Bay Area's* objectives to direct growth into PDAs, which would also reduce GHG emissions from growth otherwise expected to occur.

The physical environmental effects of implementing the Plan's objectives and policies, including proposed changes in use districts and height limits, are described in Chapter IV, Environmental Setting, Impacts, and Mitigation Measures.

⁴⁰⁵ San Francisco Planning Department, *Draft Central SoMa Plan*, August 2016, p. 5. Available at http://default.sfplanning.org/Citywide/Central_Corridor/Central_SoMa_Plan_full_report_FINAL.pdf, accessed on October 25, 2016.

⁴⁰⁶ Association of Bay Area Governments and Metropolitan Transportation Commission, *Plan Bay Area*, July 2013; p. 42. Available at http://files.mtc.ca.gov/pdf/Plan_Bay_Area_FINAL/Plan_Bay_Area.pdf, accessed on September 20, 2014.

V.E Areas of Known Controversy and Issues to Be Resolved

This section provides summarizes the comments received in response to the Notice of Preparation and Initial Study, identifies where in the EIR or Initial Study those topics are addressed, and provides additional details on other areas of known controversy or issues to be resolved, including socioeconomic effects, and relevant new State legislation and a State Supreme Court decision.

V.E.1 Comments on the Notice of Preparation and Initial Study

The public has expressed some concerns related to the Plan that are germane to the environmental topics reviewed in this EIR. Public comments are in response to a Notice of Availability of an NOP of an EIR and Notice of Public Scoping Meeting for the Central SoMa Plan that the Planning Department issued on April 24, 2013.⁴⁰⁷ Notices were mailed to adjacent cities and counties, other public agencies and interested parties announcing a scoping meeting where the public could comment on the scope of this EIR's environmental analysis. The meeting was held within the Plan Area at the Mendelsohn House, 737 Folsom Street on May 15, 2013, and four members of the public made comments that have been documented and addressed in the applicable sections of this EIR or Initial Study. Written comments on the NOP were accepted during a 30-day period from April 24, 2013, until May 24, 2013, and a total of seventeen comment letters were received.

Subsequently, the Planning Department published an Initial Study on February 12, 2014. Comments raised during the public scoping period and in response to the Initial Study are summarized in Chapter I, Introduction. Those comments pertaining to the environmental analysis have been addressed in the Initial Study (Appendix B) or in the EIR, depending on the topic. Please also see the below for a discussion of potential socioeconomic effects associated with the Plan, which are outside the scope of environmental review. Other comments beyond the purview of CEQA have not been addressed.

V.E.2 Socioeconomic Considerations under CEQA

CEQA requires review of the effects of a project that are related to a physical change to the environment. Social or economic impacts alone are not changes in physical conditions. Therefore, the CEQA Guidelines provide that social or economic impacts may not be treated as significant effects on the environment.⁴⁰⁸ Evidence of social or economic impacts (e.g., property values, rent levels, neighborhood demographics, etc.) that do not contribute to, or are not caused by, physical impacts on the environment is not substantial evidence of a significant effect on the environment. However, a social or economic change related to a physical change may be considered in determining whether a physical change is significant. Additionally, an EIR or other CEQA document must consider the reasonably foreseeable indirect environmental consequences or physical changes resulting from a project's economic or social changes.⁴⁰⁹ In short, social and economic effects are only relevant under CEQA if they would result in or are caused by an adverse physical impact on the environment. In that vein, the public's concerns related to socioeconomic issues that may be associated with

⁴⁰⁷ The Plan was known as the Central Corridor Plan at the time of the scoping meeting.

⁴⁰⁸ CEQA Guidelines Sections 15358(b), 15064(e), 15382.

⁴⁰⁹ CEQA Guidelines Sections 15064(d),(e)

the proposed Plan, including gentrification, displacement, and housing affordability, are briefly acknowledged here. Decision makers may consider these and other issues in their deliberations on approval of the proposed Plan.

Concerns have been raised in general throughout the city with regards to the loss of middle-income jobs and affordable housing. These socioeconomic effects are not considered environmental effects unless they are shown to result in physical impacts on the environment and must be linked to the action undergoing CEQA review. The following discussion addresses these socioeconomic concerns in the context of regional planning efforts and, in more detail, as they relate to land use conversion and the development and availability of affordable housing.

Regional Planning Efforts

The Plan Area is designated as a Priority Development Area (PDA) in *Plan Bay Area*. Specifically, the Plan Area is located in the Eastern Neighborhoods PDA.⁴¹⁰ *Plan Bay Area* notes that the communities within the Eastern Neighborhoods PDA are diverse in both population and business types, and are home to substantial residential areas, as well as neighborhood-serving retail and much of the city's industrial land. *Plan Bay Area* is relevant to the Central SoMa Plan because the Central SoMa Plan seeks to accommodate jobs and housing projected by ABAG consistent with the land use strategy in *Plan Bay Area* by increasing the development capacity for jobs and housing in the Central SoMa Plan Area, a designated PDA. As with *Plan Bay Area*,⁴¹¹ the Central SoMa Plan would not induce population growth, but rather seeks to accommodate growth that is projected for the region. The anticipated increased population from either new jobs or housing, in addition to regional economic trends favoring office jobs, could result in displacement of housing and jobs independent of adoption of the Central SoMa Plan. The Central SoMa Plan would accommodate anticipated increased population growth within the Plan Area and absent policies to maintain a diverse workforce and range of housing affordability, localized displacement of certain types of jobs and housing units could occur.

The Central SoMa Plan includes a number of objectives, policies, and implementation measures to address concerns regarding the diversity of jobs and affordable housing. Specifically Goal 1 of the Plan is to increase the capacity for jobs and housing that the Plan could encourage and create. The implementation measures under this goal call for changes in allowable land uses, building heights, and spatial configurations of buildings that may be developed in the Plan Area, and would constitute the primary physical changes to the

⁴¹⁰ An exception is a small notch of the Plan Area at Fourth and Clementina Streets, which is located within the Downtown-Van Ness-Geary PDA.

⁴¹¹ The *Plan Bay Area* Final EIR noted that "displacement pressure is a function of population growth; it is not an environmental impact that is caused by the Plan. The Plan will not, in itself, create population growth. On the contrary, the Plan is the regional strategy to accommodate the projected population and job growth in an equitable and efficient manner in partnership with local governments who retain local land use authority."

The *Plan Bay Area* Final EIR also stated that *Plan Bay Area* includes an investment strategy intended to reduce the risk of displacement, including three major programs: the One Bay Area Grant program, which requires jurisdictions to have a certified housing element and rewards jurisdictions for production of housing for low- and very-low-income residents; the Bay Area Transit Oriented Affordable Housing Fund, a revolving loan fund for land acquisition for affordable housing development near rail and bus lines; and the Bay Area Regional Prosperity Plan, which seeks to "refine and implement the elements of the overall regional growth strategy (including *Plan Bay Area*) to help create middle-income jobs and develop and preserve affordable housing in transit-served communities." *Plan Bay Area Final Environmental Impact Report*, July 2013; page 3.1-31.

environment that are analyzed in this EIR. Goals 2 and 3 of the Plan addresses the socioeconomic concerns related to PDR jobs and affordable housing by (a) protecting PDR space within the Plan Area and the larger SoMa area while also allowing for a substantial amount of new office jobs and (b) setting affordability requirements for the Plan Area in an effort to ensure that 33 percent of new housing is affordable to very low, low, and moderate income households. Thus, the Central SoMa Plan, through Goals 2 and 3, seeks to address socioeconomic concerns related to business and residential displacement.

PDR Displacement and Economic Outcomes

Changes to zoning and height and bulk districts would alter the existing urban form by allowing for taller buildings with possibly greater spatial diversity, which would change the appearance, use, and character of the neighborhood. Where residential and office uses in mixed-use buildings replace existing PDR spaces, the activities that typically occur in the area, as well as building styles, heights, and frontages, may change. The potential for such changes to affect the visual character of the Plan Area and vicinity is analyzed in Impact AE-1 in Section IV.B, Aesthetics. Additionally, development of new office employment uses would result in more pronounced activities during the daytime hours. Residential development would result in more pedestrian activity and less truck or utility vehicle movement. Ground-floor commercial space is more likely to include display windows and thus provide more visual interaction at the pedestrian level. Personal services that accompany both office and residential development may include shops and restaurants, which would activate the street past typical PDR business hours. These changes would likely alter the type and intensity of economic activity within the Plan Area, which is anticipated to remain vibrant and diverse.

Inasmuch as the Plan would eliminate both the SLI and SALI use districts in the Plan Area (with the exception of the area beneath and adjacent to the elevated I-80 freeway, between Fourth, Sixth, Harrison, and Bryant Streets where SALI would remain), and rezone these areas MUO or WS-MUO, the Plan would substantially eliminate any remaining use-district-based protection for PDR uses in much of the Plan Area. In the current economic climate, it can be anticipated that office, some hotel, and, where permitted, residential use would predominate in much of the Plan Area, and that many PDR uses would be subject to displacement pressure. Once land zoned for industrial uses is converted to residential or other non-PDR uses, it can be very difficult to reclaim these areas for traditional PDR uses, because residential and office uses increase the land value, making it infeasible for some PDR uses to compete for that same space. Such changes could be detrimental to those who are reliant on traditional PDR businesses for income or commodities.

While eliminating much of the area zoned more strictly for PDR, the Plan also includes numerous provisions to protect PDR uses and to allow a mix of PDR and other uses in the same district. These measures, contained in Plan Objective 3.3, are designed to “Ensure the removal of protective zoning does not result in a loss of PDR in the Plan Area.”⁴¹² In addition, Plan Policy 1.1.10 states, “While continuing to protect traditional PDR 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

⁴¹² It should be noted that a reduction in the amount of PDR building space (and number of PDR jobs) is anticipated in areas where the Plan would not change the existing zoning, primarily in the existing WS-MUG zoning district where it is anticipated that approximately 800,000 sf of PDR space would be converted to other uses (equating to about 1,400 PDR jobs). This condition is anticipated to occur irrespective of the proposed Plan and is not an impact of the Plan.

physically with their research, design and administrative functions.” As such, PDR uses would still be an activity type represented in the area, albeit in a contemporary manner, in which PDR use would be integrated with other compatible uses on a singular site.

Housing

By accommodating demand for jobs and housing consistent with regional growth projections and, in particular, by increasing the supply of both market-rate *and* affordable housing, the Central SoMa Plan would provide some relief to the city’s housing market pressures. However, what effect development under the Plan would have on housing affordability is a matter of considerable controversy. While there is general consensus that the high cost of market-rate housing and the limited supply of affordable housing in San Francisco are causing displacement of lower-income residents in the city, opinions differ on the underlying causes.

The City Office of the Controller – Office of Economic Analysis determined that new market-rate housing in San Francisco has the effect of lowering, rather than raising, housing values at the local and citywide level.^{413,414} Research also indicates that at the regional scale, producing more market-rate housing will result in decreased housing prices, and reduce displacement pressures (although not as effectively as subsidized housing). However, at the local level, market rate housing would not necessarily have the same effects as at the regional scale, due to a mismatch between demand and supply.⁴¹⁵ The influx of real estate investment and higher income, residents may increase gentrification of a neighborhood, with displacement of households being a negative outcome. The Central SoMa Plan could alleviate this effect through policy goals aimed at ensuring that 33 percent of new housing in the Plan Area is affordable to very low, low, and moderate-income households.

CEQA prohibits the finding of significant impacts that are not based on substantial evidence of adverse physical changes to the environment. As described above, these social and economic concerns related to diversity of jobs and affordable housing are being addressed through the City’s planning and policy development processes for the Central SoMa Plan. There is no evidence that the Plan would result in potential social and economic effects that would indirectly result in significant effects to the physical environment and are therefore beyond the scope of this EIR. Changes to the physical environment as a result of the Central SoMa Plan are addressed in the appropriate environmental topics in this EIR and the accompanying Initial Study (Appendix B).

V.E.3 CEQA Statute Section 21099(b)

CEQA Section 21099(b)(1) requires that the State Office of Planning and Research (OPR) develop revisions to the CEQA Guidelines establishing criteria for determining the significance of transportation impacts of

⁴¹³ City and County of San Francisco, City Office of the Controller – Office of Economic Analysis, *Potential Effects of Limiting Market-Rate Housing in the Mission*, September 10, 2015.

⁴¹⁴ The analysis further determined that locally imposing limits on market-rate housing in the city would, in general, place greater upward pressure on city housing prices, and reduce affordable housing resources to a greater extent than if no limit on market-rate housing were imposed.

⁴¹⁵ Berkeley Institute of Governmental Studies (IGS), *Housing Production, Filtering and Displacement: Untangling the Relationships*, May 2016.

projects that promote the “reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses.” CEQA Section 21099(b)(2) states that upon certification of the revised CEQA Guidelines for determining transportation impacts pursuant to Section 21099(b)(1), automobile delay, as described solely by level of service (LOS) or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA.

In January 2016, OPR published for public review and comment a *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA*⁴¹⁶ (proposed transportation impact guidelines) recommending that transportation impacts for projects be measured using a vehicle miles traveled (VMT) metric. VMT measures the amount and distance that a project might cause people to drive, accounting for the number of passengers within a vehicle.

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

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

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

Accordingly, this EIR does not contain a discussion of automobile delay impacts. Instead, a VMT and induced automobile travel impact analysis is provided in Section IV.D, Transportation and Circulation. The EIR, however, does provide a brief discussion of automobile delay in Section IV.D, Transportation and Circulation, for informational purposes. Nonetheless, automobile delay may be considered by decision-makers, independent of the environmental review process, as part of their decision to approve, modify, or disapprove the proposed plan.

⁴¹⁶ This document is available at https://www.opr.ca.gov/s_sb743.php.

V.E.4 Senate Bill 32

On September 8, 2016, Governor Jerry Brown signed Senate Bill 32 (SB32), which requires the State to further reduce GHG emissions by 40 percent below 1990 levels by year 2030. However, the City's 2008 GHG Reduction Ordinance had already established a citywide reduction goal of 40 percent below 1990 levels by year 2025.⁴¹⁷ The City's 2013 Update to the Climate Action Strategy⁴¹⁸ demonstrates that its GHG reduction strategies are predicted to reduce San Francisco's carbon footprint by 44 percent below the 1990 level by 2025, which would exceed the reduction requirements of its ordinance, which has a target date that precedes the new state law by five years. Consequently, even with the adoption of SB32, continued compliance with the City's existing regulations to reduce GHG emissions, other ongoing City, and State regulations that will continue to reduce projects' contribution to climate change.

V.E.5 CBIA v. BAAQMD

In the California Building Industry Association v. Bay Area Air Quality Management District case decided in 2015,⁴¹⁹ the California Supreme Court held that CEQA does not generally require lead agencies to consider how existing environmental conditions might impact a project's users or residents, except where the project would significantly exacerbate an existing environmental condition. Accordingly, the analysis in this EIR evaluates whether the Plan could significantly exacerbate the existing or future environmental conditions. Where an impact of subsequent development under the Plan may be significant, the analysis evaluates the effects of that environmental condition on the new users, those residents and employees that would be brought to the Plan Area.

⁴¹⁷ San Francisco Environment Code, Chapter 9, Sections 900 through 908, "2008 GHG Reduction Ordinance", Ordinance No. 81-08, Approved April 29, 2008.

⁴¹⁸ City of San Francisco, Climate Action Strategy 2013 Update, October 2013, p. vii, Available at http://sfenvironment.org/sites/default/files/engagement_files/sfe_cc_ClimateActionStrategyUpdate2013.pdf, accessed October 27, 2016.

⁴¹⁹ *California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal.4th 369. Opinion Filed December 17, 2015.

CHAPTER VI

Alternatives

VI.A Introduction

The California Environmental Quality Act (CEQA) Guidelines, Section 15126.6(a), state that an environmental impact report (EIR) must describe and evaluate a reasonable range of alternatives to the proposed project that would feasibly attain most of the project's basic objectives, but that would avoid or substantially lessen any identified significant adverse environmental effects of the project. An EIR is not required to consider every conceivable alternative to a proposed project and is not required to consider alternatives that are infeasible. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

The EIR must evaluate the comparative merits of the alternatives and include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. Specifically, the CEQA Guidelines set forth the following additional criteria for selecting and evaluating alternatives:

- [T]he discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly. (Section 15126.6(b))
- The range of potential alternatives shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. (Section 15126.6(c))
- The specific alternative of "no project" shall also be evaluated along with its impact. (Section 15126.6(e)(1))
- The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision-making. (Section 15126.6(f))

This chapter identifies alternatives to the Central SoMa Plan (the Plan) and discusses environmental impacts associated with each alternative, relative to those of the Plan.

This chapter analyzes the following alternatives to the Plan:

- No Project Alternative;
- Reduced Heights Alternative;
- Modified TODCO Plan;

- Land Use Variant; and
- Land Use Plan Only Alternative.

The discussion also considers the extent to which each alternative has the ability to meet the project objectives. As discussed in Chapter II, Project Description, the Plan's eight goals are used as the project objectives. These are:

1. Increase the capacity for jobs and housing;
2. Maintain the diversity of residents;
3. Facilitate an economically diversified and lively jobs center;
4. Provide safe and convenient transportation that prioritizes walking, bicycling, and transit;
5. Offer an abundance of parks and recreational opportunities;
6. Create an environmentally sustainable and resilient neighborhood;
7. Preserve and celebrate the neighborhood's cultural heritage; and
8. Ensure that new buildings enhance the character of the neighborhood and the city.

Table VI-1, Development Assumptions for Alternatives to the Central SoMa Plan, sets forth a description of development assumptions for the alternatives and compares them to the Plan.⁴²⁰ Development assumptions underpinning the various alternatives in this chapter are derived primarily from the same Planning Department growth forecasts discussed under Analysis Assumptions in the Overview section at the start of Chapter IV, and modified based on the descriptions of the alternatives in terms of development potential, particularly on the change in permitted uses and allowable building height and bulk. Please note that the Land Use Plan Only Alternative would have the same population and employment growth, development intensity, and locations of development as the Plan. Accordingly, only a limited number of environmental effects would change under this alternative as compared to the Plan.

VI.B Alternative 1: No Project

VI.B.1 Description

CEQA Guidelines Section 15126.6(e)(3)(A) indicates that, generally, when a project being analyzed is the revision of an existing land use or regulatory plan—such as the Plan and the *Planning Code* and Zoning Map revisions that would implement the Plan—the No Project Alternative should be considered to be a continuation of the existing plan into the future. CEQA Guidelines Section 15126.6(e)(3)(A) states “Typically this is a situation where other projects initiated under the existing plan will continue while the new plan is developed. Thus, the projected impacts of the proposed plan or alternative plans would be compared to the impacts that would occur under the existing plan.” Consistent with this guidance, the No Project Alternative

⁴²⁰ Development assumptions for the alternatives do not take into account the potential for application of the density bonus for affordable housing projects enabled by AB 2501.

TABLE VI-1 DEVELOPMENT ASSUMPTIONS FOR ALTERNATIVES TO THE CENTRAL SOMA PLAN

	Central SoMa Plan^a	No Project Alternative	Reduced Heights Alternative	Modified TODCO Plan	Land Use Variant
Household Growth (Increase from Baseline) ^b	14,400	9,200	12,400	12,700	12,900
<i>Difference from Plan</i>	—	(5,200)	(2,000)	(1,700)	(1,500)
Population Growth (Increase from Baseline) ^c	25,500	16,300	21,900	22,500	22,800
<i>Difference from Plan</i>	—	(9,200)	(3,600)	(3,000)	(2,700)
Residential Square Feet (Increase from Baseline)	17,280,000	10,800,000	14,880,000	15,240,000	15,480,000
<i>Difference from Plan</i>	—	(6,480,000)	(2,400,000)	(2,040,000)	(1,800,000)
Employment Growth (Jobs) (Increase from Baseline)	63,600	27,200	55,800	56,700 ^d	66,200
<i>Difference from Plan</i>	—	(36,400)	(7,800)	(6,900)	2,600
Office Square Feet (Increase from Baseline)	10,430,000	5,000,000	9,151,000	9,299,000 ^e	10,857,000
<i>Difference from Plan</i>	—	(5,430,000)	(1,279,000)	(1,131,000)	427,000
Non-Office Square Feet (Increase from Baseline)	4,007,000	1,900,000	3,515,000	3,572,000 ^d	4,171,000
<i>Difference from Plan</i>	—	(2,107,000)	(492,000)	(435,000)	164,000

SOURCES: San Francisco Planning Department, 2013, 2016; TODCO, 2013; ESA, 2016.

NOTES:

Values rounded to nearest 100; some columns and rows do not add due to rounding.

Values in parentheses represent a reduction from the Plan.

The Land Use Plan Only Alternative would have the same growth and building development characteristics as that presented for the Plan in this table. See text for additional discussion.

- a. The 2016 Central SoMa Plan is contained entirely within the boundaries of the 2013 draft Plan Area. The Department analyzed projected growth in employment and residential uses for the 2013 draft Plan and determined that 95 to 97 percent of this projected growth is anticipated to occur in the 2016 draft Plan Area. Thus, the numbers presented in this table, are conservative (i.e., higher) and would not substantively alter the conclusions reached in this EIR. These modifications to the growth assumptions would not result in substantial or more severe physical impacts for topics evaluated in the Initial Study.
- b. Assumes 95 percent occupancy of housing units.
- c. Assumes 1.77 persons per household.
- d. Based on same factors as in Planning Department projections.
- e. From TODCO Plan, p. 9, with addition of Planning Department projected growth north of Folsom Street (primarily in C-3 use districts).

considered in this EIR, with respect to the Plan, is the maintenance of the existing zoning and height and bulk controls in the Plan Area, with no adoption of the Plan. This alternative assumes that development within the Plan Area would proceed consistent with existing land use controls, including the Western SoMa and East SoMa Area Plans and existing use and height and bulk districts. The No Project Alternative would not include implementation of the Plan's proposed street network changes, nor would the open spaces or open space improvements set forth in the Plan be expected to be implemented. Although both the East SoMa Plan and the Western SoMa Plan call for increasing the amount of open space in their respective plan areas, neither adopted area plan identifies specific park sites or open space improvements to facilitate these plans' respective policy objectives. Therefore, no specific open space or street network improvements are assumed under the No Project Alternative other than efforts currently under way or recently completed, such as the proposed Sixth Street Improvement Project along the western boundary of the Plan Area (which would include widened sidewalks and street tree planting), and the new Annie Alley Plaza (off of Mission Street between Second and Third Streets) and portions of San Francisco Public Works' SoMa Alleyway Improvement Project that are

located in the western portion of the Plan Area, along Minna, Natoma, Tehama, Clementina, Shipley, and Clara Streets. Individual development projects under the No Project Alternative are assumed to meet Better Streets Plan requirements.

As described in the introduction to Chapter IV, the growth projections for the No Project Alternative include the addition by 2040 of approximately 9,200 households and 16,300 residents (about 36 percent less than with implementation of the Plan) and approximately 27,200 jobs (57 percent less than with the Plan). These assumptions reflect allowable development under existing zoning, allocated with respect to use according to historical development patterns in and around the Plan Area. Total floor area developed for the No Project Alternative (17.7 million square feet) would be about 44 percent less than with implementation of the Plan (31.7 million square feet).

The No Project Alternative assumes that growth in the Plan Area and the city would occur with or without implementation of the Plan, but that, absent implementation of the Plan, a smaller percentage of citywide growth would occur within the Plan Area.

VI.B.2 Alternative 1—No Project Alternative: Impacts

Land Use and Land Use Planning

The No Project Alternative would not result in any amendments to use districts as proposed by the Plan; parcels would remain zoned as they are currently. Under the No Project Alternative, the existing area plans would continue and the policies and objectives of these plans would apply to the respective areas currently within either the Western SoMa or East SoMa Area Plan boundaries as applicable. Changes in land use would be expected to occur more slowly under the No Project Alternative, compared to those with implementation of the Plan because, without changes in use districts (e.g., SLI to MUO) and increased height limits, there would be less incentive to redevelop many of the parcels in the Plan Area. Moreover, as shown in Table VI-1, less overall development would occur in the Plan Area, compared with that forecast under the Plan. Like the Plan, this alternative would not physically divide an existing community, as it would not introduce physical barriers, nor would the No Project Alternative conflict with plans adopted for the purpose of avoiding or mitigating an environmental effect, and these impacts would be less than significant.

Neither would the No Project Alternative include the Plan's proposed street network changes or open space improvements, and as a result, this alternative would not involve any construction within, or alter the physical or operational characteristics of, current public rights of way or open space areas. Consequently, the No Project Alternative would not include new mid-block crosswalks or other improvements that would improve connectivity within and adjacent to the Plan Area (Impact LU-1). Development under the Plan would result in additional traffic that would increase traffic noise levels throughout the Plan Area vicinity. As shown in Table IV-E.9, Cumulative Plus Plan Traffic Noise Analysis, under 2040 cumulative no project conditions traffic noise levels would increase by 3 dBA or more along Fourth Street between Brannan and Townsend Streets, which would be a significant and unavoidable impact and would conflict with *General Plan* policy regarding traffic noise (Impact LU-2).

Aesthetics

Under the No Project Alternative, new development that could occur would be incremental and anticipated to be similar to that which already exists in the Plan Area. Aesthetic changes would be substantially less noticeable than those of the Plan because there would be no increase in allowable building heights in the Plan Area and therefore, it would be less likely for new buildings over 85 feet in height to be developed south of Folsom Street, except potentially along the south side of Folsom Street between Hawthorne and Mabini Streets, where such heights are already allowed. Elsewhere in the Plan Area, new buildings that are taller than existing buildings could be constructed, up to a height of 85 feet along parts of Folsom, Harrison, Second, Third, and Fourth Streets, and Fifth and Sixth Streets north of Harrison Street. However, the visual changes would be less substantial than with construction of several towers of 160 feet or more in height as proposed under the Plan. It should be noted that under the No Project Alternative, existing conditions such as underutilized sites—including surface parking lots—as well as the lack of sidewalks in portions of the Plan Area, may remain unchanged in the absence of development that could occur under the proposed Plan. However, it is also possible that even without the proposed Plan, development on a site, particularly a site not currently developed to its maximum potential under existing zoning and/or height and bulk district controls, could occur and result in an intensification of use on that site. Similar to the proposed Plan, development under the No Project Alternative would not adversely affect the visual character of the Plan Area or scenic resources, nor would it substantially alter the existing public views of the Plan Area, result in substantially increased light and glare (because new development must comply with Planning Commission Resolution 9212), or make a considerable contribution to adverse aesthetic conditions in the Plan Area. Aesthetic impacts would be less than significant, as would be the case with the proposed Plan.

The No Project Alternative would not include the Plan's proposed street network changes and open space improvements, and consequently, would avoid any of the Plan's aesthetic impacts (albeit less than significant) associated with those improvements.

Cultural and Paleontological Resources

Historic Architectural Resources

Under the No Project Alternative, identified historic resources would not be included in Articles 10 and 11 of the *Planning Code*, which provide added protection to these resources. The No Project Alternative would result in less intensive development within the Plan Area than would the Plan. However, as with the Plan, subsequent development projects consistent with existing zoning and height and bulk districts could result in demolition or substantial alteration of individually identified historic architectural resources or contributing resources to a historic district or conservation district located in the Plan Area. Because the No Project Alternative would not increase the allowable building heights as would the Plan, this alternative would likely result in less development pressure for redevelopment of “underutilized” sites. It cannot be predicted that, absent the Plan and its specific policies addressing historical resources, that a resource otherwise would not or could not be demolished. Accordingly, the No Project Alternative would not necessarily avoid the Plan's significant and unavoidable impact on historic architectural resources. Cumulative impacts on historical resources would likewise be significant and unavoidable, as would be the case for the Plan. During environmental review of those subsequent development projects, project-specific mitigation measures

comparable to those identified in Section IV.C, Cultural and Paleontological Resources (avoidance or minimization of effects on historical resources, documentation of historical resource(s), creation of oral histories and/or interpretive programs, video recordation, protection of historical resources from adjacent construction activities, and implementation of construction monitoring programs for historical resources) could be imposed on individual developments, as appropriate, to reduce significant impacts on historic architectural resources. However, these comparable mitigation measures may not eliminate the significant and unavoidable impact because it cannot be known for certain whether the mitigation measures would avoid demolition or substantial alteration of a historical resource, or whether the mitigation measures would reduce potential impacts on historic districts to a less-than-significant level. Thus, the impact of the No Project Alternative on historical resources would be significant and unavoidable.

The No Project Alternative would also not include construction the Plan's proposed street network changes and open space improvements, and consequently, would avoid construction-related impacts to architectural historical resources (albeit less than significant) associated with those improvements.

Archeological Resources, Human Remains, and TCRs

The No Project Alternative would result in less development within the Plan Area than would the Plan. However, as with the Plan, subsequent development projects completed consistent with existing zoning could result in excavation that might disturb prehistoric and/or historic-period archeological resources, human remains, and/or tribal cultural resources; any of these occurrences could result in a significant impact. During environmental review of those subsequent development projects, project-specific mitigation measures that have been adopted through East SoMa and West SoMa Plan implementation comparable to those identified in Section IV.C, Cultural and Paleontological Resources (preparation of a project-specific Preliminary Archeological Assessment and implementation of procedures for accidental discovery of archeological resources) would be expected to reduce this impact of projects in the Plan Area to a less-than-significant level. Cumulative impacts would likewise be less than significant with mitigation, as with the Plan.

The No Project Alternative would also not include construction the Plan's proposed street network changes and open space improvements, and consequently, would avoid the significant but mitigable impacts to archeological resources, and the less-than-significant impacts to human remains and tribal cultural resources, associated with construction of those improvements.

Paleontological Resources

As noted above, the No Project Alternative would result in less development than would the Plan, as well as none of the Plan's street network changes and open space improvements. Impacts on paleontological resources would be less than significant, both for this alternative and cumulatively, as would be the case with the Plan, given the low sensitivity of Plan Area soils for such resources.

Transportation and Circulation

VMT

Under the No Project Alternative, residential growth in the Plan Area would be about 36 percent less and employment growth would be about 57 percent less by 2040 than is assumed under the Plan. As with the Plan, the average daily VMT per capita for conditions without the Plan would be substantially lower than the Bay Area regional average for the residential, office, and retail land uses (see Table IV.D-6, Average Daily VMT per Capita, SF-CHAMP Model Data, Existing (2012) and 2040 Conditions, in Section IV.D, Transportation and Circulation). Under the No Project Alternative, average daily VMT per capita would be slightly greater than for the Plan for the residential (2.1 versus 1.9 VMT per capita) and retail (4.4 versus 4.2 VMT per capita) categories, and slightly lower in the office category (8.2 versus 8.7 VMT per capita). Thus, as with the Plan, the No Project Alternative would meet the goal of reducing residential VMT per capita by 10 percent compared to year 2005 conditions. The No Project Alternative would not include any transportation features that would substantially induce automobile travel, but would lack the street network changes proposed under the Plan that would likely further reduce VMT by promoting alternative transportation modes. Thus, impacts under the No Project Alternative related to VMT would be less than significant, as would be the case with the Plan.

Traffic Hazards

Under the No Project Alternative, development of the residential and non-residential land uses would not introduce unusual design features, and, with the new development, the study area traffic hazards would remain similar to existing conditions. As with the Plan, increases in vehicle, pedestrian and bicycle travel associated with new development would result in the potential for increased vehicle-pedestrian and vehicle-bicycle conflicts, but these increases would not be considered a new traffic hazard. The No Project Alternative would lack the street network changes proposed under the Plan that would help further reduce the number of conflicts. Thus, the impact related to traffic hazards under the No Project Alternative would be less than significant, as would be the case with the Plan.

Transit

Under the No Project Alternative, transit ridership would increase about 22 percent less than with implementation of the Plan. While there would be less development and fewer transit trips under the No Project Alternative than for the Plan, the additional transit trips would result in significant impacts to Muni downtown screenlines and Central SoMa cordons under No Project and 2040 cumulative conditions, although to a lesser extent than would be the case with the Plan. However, the No Project Alternative would not result in significant impacts to regional transit capacity utilization under existing plus No Project and 2040 cumulative conditions, and therefore, cumulative impacts related to regional transit capacity utilization under the No Project Alternative would be less than significant.

As with the Plan, development in the Plan Area under the No Project Alternative would increase traffic congestion, causing delays for Muni buses and regional transit carriers that operate on city streets (i.e., Golden Gate Transit and SamTrans), a significant and unavoidable impact. There would be no mechanism for plan-level mitigation measures under the No Project Alternative, thus the mitigation measures identified for the Plan would not be implemented, and transit capacity impacts would be significant and unavoidable. The

No Project Alternative also would not include the Plan's proposed transit improvements, including dedicated transit lanes and bus bulbs at select locations, and would result in fewer benefits to transit service.

Pedestrian and Bicycle Impacts

In terms of pedestrian and bicycle operations, the No Project Alternative would result in about three-fourths of the Plan's travel by these modes. As discussed above, the No Project Alternative would not implement the Plan's proposed street network changes including new bicycle lanes and cycle tracks, widened sidewalks, and new mid-block crosswalks. The No Project Alternative would not avoid the Plan's significant impacts with respect to pedestrian crowding in crosswalks under existing plus Plan and 2040 cumulative conditions, and would also result in significant impacts at one or more sidewalk and corner locations under 2040 cumulative conditions. Therefore, pedestrian impacts would be significant and unavoidable under the No Project Alternative.

The growth in bicycle travel would also be less substantial under the No Project Alternative, compared to conditions with the Plan. However, as noted above, this alternative would not implement the Plan's bicycle improvements, which would reduce the degree to which the No Project Alternative would improve conditions for bicycling, compared to the Plan. Nevertheless, it is anticipated that bicycle-related impacts of the No Project Alternative would be less than significant, as under the Plan.

Loading

With less development than under Plan implementation, the No Project Alternative would result in less growth in demand for off-street freight loading spaces, on-street commercial loading spaces, and passenger loading/unloading spaces. As discussed above, because the No Project Alternative would not include the street network improvements, and thus not remove on-street commercial loading spaces and passenger loading/unloading zones, this alternative would avoid the Plan's significant and unavoidable impact. Therefore, impacts of the No Project Alternative related to loading would be less than significant.

Parking

Development in the Plan Area under the No Project Alternative would increase parking demand, not all of which would be expected to be met on-site within new developments, given that *Planning Code* parking controls in the Plan Area govern maximum amounts of parking and do not generally require any off-street parking. Under the No Project Alternative, the increase in parking demand would be less than with implementation of the Plan. Further, the No Project Alternative would not include the Plan's street network changes, which would result in permanent removal of about 200 on-street parking spaces on Harrison, Bryant, Brannan, Second, Third, Fourth, and Sixth Streets; and prohibit peak-period use for another approximately 400 on-street spaces. Therefore, inasmuch as parking-related impacts of the Plan would be less than significant, the No Project Alternative would also have a less-than-significant impact with respect to parking.

Emergency Vehicle Access

While development in the Plan Area would not introduce unusual design features or change the Plan Area street network as to hinder or preclude emergency vehicle access, such development would increase traffic

volumes. California law requires that drivers yield the right-of-way to emergency vehicles and emergency vehicles would be able to travel within transit-only lanes, and fire and rescue vehicles would be able to mount the raised separation between vehicle travel lanes and any protected cycle track or transit-only lanes. Although traffic congestion could slow emergency vehicle response times, it would not impede emergency vehicle access. The No Project Alternative would result in less development in the Plan Area than would occur with Plan implementation and would not include the proposed street network changes that would remove mixed-flow travel lanes. Because it is the combination of Plan growth plus the street network changes that results in a significant Plan impact, impacts on emergency vehicle access would be less than significant under the No Project Alternative.

Construction Impacts

Under the No Project Alternative, less development would occur within the Plan Area than under the Plan, and the street network changes would not be implemented. However, there are a number of development projects on file within the Plan Area, as described in Chapter IV, Overview. These projects are dependent on the Plan's proposed zoning, and under the No Project Alternative, zoning and height limits would not change. Therefore, under the No Project Alternative, many of these projects would not move forward as currently proposed, and the overall pace and intensity of development are likely to be less. Although significant construction-related impacts could occur, it is likely that mitigation measures similar to Mitigation Measure M-TR-9, Construction Management Plan and Construction Coordination, to reduce construction effects would be applied on a project-by-project basis. It is anticipated that due to slower pace of development, implementation of Mitigation Measure M-TR-9 would be able to reduce the impact to less than significant.

Noise and Vibration

Build out of the respective existing area plan portions of the Plan Area under the No Project Alternative would result in less traffic-generated noise, compared to that under Plan, such that noise impacts from traffic would be less than significant. However, under cumulative conditions, traffic noise associated with No Project Alternative would be significant, as with the Plan, because traffic from cumulative development without the Plan would result in an increase in noise of more than 3 dBA on one of the Plan Area roadway study segments (Fourth Street between Brannan and Townsend Streets). Nevertheless, the No Project Alternative would avoid the Plan's significant and unavoidable traffic noise impact on Howard Street. While subsequent environmental review may identify impacts with regard to noise, there is no guarantee that impacts from a subsequent development project could be mitigated to a less-than-significant level. Because the degree to which vehicle trips (and their associated noise levels) could be reduced by future mitigation or identified TDM Plan cannot be reliably estimated, and because no other feasible mitigations are available, cumulative traffic noise under the No Project Alternative would result in a significant and unavoidable impact to existing noise-sensitive uses.

Under the No Project Alternative, zoning would not change, and therefore, the mixed-use zoning proposed by the Plan, which allows residential uses in proximity to other noise generating uses (e.g., PDR and entertainment), would not be implemented. Therefore, there would be less potential for incompatible uses co-locating within the same use district. New noise-generating uses developed under the No Project Alternative would be subject to the *San Francisco Building Code*, *San Francisco Green Building Code*, and

Regulation of Noise from Places of Entertainment, which would reduce impacts on sensitive land uses to a less-than-significant level. New noise-sensitive land uses would be required to comply with existing noise control standards and would not be significantly affected, similar to the conclusions reached for the Plan.

As with the Plan, construction noise and construction vibration impacts would be addressed with implementation of mitigation measures on a project-specific basis. Under the No Project Alternative, construction noise mitigation measures similar to **Mitigation Measure M-NO-2a, General Construction Noise Control Measures**, and **Mitigation Measure M-NO-2b, Noise and Vibration Control Measures during Pile Driving**, would be applied to subsequent development projects to reduce construction noise effects. It is anticipated that due to slower pace of development, implementation of Mitigation Measures M-NO-2a and M-NO-2b would be able to reduce construction noise impacts to less than significant.

As noted in the description of this alternative, the No Project Alternative assumes that growth in the Plan Area and the city would occur with or without implementation of the Plan, but that, if the Plan is not adopted, less growth—5,200 fewer households and 5.4 million fewer square feet of commercial space—would occur within the Plan Area than would occur with implementation of the Plan. Therefore, this alternative could result in incrementally greater increases in traffic noise outside the Plan Area as a result of such development occurring outside the Plan Area. It can reasonably be anticipated that much of this development would occur within other parts of the city where area plans have been adopted in recent years, such as the remainder of East SoMa and Western SoMa, as well as the Transit Center District, the Central Waterfront (including Dogpatch), the Mission, and the Market and Octavia Plan Area, as well as within Downtown.

Air Quality and Greenhouse Gas Emissions

The relative reduction in vehicle trip generation under the No Project Alternative could also reduce local emissions of criteria air pollutants, greenhouse gases (GHGs), and traffic-generated toxic air contaminants (TACs). As with the Plan, VMT would increase by a lesser percentage (13.2 percent) than the service population (75 percent).⁴²¹ Future projects under the No Project Alternative would be subject to existing City programs that reduce criteria pollutant emissions and GHGs, as is described in Section IV.F, Air Quality, and in Section D.8, Greenhouse Gas Emissions, of the Initial Study (Appendix B). However, the potential would remain for one or more subsequent individual development projects in the Plan Area, if large enough, to violate an air quality standard, contribute to an existing or projected air quality violation, and/or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard. Unlike the Plan, no mitigation measures would apply in the form of a project-specific Transportation Demand Management Program (TDM) and associated reduction in vehicle trips would not be expected.⁴²² In the absence of certainty that emissions from every subsequent development project would be below the applicable significance thresholds, this would be a significant and unavoidable impact of the No Project Alternative.

⁴²¹ Service population is the combined household population plus employment.

⁴²² As noted in Chapter II, Project Description, the City is anticipated to adopt an ordinance by end of 2016 that would mandate TDM Programs in many new development projects.

Construction emissions of criteria pollutants from subsequent development projects would be less substantial under this alternative than with the Plan; also as with the Plan, construction emissions could be significant but available mitigation measures would likely be identified pursuant to individual project review under CEQA that would reduce the impact to a less-than-significant level.

As with the Plan, operation of subsequent developments could generate particulates and TACs that would worsen air quality and adversely affect sensitive receptors. While subsequent environmental review may identify impacts with regard to TAC exposure, there is no guarantee that such an exposure from a future subsequent development project could be mitigated to a less-than-significant level. Similar to the Plan, mobile sources generated by the future development projects under the No project Alternative could significantly affect the geography and severity of the Air Pollutant Exposure Zone. Because the degree to which trips (and thereby emissions) could be reduced by future mitigation or an identified TDM cannot be reliably estimated at this point, and because vehicle emissions are regulated at the State and federal level and local jurisdictions are preempted from imposing stricter emissions standards for vehicles, and because no other feasible mitigations are available, the impact of traffic-generated TACs would be significant and unavoidable. Construction-related emissions of particulates and TACs under the No Project Alternative would be significant, as with the Plan, but would likewise be mitigated to a less-than-significant level with implementation of mitigation measures identified during CEQA review for those projects that are similar to Mitigation Measure M-AQ-7, Construction Emissions Minimization Plan.

Impacts related to greenhouse gas emissions would be less than significant, as with the Plan, given that subsequent development projects would be required to comply with the City's Greenhouse Gas Reduction Strategy.

It is noted that, to the extent that development that may be precluded under the No Project Alternative from taking place in the Plan Area were to occur elsewhere in the Bay Area, particularly in outlying, less dense locations that are less well-served by transit, employees and residents of such developments could generate substantially greater impacts on air quality (specifically, regional criteria pollutants) and greenhouse gases than would be the case if a similar amount of office space, other non-residential space, or residential uses were developed in the Plan Area. The operational impacts of this type of development pattern would be relatively greater because lower office and residential densities reduces transit viability, making it likely that equivalent amounts of commercial and residential development would result in more vehicle trips in other locations increasing VMT and associated air pollutants. To the extent that the development occurs outside of Priority Development Areas (PDAs) identified in *Plan Bay Area*, that development could hinder meeting *Plan Bay Area's* regional GHG per capita targets. This could be a significant, albeit indirect and somewhat speculative, impact of the No Project Alternative.

Wind

While future construction would still take place under the No Project Alternative, this alternative would not increase allowable building heights within the Plan Area. In particular, this alternative would not permit buildings up to 400 feet in height, as would the Plan. The Plan, as analyzed in this EIR, also allows for four towers of 200, 240, 350, and 350 feet in height on the south side of Harrison Street between Second and Fourth Streets. Instead, height limits would remain as under existing conditions, at 85 feet or less from Harrison Street south, from Folsom Street south (to the west of Fourth Street), and from Howard Street south (to the west of

Fifth Street). Because buildings less than approximately 100 feet tall rarely result in wind hazard conditions and typically cause relatively minor changes in pedestrian level winds, the No Project Alternative would be unlikely to result in substantial wind effects in these areas, and thus wind impacts would be less than significant. This alternative, therefore, would eliminate a significant and unavoidable wind impact of the Plan.

Shadow

The No Project Alternative would substantially reduce shadow impacts compared to the Plan, though the Plan itself would result in less-than-significant shadow impacts. The maximum existing height limit in the Plan Area south of Folsom Street would largely remain at 85 feet or less. Structures built to existing height limits could cast small amounts of new shadow on certain parks and open spaces—notably South Park, but also including Gene Friend Recreation Center, and, potentially, Victoria Manalo Draves Park. Some shadow could be cast on South Park by structures only 40 feet tall, which would not be subject to the requirements of *Planning Code* Section 295. However, even with such development, South Park would maintain substantial mid-day sunlight throughout the year.

At Gene Friend Recreation Center, similar to the impact under the Plan, new buildings constructed across Sixth Street at the existing 85-foot height limit would cast shadow on portions of the Center in the early morning during much of the year. However, this new shadow would leave the park by shortly after 9:00 a.m., when this facility opens to the public. At Victoria Manalo Draves Park, development at the existing 85-foot height limit on the east side of Sixth Street between Folsom and Harrison Streets could potentially add new shadow very early in the morning (before 7:00 a.m.) for a few weeks around the summer solstice on June 21. However, new shadow would be very limited in time and extent. Therefore, impacts of No Project Alternative on Victoria Manalo Draves Park would be less-than-significant.

Under the No Project Alternative, shadow effects on Yerba Buena Gardens would be less than under the Plan, or may not occur, since much of the Plan's (less than significant) shadow impact on Yerba Buena Gardens would be from new buildings on Harrison Street and Fourth Street that would not be allowed under the No Project Alternative. Neither would new shadow reach the Alice Street Community Gardens, as only a small amount of shadow would occur under the Plan. Shadow impacts on streets and sidewalks would be reduced under the No Project Alternative, because building height limits would not be increased and shadows would not be as long as the shadows cast by taller buildings that could be developed under the Plan. Overall, shadow impacts would be substantially less severe than with the Plan, and thus shadow impacts of the No Project Alternative would be less than significant as are shadow impacts of the Plan.

Hydrology and Water Quality (Sea Level Rise and Combined Sewer System)

As discussed in Section IV.I, Hydrology and Water Quality, future flooding in the Plan Area from sea level rise could occur due to low points along the northern Mission Creek shoreline that could provide pathways for inundation. Development under the No Project Alternative, as under the Plan, would not alter the northern shoreline of Mission Creek. Further, the Plan Area is entirely developed and future development activities would not likely raise or lower the ground surface in a manner that would redirect flood flows. As with implementation of the Plan, development under the No Project Alternative could be affected by future sea level rise. However, consistent with the California Supreme Court's decision in *California Building Industry*

Association v. Bay Area Air Quality Management District,⁴²³ this would not be a significant effect under CEQA, because development pursuant to the No Project Alternative would not significantly exacerbate this existing environmental hazard. As under existing conditions, projects located in areas that are currently prone to flooding from the combined sewer system during wet weather would be reviewed by the SFPUC during the project approval process and may require additional actions such as incorporation of a pump station for sewage flows, raised elevation of entryways, special sidewalk construction, and deep gutters. These measures would reduce the potential for localized flooding. Therefore, impacts of the No Project Alternative related to flooding would be less than significant, as under the Plan.

With respect to the capacity of the combined sewer system, particularly during wet weather, as stated in Section IV.I, Hydrology and Water Quality, the volume of wastewater produced under the No Project Alternative would be approximately the same as existing conditions. There would be no substantial change in stormwater flows to the combined sewer system because there would be less development in the Plan Area compared to the Plan. Thus, impacts related to an increase in combined sewer discharges under the No Project Alternative would be less than significant, as under the Plan.

Issues Analyzed in the Initial Study

Impacts Related to the Intensity of Development

Impacts related to utilities and service systems, and public services (discussed in the Initial Study; see Appendix B) would be less substantial than those of the Plan, given the reduced intensity of development; these impacts would be less than significant, as with the proposed Plan. Regarding recreation, less growth under the No Project Alternative would result in less demand on existing recreational facilities. However, because this alternative would not include a program for creation of new parks or open space, future conditions would be somewhat worse than with the Plan. On balance, however, recreation impacts would be similarly less than significant.

Impacts Related to Site-Specific Conditions

Impacts related to site-specific conditions, such as those related to biology, geology and soils, hydrology and water quality, and hazardous materials would be similar to or less severe than those of the Plan because many of the same sites could be subject to future development. While the No Project Alternative would not construct new high-rise buildings taller than 85 feet south of the south side of Folsom Street, excavation and foundation systems (and, therefore, ground-disturbing activities) would likely be similar in many instances to those with development pursuant the Plan, and therefore geologic and soils impacts would be similar. **Mitigation Measures M-BI-1, Pre-construction Bat Surveys, and M-HZ-3, Hazardous Building Materials Abatement**, would be applicable on a project-specific basis through project review under CEQA, as with the Plan and, in the case of biological resources and hazardous materials, impacts of the No Project Alternative would be less than significant with mitigation, as with the Plan. Impacts on geology and hydrology and water quality would be less than significant, as with the Plan.

⁴²³ *California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal.4th 369. Opinion Filed December 17, 2015.

As with the Plan, the No Project Alternative would have less-than-significant impacts related to mineral and energy resources and no impacts on agricultural or forest resources, because of the lack of these kinds of resources in the Project area.

Project Objectives

The No Project Alternative would accommodate substantially fewer jobs and less new housing than the Plan. As described in the introduction to Chapter IV, the No Project Alternative would result in 36 percent fewer additional households than the Plan (i.e., 9,200 vs. 14,400 households), and 57 percent fewer additional jobs than the Plan (27,200 vs. 63,600 jobs). As such, this alternative would be less successful than the Plan in “increas[ing] the capacity for jobs and housing” (Objective 1) and “facilitat[ing] an economically diversified and lively jobs center (Objective 3). Because the No Project Alternative would not include the Plan’s proposed street network changes (including those that incentivize walking, bicycling and transit) or open space improvements, the No Project Alternative would not “provide safe and convenient transportation that prioritizes walking, bicycling, and transit” (Objective 4) or “offer an abundance of parks and recreational opportunities” (Objective 5). Additionally, the No Project Alternative would not necessarily “create an environmentally sustainable and resilient neighborhood” (Objective 6), as it would not establish an Eco-District in the Plan Area, including an implementing entity, with a commitment and strategy to become a sustainable and resilient neighborhood. Without the Plan’s proposed height limit increases, the No Project Alternative would not “ensure that new buildings enhance the character of the neighborhood and the city” (Objective 8), as it would not result in an “overall development pattern... complementary to the skyline” (Plan Objective 8.2), nor would it “reinforce the character of Central SoMa as a mid-rise district with tangible ‘urban rooms’” (Plan Objective 8.3) or use urban form to emphasize important nodes, such as the Central Subway. Accordingly, the No Project Alternative would not meet most of the basic project objectives. The No Project Alternative would, however, continue to reflect the objectives established for each of the existing East SoMa and Western SoMa Plan Areas.

VI.C Alternative 2: Reduced Heights Alternative

VI.C.1 Description

The Reduced Heights Alternative would result in implementation of the same land use districts and General Plan amendments as under the Plan, except for text and height amendments that relate to maximum permitted building heights as well as building bulk (regulated through the use of floor-plate size restrictions and required setbacks) within Plan Area height districts. Proposed height limits under the Reduced Heights Alternative are shown in **Figure VI-1, Reduced Heights Alternative Height Districts Map**.

Figure VI-1
Reduced Heights Alternative Height Districts Map

The Reduced Heights Alternative would permit fewer tall buildings south of the elevated Interstate 80 freeway than would be allowable under the Plan. Both the Reduced Heights Alternative and the Plan would increase height limits along much of Fourth, Harrison, and Bryant Streets from 65 feet to 85 feet. However, the Reduced Heights Alternative would allow for four towers of 160 feet or more in height south of the freeway, whereas the Plan would allow up to 10 such towers in this area. Also, on the south side of Harrison Street between Second and Fourth Streets, the Reduced Heights Alternative would allow future buildings at heights no greater than 130 feet, whereas the Plan would allow for four towers 160 feet tall and greater. The maximum height allowed under this alternative would be 320 feet (at the corner of Fourth and Townsend Streets). The Reduced Heights Alternative would include the same street network changes and open spaces improvements that are proposed under the Plan.

This alternative assumes the same sites would be developed as under the Plan, although at a lower intensity, resulting in marginally less development than that assumed under the Plan. Growth projections for the Reduced Heights Alternative estimate an increase of 12,400 households and approximately 55,800 jobs, reflecting 14 percent fewer households and 12 percent fewer jobs than the Plan. Total floor area developed under the Reduced Heights Alternative would be about 13 percent less than with implementation of the Plan.

VI.C.2 Alternative 2—The Reduced Heights Alternative: Impacts

Land Use and Land Use Planning

Land use impacts would be similar under the Reduced Heights Alternative, which would include the same changes in use districts as the Plan and would also increase height limits, albeit to a somewhat lesser degree. The Reduced Heights Alternative would allow for the same mix of land uses allowed under the Plan, and therefore there could be conflict with noise sensitive uses co-located with noise-generating uses. **Mitigation Measure M-NO-1b, Siting of Noise-Generating Uses**, combined with the *San Francisco Building Code*, *San Francisco Green Building Code*, and Regulation of Noise from Places of Entertainment, would reduce impacts on sensitive land uses to a less-than-significant level. Also like the Plan, this alternative would not physically divide an existing community, as it would not introduce physical barriers. Because it would include the street network changes, the Reduced Heights Alternative would conflict with plans adopted for the purpose of avoiding or mitigating an environmental effect, should the Howard and Folsom Streets two-way street network change option be implemented. This alternative, like the Plan, would result in a significant unavoidable conflict with *General Plan* policy regarding traffic noise.

Aesthetics

Aesthetic impacts would be less than significant, as with Plan, and impacts would not be substantially different from those of the Plan. As can be seen in the visual simulations from long-range viewpoints (see **Figure VI-2, Long-Range Visual Simulation: View North from Texas Street and 19th Street**, and **Figure VI-3, Long-Range Visual Simulation: View East from Corona Heights Park**), from a distance the differences between a 400-foot-tall tower and a 320-foot-tall tower would not be readily apparent. In addition, the more modest increases in height that would be allowed under the Reduced Heights Alternative would



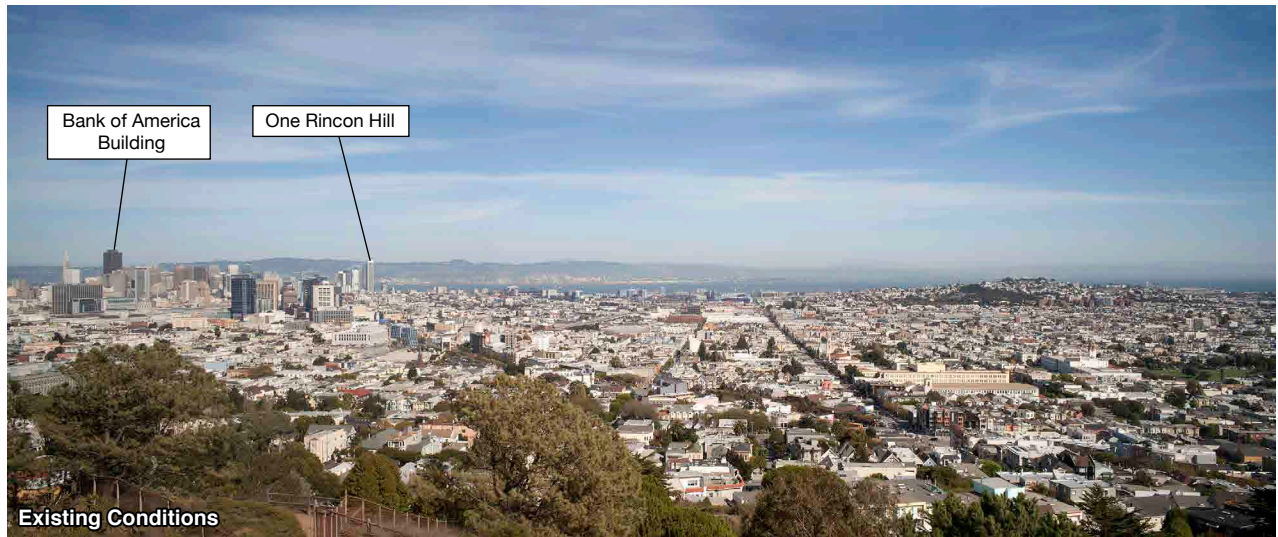
Plan Building

SOURCE: Square One, 2016

Case No. 2011.1356E: Central SoMa Plan

Figure VI-2

Long-Range Visual Simulation:
View North from Texas Street and 19th Street



Plan Building

SOURCE: Square One, 2016

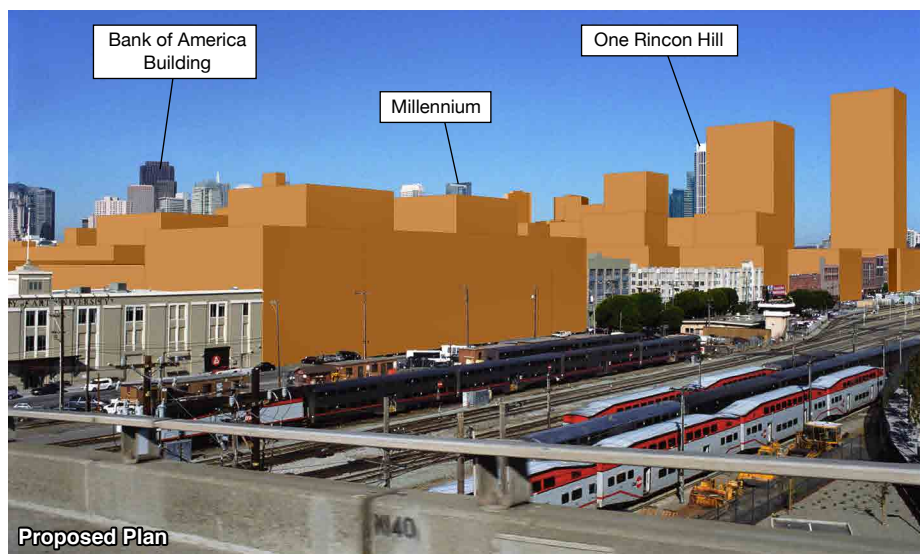
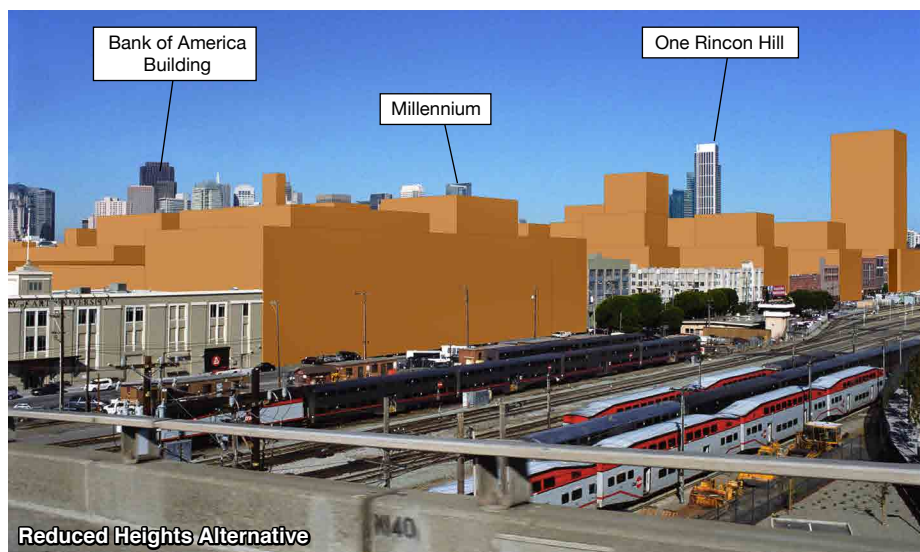
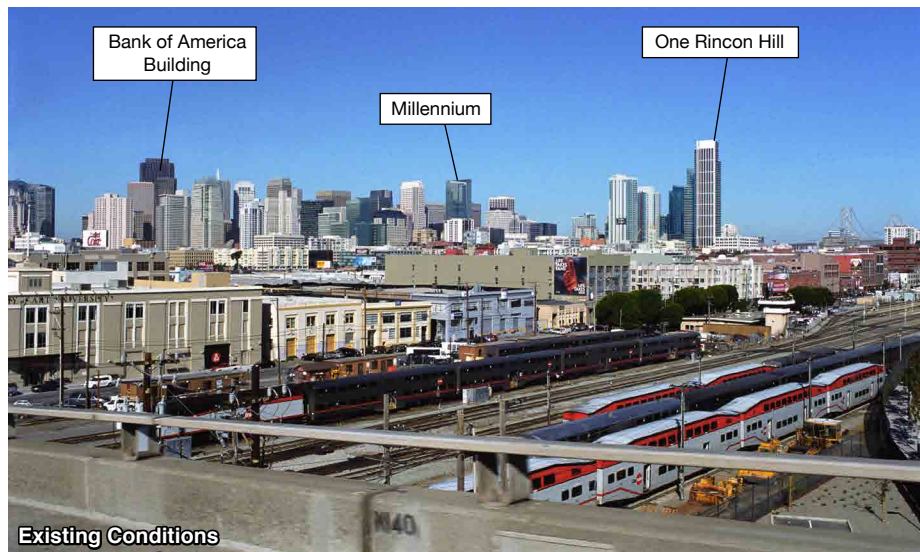
Case No. 2011.1356E: Central SoMa Plan
Figure VI-3
 Long-Range Visual Simulation:
 View East from Corona Heights Park

generally result in a less pronounced urban form in distant views. Similar to the Plan, buildings would be subject to bulk sculpting measures. In the mid-range views from the Interstate 280 overpass near Sixth and Brannan Streets and from the Bay Bridge (see **Figure VI-4, Mid-Range Visual Simulation: View North from Interstate 280 Sixth Street Off-Ramp**, and **Figure VI-5, Mid-Range Visual Simulation: View West from Interstate 80 Westbound**), the fewer towers would be more apparent but would not substantially change the overall views, compared to the Plan. In closer-range views, the difference between the Plan and the Reduced Heights Alternative would be less perceptible from the pedestrian perspective because the field of vision is generally more limited from the ground level. As such, development that would be allowed under the Reduced Heights Alternative and the Plan would not be readily discernible from the pedestrian perspective (see **Figure VI-6, Short-Range Visual Simulation: View East from Brannan Street and Sixth Street**, and **Figure VI-7, Short-Range Visual Simulation: View North from Fourth Street and Townsend Street**). Therefore, as with the Plan, development under the Reduced Heights Alternative would not adversely affect the visual character of the Plan Area or scenic resources. The Reduced Heights Alternative would not substantially alter the public views of the Plan Area, result in substantially increased light and glare, or make a considerable contribution to adverse aesthetic conditions in the Plan Area, and these impacts would be less than significant.

Cultural and Paleontological Resources

Historic Architectural Resources

Because the Reduced Heights Alternative would likely involve subsequent future projects at the same or very similar development sites as the project, albeit at reduced heights and densities on certain specific sites, this alternative, like the Plan, would result in a significant and unavoidable impact, with mitigation, on historic architectural resources associated with the potential demolition or substantial alteration of historical resources. Thus, there exists the potential for subsequent projects to materially impair historic resources through demolition or substantial alteration, a significant impact. Cumulative impacts on historical resources would likewise be significant and unavoidable with mitigation, as would be the case for the Plan. **Mitigation Measures M-CP-1a, Avoidance or Minimization of Effects on Identified Historical Resources; M-CP-1b, Documentation of Historical Resource(s); M-CP-1c, Oral Histories; M-CP-1d, Interpretive Program; and M-CP-1e, Video Recordation**, would apply with respect to direct effects on historical resources, while **Mitigation Measures M-CP-3a, Protect Historical Resources from Adjacent Construction Activities, and M-CP-3b, Construction Monitoring Program for Historical Resources**, would apply with respect to indirect, construction-related effects. However, these measures would not fully mitigate the impact because, as with the Plan, under the Reduced Heights Alternative material impairment of an historic architectural resource through demolition or substantial alteration would result in a significant impact; therefore, even with implementation of these mitigation measures, the impact would remain significant and unavoidable.



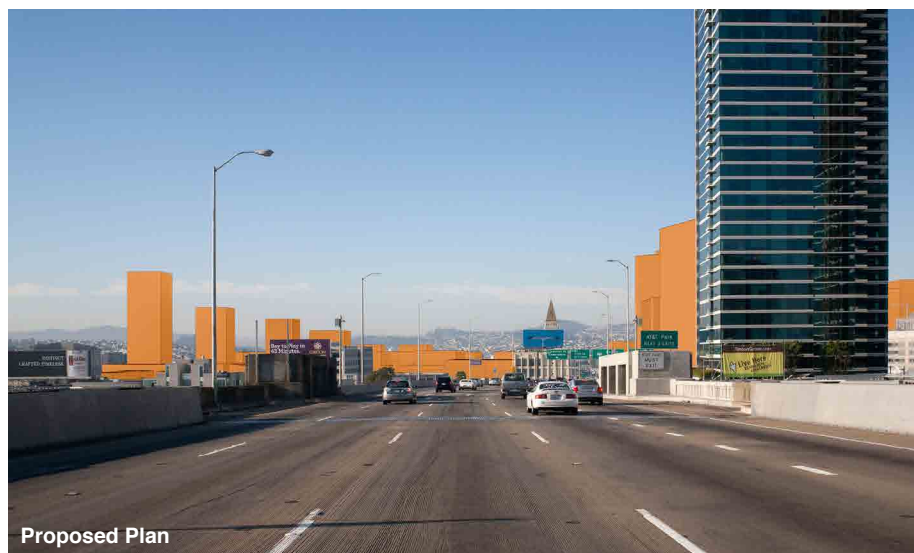
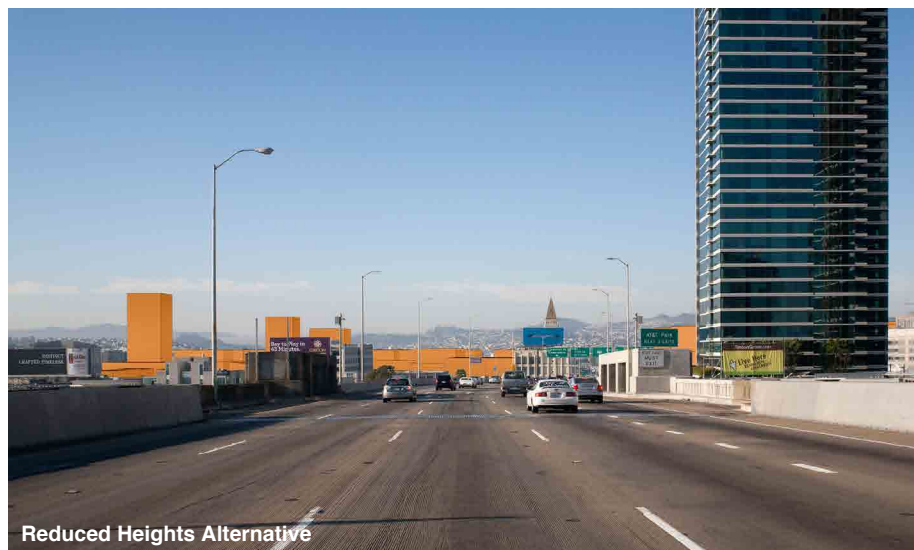
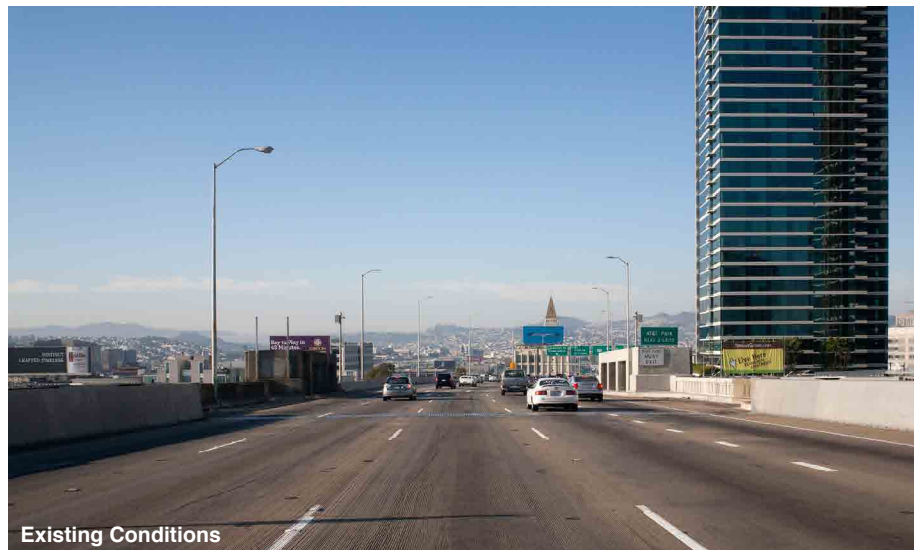
Plan Building

SOURCE: Square One, 2016

Case No. 2011.1356E: Central SoMa Plan

Figure VI-4

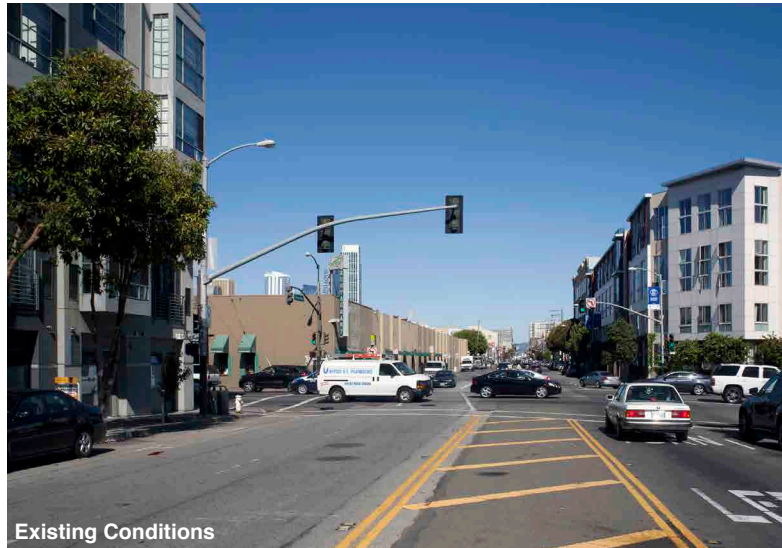
Mid-Range Visual Simulation:
View North from Interstate 280 Sixth Street Off-Ramp



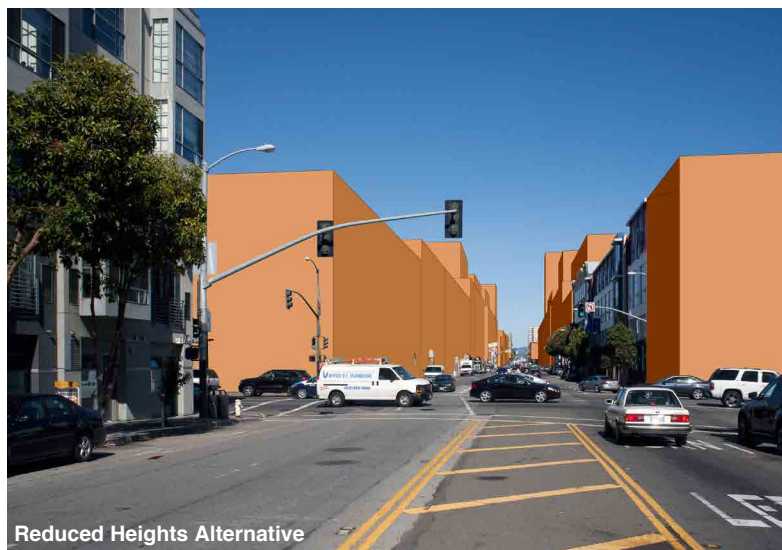
SOURCE: Square One, 2014

Case No. 2011.1356E: Central SoMa Plan

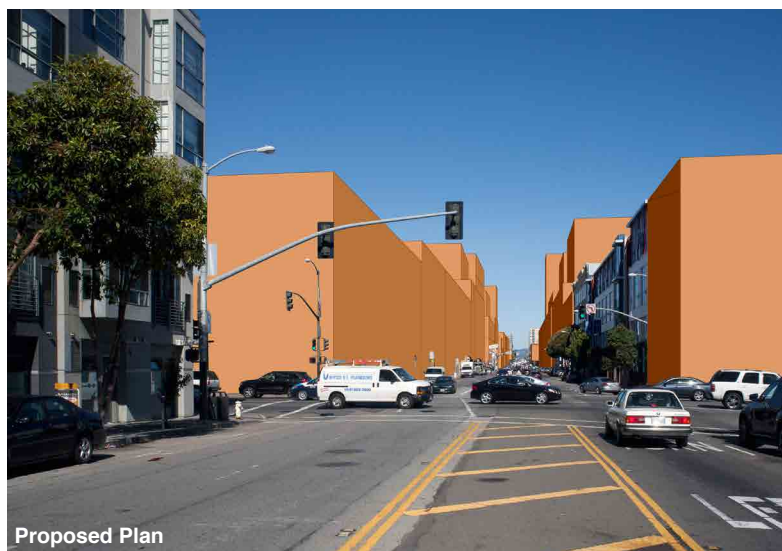
Figure VI-5
Mid-Range Visual Simulation:
View West from Interstate 80 Westbound



Existing Conditions



Reduced Heights Alternative



Proposed Plan

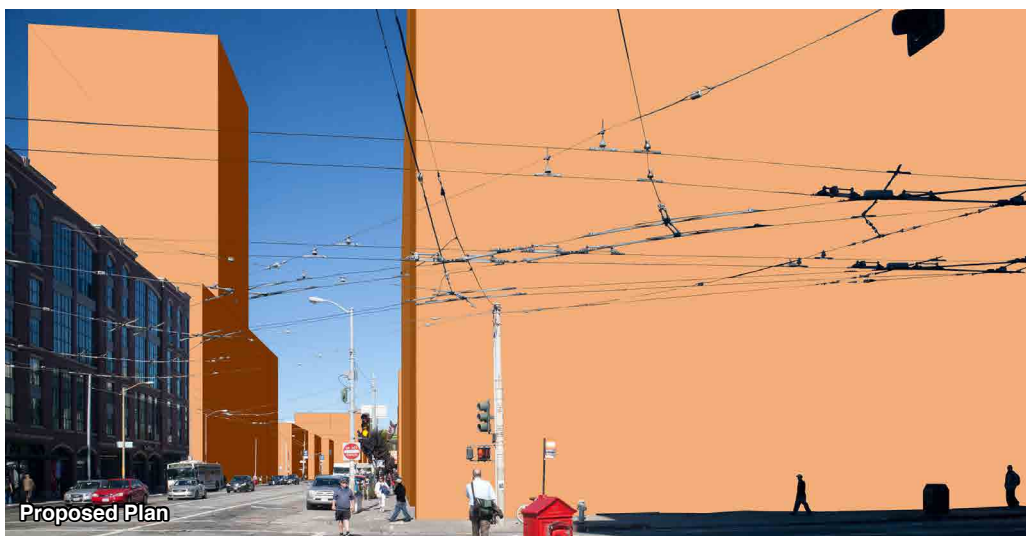
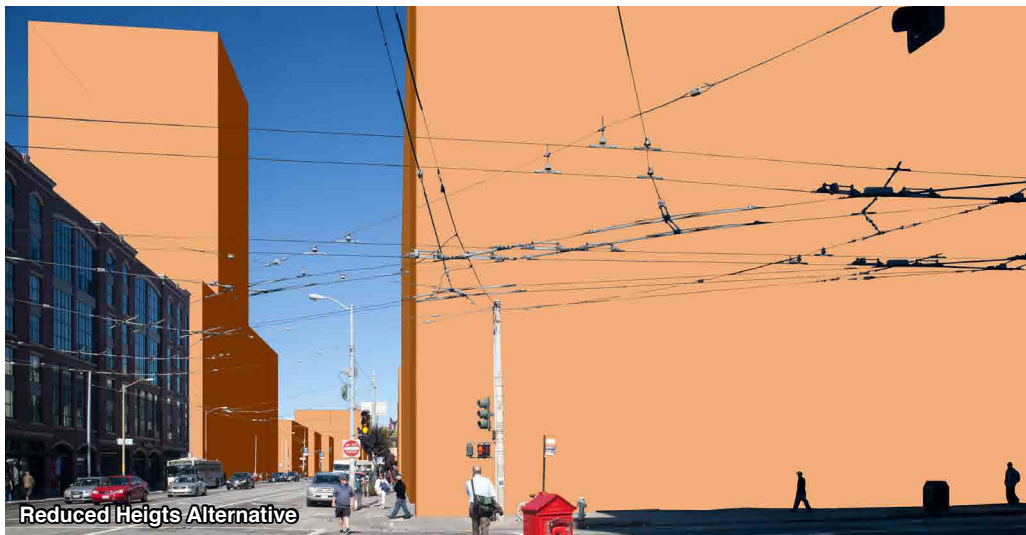
Plan Building

SOURCE: Square One, 2016

Case No. 2011.1356E: Central SoMa Plan

Figure VI-6

Short-Range Visual Simulation:
View East from Brannan Street and Sixth Street



Plan Building

SOURCE: Square One, 2014

Case No. 2011.1356E: Central SoMa Plan

Figure VI-7

Short-Range Visual Simulation:
View North from Fourth Street and Townsend Street

Archeological Resources, Human Remains, and TCRs

The Reduced Heights Alternative would also result in comparable impacts to those of the Plan on prehistoric and/or historic-period archeological resources, human remains, and/or tribal cultural resources because most of the same sites would be developed and similar construction techniques and foundation systems would likely be employed. As with the Plan, this impact would be reduced to a less-than-significant level through implementation of **Mitigation Measures M-CP-4a, Project-Specific Preliminary Archeological Assessment, and M-CP-4b, Procedures for Accidental Discovery of Archeological Resources**. Cumulative impacts would likewise be less than significant with mitigation, as with the Plan.

Paleontological Resources

Impacts on paleontological resources would be less than significant, both for this alternative and cumulatively, as would be the case with the Plan, given the low sensitivity of Plan Area soils for such resources.

Transportation and Circulation

VMT

Under the Reduced Heights Alternative, residential growth in the Plan Area would be about 14 percent less and employment growth would be about 12 percent less by 2040 than is assumed under the Plan. As with the Plan, the average daily VMT per capita for the Reduced Heights Alternative would be substantially lower than the Bay Area regional average for the residential, office, and retail land uses, and the Reduced Heights Alternative would meet the *Plan Bay Area* goal of reducing residential VMT per capita by 10 percent compared to year 2005 levels. In addition, the street network changes under the Reduced Heights Alternative would not substantially induce automobile travel, as with the Plan. Thus, impacts related to VMT under the Reduced Heights Alternative would be less than significant, as would be the case with the Plan.

Traffic Hazards

Under the Reduced Heights Alternative, development projects and the proposed street network changes would not introduce unusual design features that would create a traffic hazard. As with the Plan, increases in vehicle, pedestrian and bicycle travel associated with new development would result in the potential for increased vehicle-pedestrian and vehicle-bicycle conflicts, and increased average vehicle delays at intersections, but these increases would not be considered new or a substantial worsening of a traffic hazard. Thus, the impact related to traffic hazards under the Reduced Heights Alternative would be less than significant, as would be the case with the Plan.

Transit

Transit ridership would increase about eight percent less than with implementation of the Plan. The relative reduction in ridership would avoid the Plan's significant impact on Muni capacity utilization on some, but not all, screenlines and corridors under existing plus Plan and 2040 cumulative conditions. As with the Plan, the Reduced Heights Alternative would also result in significant impacts on regional transit (i.e., BART) capacity utilization under existing plus Reduced Heights Alternative and 2040 cumulative conditions. Therefore,

impacts related to local and regional transit capacity utilization under the Reduced Heights Alternative would be significant and unavoidable with mitigation, as with the Plan, and **Mitigation Measure M-TR-3a, Transit Enhancements**, would be applicable to the Reduced Heights Alternative. The Reduced Heights Alternative would include the same transit improvements proposed with the Plan, including dedicated transit lanes and bus bulbs at select locations, as part of the street network improvements.

Also as with the Plan, development in the Plan Area under the Reduced Heights Alternative would increase traffic congestion, causing delays for Muni buses and regional transit carriers that operate on city streets (Golden Gate Transit and SamTrans), a significant impact under existing plus Plan and 2040 cumulative conditions. Implementation of **Mitigation Measures M-TR-3a, Transit Enhancements; M-TR-3b, Boarding Improvements; M-TR-3c, Signalization and Intersection Restriping at Townsend/Fifth Streets; and M-TR-3d, Implement Tow-away Transit-only Lanes on Fifth Street**, could reduce peak-period transit delays on Muni, Golden Gate Transit, and SamTrans routes; however, the feasibility of these measures is uncertain, both because it is not known whether or how much additional funding could be made available and because physical improvements would be the responsibility of the SFMTA. Thus, these measures are not certain to adequately mitigate the impacts to less-than-significant levels. Therefore, transit impacts on Muni, Golden Gate Transit, and SamTrans operations would be significant and unavoidable.

Pedestrian and Bicycle Impacts

In terms of pedestrian and bicycle operations, the Reduced Heights Alternative would result in about eight percent less travel by these modes in 2040, compared to the Plan, and would implement the same proposed street network changes, including new bicycle lanes and cycle tracks, widened sidewalks, and new mid-block crosswalks. With incrementally less development in the Plan Area by 2040, the Reduced Heights Alternative would not avoid the Plan's significant impacts with respect to pedestrian crowding in crosswalks under existing plus Plan and 2040 cumulative conditions. Pedestrian impacts under the existing plus Plan and 2040 cumulative conditions, therefore, would be significant and unavoidable with mitigation under the Reduced Heights Alternative, as with the Plan, and **Mitigation Measure M-TR-4, Upgrade Central SoMa Crosswalks**, would be applicable to the Reduced Heights Alternative.

Bicycle travel would also be incrementally less frequent under the Reduced Heights Alternative, compared to conditions with the Plan, and the facilities that would be provided would be similar. Inasmuch as the Plan would result in less-than-significant impacts with respect to bicycle conditions, bicycle-related impacts of the Reduced Heights Alternative would also be less than significant.

Loading

With incrementally less development than under the Plan, the Reduced Heights Alternative would result in less growth in demand for off-street freight loading spaces, on-street commercial loading spaces, and curb space for passenger loading/unloading zones. To the extent that loading demand is not accommodated off-street within new development, it would need to be accommodated within existing or new on-street commercial loading spaces, the supply of which the SFMTA could increase in the future to accommodate increased demand, if warranted. However, with the same street network changes as the Plan, about 60 existing on-street freight loading zones would be removed under the Reduced Heights Alternative, as would a number of on-street passenger loading zones, to implement the proposed street network changes, and other

commercial loading spaces and passenger loading/unloading zones would be unavailable during peak periods. This could result in double parking that could adversely affect local vehicular, transit, and bicycle circulation, particularly on streets with transit-only and bicycle lanes, and would result in a significant loading impact even with mitigation. Because the Reduced Heights Alternative would include the same street network improvements, and because it would include only incrementally less development than the Plan, the Reduced Heights Alternative's impact on loading would be significant and unavoidable with mitigation, and **Mitigation Measures M-TR-6a, Driveway and Loading Operations Plan, and M-TR-6b, Accommodation of On-street Commercial Loading Spaces and Passenger Loading/Unloading Zones**, would apply to the Reduced Heights Alternative.

Parking

The Reduced Heights Alternative would increase parking demand by about 10 percent less than the Plan. Because parking-related impacts from the Plan would be less than significant, the Reduced Heights Alternative would also have a less-than-significant impact with respect to parking.

Emergency Vehicle Access

While development in the Plan Area would not introduce unusual design features or change the Plan Area street network as to hinder or preclude emergency vehicle access, such development would increase traffic volumes, and implementation the proposed street network changes under the Reduced Heights Alternative would reduce the number of mixed-flow travel lanes on some streets. While emergency vehicles would be able to travel within transit-only lanes, and fire and rescue vehicles would be able to mount the raised separation between vehicle travel lanes and any protected cycle track or transit-only lanes, it is likely that increased traffic congestion combined with reduced roadway capacity dedicated to motor vehicles would occasionally impede emergency vehicle access in the Plan Area during peak periods of traffic with the Reduced Heights Alternative, a significant impact. While the Reduced Heights Alternative would result in incrementally less development than with the Plan, impacts related to emergency access would be significant due to increased congestion and the street network changes, as with the Plan. **Mitigation Measure M-TR-8, Emergency Vehicle Access Consultation**, would ensure that the final design of each street network project would adequately meet emergency provider needs considering the location of the proposed street network project, the number of mixed-flow travel lanes available to general traffic, and raised buffers between the mixed-flow travel lanes and transit-only lanes and/or cycle tracks, and would not result in secondary transportation-related impacts. This measure would apply to the Reduced Heights Alternative and therefore, for the same reasons as with the Plan, impacts related to emergency vehicle access would be less than significant with mitigation, as under the proposed Plan.

Construction Impacts

Construction activities associated with the Reduced Heights Alternative would be similar to those described for the Plan, though somewhat less intensive due to the fewer tall buildings that would be possible to construct under this alternative than under the Plan. Though the Reduced Heights Alternative would result in less development intensity than the Plan, development under the Reduced Heights Alternative could still result in several construction projects (development projects and street improvement projects) to occur

simultaneously in close proximity to each other within the Plan Area, and result in significant construction-related transportation impacts, including potential disruption of traffic, transit, pedestrian, and bicycle circulation. **Mitigation Measure M-TR-9, Construction Management Plan and Construction Coordination**, would apply to the Reduced Heights Alternative, and construction-related transportation impacts under existing plus Reduced Heights Alternative would remain significant and unavoidable with mitigation as with the Plan. As with the Plan, development under the Reduced Heights Alternative, in combination with construction of other projects outside of the Plan Area would not result in significant cumulative construction-related transportation impacts.

Noise and Vibration

Traffic-generated noise would be essentially the same under the Reduced Heights Alternative as under the Plan, and would be significant and unavoidable, as with the Plan, because traffic generated under the Reduced Heights Alternative, while marginally lower in volume on at least some streets, would result in a noise increase in excess of 3 dBA on one or more street segments along Howard Street under the Howard and Folsom Streets two-way option. (As with the Plan, traffic noise with the Howard and Folsom Streets one-way option would be less than significant under the Reduced Heights Alternative.) Under cumulative conditions, traffic noise would be significant and unavoidable under both Folsom-Howard street network options, as with the Plan. **Mitigation Measure M-NO-1a, Transportation Demand Management (TDM) for New Development Projects**, would reduce traffic noise from new development by reducing traffic volumes, but not necessarily to a less-than-significant level, and cumulative traffic noise would result in a significant, unavoidable impact to existing noise-sensitive uses. As with the Plan, newly developed noise-generating uses would be subject to **Mitigation Measure M-NO-1b, Siting of Noise-Generating Uses**, which, along with compliance with the *San Francisco Building Code*, *San Francisco Green Building Code*, and Regulation of Noise from Places of Entertainment, would reduce impacts on sensitive land uses to a less-than-significant level. New noise-sensitive land uses would be required to comply with existing noise control standards and would not be significantly affected, as under the Plan.

Construction noise and construction vibration would be similar in nature to that under the Plan and would be significant, even with mitigation. **Mitigation Measures M-NO-2a, General Construction Noise Control Measures**, and **M-NO-2b, Noise and Vibration Control Measures during Pile Driving**, would be applicable to the Reduced Heights Alternative, as would **Mitigation Measures M-CP-3a, Protect Historical Resources from Adjacent Construction Activities**, and **M-CP-3b, Construction Monitoring Program for Historical Resources**. Similar to the Plan, construction noise impacts for the Reduced Heights Alternative would be expected to be significant, even with implementation of comparable mitigation if simultaneous construction activities were to occur proximate to the same sensitive receptor, while construction vibration effects would be less than significant with comparable mitigation. For the same reasons as for the Plan, cumulative construction noise impacts would be less than significant.

Air Quality and Greenhouse Gas Emissions

Emissions of criteria air pollutants, GHGs, and traffic-generated TACs would be incrementally reduced within the Plan Area, compared to those with the Plan, because the Reduced Heights Alternative would result in about 14 percent less residential growth and about 12 percent less employment growth in the Plan Area by

2040 than is assumed under the Plan. As with the Plan, VMT would increase by a lesser percentage (64 percent) than service population (135 percent) and so, at a plan level, the Reduced Heights Alternative would not result in significant criteria air pollutant impacts. However, as with the Plan, one or more subsequent individual development projects in the Plan Area could, if large enough, violate an air quality standard, contribute to an existing or projected air quality violation, and/or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard. Mitigation would also apply to the Reduced Heights Alternative in the form of a project-specific Transportation Demand Management Program (**Mitigation Measure M-NO-1a, Transportation Demand Management (TDM) for New Development Projects**), which would reduce vehicle trips generated by subsequent development projects and concomitantly reduce emissions of criteria air pollutants and vehicular toxic air contaminants. Other mitigation measures related to operational air quality that are applicable to the Plan would also be applicable to the Reduced Heights Alternative, including **Mitigation Measures M-AQ-3a, Education for Residential and Commercial Tenants Concerning Low-VOC Consumer Products; M-AQ-3b, Reduce Operational Emissions; and M-AQ-5a, Best Available Control Technology for Diesel Generators and Fire Pumps**. However, in the absence of certainty that mitigated emissions from every subsequent development project would be below the applicable significance thresholds, this would be a significant, unavoidable impact of the Reduced Heights Alternative.

The proposed Plan's use districts and policy framework would be the same under the Reduced Heights Alternative and the Plan; only building height limits would vary. Moreover, as noted in Table IV.F-6, Consistency of the Plan with Transportation Control Measures of the 2010 Clean Air Plan, in Section IV.F, Air Quality, existing City programs are consistent with many of the *2010 Clean Air Plan's* Transportation Control measures. As with the Plan, the Reduced Heights Alternative would support the *Clean Air Plan's* primary air quality, public health, and GHG reduction goals. Therefore, the Reduced Heights Alternative would not disrupt or hinder implementation of the *Clean Air Plan*.

Construction emissions of criteria pollutants from subsequent development projects would be incrementally less substantial under the Reduced Heights Alternative than the Plan; as with the Plan and the No Project Alternative, construction emissions would be significant and mitigation (**Mitigation Measures M-AQ-4a, Construction Emissions Analysis, and M-AQ-4b, Construction Emissions Minimization Plan**) would reduce the impact to a less-than-significant level.

As with the Plan, subsequent development under the Reduced Heights Alternative could generate particulates and TACs that would worsen air quality and adversely affect sensitive receptors. **Mitigation Measure M-NO-1a, Transportation Demand Management (TDM) for New Development Projects**, in Section IV.E, Noise and Vibration, would reduce TACs from vehicle emissions by reducing vehicle trips. **Mitigation Measures M-AQ-3b, Reduce Operational Emissions; M-AQ-5a, Best Available Control Technology for Diesel Generators and Fire Pumps; M-AQ-5b, Siting of Uses that Emit Particulate Matter (PM_{2.5}), Diesel Particulate Matter, or Other Toxic Air Contaminants; and M-AQ-5c, Update Air Pollution Exposure Zone for San Francisco Health Code Article 38**, would also reduce the severity of this impact, but not to a less-than-significant level. As a result, this would be a significant, unavoidable impact of TACs emitted by traffic generated by the Reduced Heights Alternative, because the degree to which trips (and thereby traffic-generated emissions) could be reduced by Mitigation Measure M-NO-1a cannot be reliably estimated at this time, vehicle emissions are regulated at the State and federal level and local jurisdictions are preempted from

imposing stricter emissions standards for vehicles, and no other feasible mitigations for mobile source emissions are available. Construction-related emissions of particulates and TACs under the Reduced Heights Alternative would be significant, as with the Plan and the No Project Alternative, but would likewise be mitigated to a less-than-significant level with implementation of **Mitigation Measures M-AQ-6a, Construction Emissions Minimization Plan**, and **M-AQ-6b, Implement Clean Construction Requirements**.

It is noted that, to the extent that development that may be precluded under the Reduced Heights Alternative from taking place in the Plan Area were to occur elsewhere in the Bay Area, particularly in outlying, less dense locations that are less well-served by transit, employees in and residents of such developments could generate substantially greater impacts on air quality (specifically, regional criteria pollutants) and greenhouse gases than would be the case if a similar amount of office space, other non-residential space, or residential uses were developed in the Plan Area. The operational impacts of this type of development pattern would be relatively greater because lower office and residential densities reduces transit viability, making it likely that equivalent amounts of commercial and residential development would result in more vehicle trips in other locations. To the extent that the development occurs outside of PDAs identified in *Plan Bay Area*, regional emissions may increase incrementally relative to the Plan.

Impacts related to greenhouse gas emissions would be less than significant, as with the Plan and the No Project Alternative, given that subsequent development projects would be required to comply with the City's Greenhouse Gas Reduction Strategy.

Wind

The Reduced Heights Alternative would permit lower height limits on certain sites in the Plan Area than under the Plan, and consequently, could result in fewer taller buildings at those sites than if the Plan were implemented. As a result, the Reduced Heights Alternative could capture less upper-level winds, depending on building orientation, that when channeled down would have the potential to accelerate pedestrian-level winds. The Reduced Heights Alternative would also allow fewer towers south of the elevated Interstate 80 freeway. Compared to the Plan, wind speeds could be lower under the Reduced Heights Alternative on Harrison Street east of Fourth Street and on Townsend Street west of Fourth Street because, at both locations, the Reduced Heights Alternative would limit building heights to 130 feet, while the Plan would allow for towers up to 350 feet in height.

In two locations—at the northeast corner of Fourth and Townsend Streets, and at the southeast corner of Fifth and Brannan Streets—the Plan would allow towers at 25 percent greater heights than the Reduced Heights Alternative: 400 feet (compared to 320 feet under the Reduced Heights Alternative) at Fourth and Townsend Streets and 200 feet (compared to 160 feet under the Reduced Heights Alternative) at Fifth and Brannan Streets. These lower heights under the Reduced Heights Alternative would likely result in only marginally lower wind speeds because towers under either the Reduced Heights Alternative or the Plan would serve to accelerate pedestrian-level winds. The Reduced Heights Alternative would not necessarily avoid the significant impact of a wind hazard exceedance at the corner of Fourth and Brannan Streets, although this significant impact would be further reduced through implementation of **Mitigation Measure M-WI-1, Wind Hazard Criterion for the Plan Area**, which requires proposed buildings to be subject to additional wind analysis, including potential wind tunnel testing, and as needed, to adhere to wind hazard standards to reduce ground-level wind hazard exceedances. Nevertheless, as with the Plan, since it cannot be stated with

certainty that each subsequent development project would be able to meet the wind hazard performance standard, this impact would remain significant and unavoidable.

The Reduced Heights Alternative would also have substantially lower height limits than the Plan at two locations—the block bounded by Bryant, Fifth, Brannan, and Sixth Streets, where the San Francisco Flower Mart is located (85 feet maximum versus 270 feet maximum), and a site at Fifth and Howard Streets, where the Tenderloin Neighborhood Development Corporation proposes an affordable housing project (85 feet maximum versus 300 feet maximum). Neither of those developments is assumed under the Reduced Heights Alternative. It is likely that at least two of the four hazard exceedances under the Plan around the block bounded by Bryant, Fifth, Brannan, and Sixth Streets (one hazard exceedance is existing) would not occur under the Reduced Heights Alternative, which would allow heights on this block no greater than 85 feet. This significant impact from the Plan would be reduced, and possibly eliminated, under the Reduced Heights Alternative; any potential residual effects could be avoided through implementation of Mitigation Measure M-WI-1. Likewise, under the Reduced Heights Alternative, any potentially significant wind impacts of the Plan near the corner of Fifth and Howard Streets would be avoided under the Reduced Heights Alternative, which would limit heights to a maximum of 85 feet at that location. In summary, the Reduced Heights Alternative could result in about three total wind hazard exceedances, compared to five total with the Plan. This significant impact could be reduced with implementation of Mitigation Measure M-WI-1, but it cannot be stated with certainty that wind impacts of subsequent development built to heights proposed under the Reduced Heights Alternative would be reduced to less than significant. This impact is therefore significant and unavoidable.

In conclusion, with implementation of Mitigation Measure M-WI-1 for the Reduced Heights Alternative, individual projects within the Plan Area would be subject to controls on pedestrian-level wind speeds that would reduce potential wind hazard exceedances. It cannot, however, be stated with certainty that subsequent development projects would not increase ground level winds in excess of the wind hazard criterion. Therefore, the Reduced Heights Alternative, like the Plan, would result in a significant unavoidable impact, even with mitigation.

Shadow

In general, the Reduced Heights Alternative would have similar shadow impacts on parks and open spaces near the Plan Area as would the Plan. The primary difference is that the Reduced Heights Alternative would avoid some of the shadow that would occur under the Plan on both Victoria Manalo Draves Park and South Park. The Reduced Heights Alternative would not increase height limits on the block bounded by Bryant, Fifth, Brannan, and Sixth Streets as would occur under the Plan. Therefore, development on this block would not result in new shadow on Victoria Manalo Draves Park. This would avoid the shadow impact of the Plan on this park; although the impact of the Plan was determined to be less than significant, this alternative would avoid any new shadow being cast on Victoria Manalo Draves Park by buildings on this block. As with the No Project Alternative, probable subsequent projects built to the existing 85-foot height limit on the east side of Sixth Street between Howard and Harrison Streets could potentially shade a portion of the outdoor area of the Gene Friend Recreation Center until about 9:00 a.m., when the Center opens. As with the Plan, this impact would be less than significant. Under the Reduced Heights Alternative, the height limit along the south side of Harrison Street between Second and Fourth Streets would be limited to 130 feet; therefore, shadow from these

buildings would not reach South Park, while the Plan could add a small amount of new shadow to South Park from this area.

Shading of Yerba Buena Gardens would be incrementally less under the Reduced Heights Alternative compared to that under the Plan, as the Reduced Heights Alternative proposes lower height limits on several parcels south and west of Yerba Buena Gardens. Minor amounts of new shadow would still likely reach Yerba Buena Gardens and the Alice Street Community Gardens, as under the Plan. Because the Reduced Heights Alternative proposes substantially lower building heights than the Plan near Second and Harrison Streets, this alternative would result in substantially less shade cast on the 303 Second Street POPOS than would the Plan. Shadow impacts to streets and sidewalks would be incrementally reduced under the Reduced Heights Alternative because of the lower allowable building heights. Because shadow impacts would be substantially less severe than with the Plan, shadow impacts from the Reduced Heights Alternative would be less than significant, as with the Plan.

Hydrology and Water Quality (Sea Level Rise and Combined Sewer System)

Like the Plan and the No Project Alternative, the Reduced Heights Alternative would not alter the northern shoreline of Mission Creek, which provides inundation pathways for flooding from future sea level rise. Nor would this alternative raise or lower the ground surface in a manner that would redirect flood flows. As with the Plan and the No Project Alternative, development under the Reduced Heights Alternative could be affected by future sea level rise adjacent to the Plan Area. However, consistent with the California Supreme Court's decision in *California Building Industry Association v. Bay Area Air Quality Management District*, this would not be a significant impact under CEQA, because development pursuant to the Reduced Heights Alternative would not significantly exacerbate this existing environmental hazard. As under existing conditions, projects in areas that are currently prone to flooding from the combined sewer system during wet weather would be reviewed by the SFPUC during the project approval process and may require additional actions such as incorporation of a pump station for sewage flows, raised elevation of entryways, special sidewalk construction, and deep gutters. These measures would reduce the potential for localized flooding. Therefore, impacts related to flooding would be less than significant, as under the Plan and the No Project Alternative.

The Reduced Heights Alternative would result in less development intensity than the Plan, and thus would lessen the increase in wastewater generation. Because the relationship between the increase in wastewater and the decrease in stormwater would remain similar to that under the Plan, the reduction in stormwater flows due to required stormwater reduction measures is expected to offset estimated increases in wastewater flows during wet weather such that there would not be an increase in wet weather combined sewer discharges, and impacts related to an increase in combined sewer discharges under the Reduced Heights Alternative would be less than significant, as under the Plan.

Issues Analyzed in the Initial Study

Impacts Related to the Intensity of Development

Given that the Reduced Heights Alternative would have fewer households and a smaller residential population than the Plan, it is expected that the demand for, and associated impacts to, recreation and public space would be incrementally less substantial than under the Plan. Similarly, the demand for, and associated impacts on, utilities and service systems and public services would also be less than under the Plan; and all of these impacts would be less than significant.

Impacts Related to Site-Specific Conditions

Impacts related to site-specific conditions, such as those related to biology, geology and soils, hydrology and water quality, and hazardous materials would be similar to those of the Plan because it can be assumed that many, if not most, of the same sites would be redeveloped in the future. It is not anticipated that foundation systems (and, therefore, ground-disturbing activities) would be substantially different than with development pursuant to the Plan because the Reduced Heights Alternative would construct high-rise buildings on the same sites, and such buildings may require deeper foundations and/or different types of foundations than shorter structures that could be allowed under existing zoning. Site-specific geology and soils impacts would be less than significant, with the same mitigation measures, where applicable, as with the Plan. **Mitigation Measures M-BI-1, Pre-construction Bat Surveys, and M-HZ-3, Hazardous Building Materials Abatement,** would be applicable, as with the Plan and the No Project Alternative and, in the case of biological resources and hazardous materials, impacts of the Reduced Heights Alternative would be less than significant with mitigation, as with the Plan. Impacts to geology and hydrology and water quality would be less than significant, as with the Plan and the No Project Alternative.

As with the Plan, this alternative would have less-than-significant impacts related to mineral and energy resources and no impacts on agricultural or forest resources, since none of these resources are present within the Plan Area.

Project Objectives

The Reduced Heights Alternative would result in 14 percent fewer additional households, and 12 percent fewer additional jobs than the Plan, and consequently, would meet Objective 1, “increase the capacity for new jobs and housing” to a lesser extent than the Plan. Overall, this Alternative would meet most of the eight project objectives, as would the Plan.

VI.D Alternative 3: Modified TODCO Plan

VI.D.1 Description

The TODCO Group, a South of Market affordable housing and community development non-profit organization, released its “Central SOMA Community Plan” (TODCO Plan) in May 2013, in response to the Planning Department’s April 2013 release of what was then known as the Central Corridor Plan (now the

Central SoMa Plan) and the Notice of Preparation of this EIR.⁴²⁴ TODCO revised its plan in October 2016 after the draft Central SoMa Plan was revised in August 2016.

For purposes of this EIR, a modification to the TODCO Plan's proposed height limits on major development sites was made (as explained under Proposed Modified TODCO Plan Height Limits, below). Hereafter, this modified version of TODCO's Plan is referred to as the Modified TODCO Plan, and is described and analyzed below. Please refer to Section VI.H, Alternatives Considered but Rejected, for a discussion of why the unmodified TODCO Plan was rejected as an alternative in this EIR.

The Modified TODCO Plan is based on an assumption that office development in San Francisco would proceed over the next 20 years at an average rate of about 750,000 square feet per year, or a total of 15 million square feet.⁴²⁵ That is about 25 percent more office space per year than the approximately 610,000 square feet of office use that has been approved annually, on average, in the 29 years since the City's Office Development Annual Limit was created in 1985 as part of the Downtown Plan.⁴²⁶ Of the total of 15 million square feet, the Modified TODCO Plan proposes that up to about five million square feet be accommodated in the southern portion of the Plan Area (from the north side of Harrison Street south), with the remainder foreseen to be developed in the Financial District, including the Transit Center District east of the Plan Area and the existing C-3 use districts northeast of the Plan Area; Mission Bay and the Central Waterfront, including Pier 70 and the Seawall Lot 337/Pier 48 site where large mixed-use developments are proposed; and, to a lesser extent, in the Civic Center/Mid-Market area. Thus, assuming these other neighborhoods could accommodate this level of growth, the Modified TODCO Plan envisions that the Plan Area would be anticipated to accommodate less growth in office employment, but citywide office job growth would likely be comparable to city and regional forecasts.

The Modified TODCO Plan proposes this division of office space as a means of taking advantage of the under-construction Central Subway. The Central Subway will extend from Chinatown through the Union Square area, the Plan Area, and Mission Bay, and will pass within two blocks of the Pier 70 development site before continuing south through the Bayview and into Visitacion Valley. The Modified TODCO Plan also seeks to avoid concentrating as much office development in the Plan Area as is proposed under the Plan, and rather, spreading out the total future office development over the next 20 years along the Central Subway corridor, resulting in approximately two-thirds (i.e., 10 million square feet) of total future office development occurring

⁴²⁴ TODCO Group, *Central SOMA Community Plan: EIR Draft for Community Discussion*, May 2013. Available at: <http://www.todcocentralsomacommunityplan.org/our-plan/>, accessed on August 30, 2016.

⁴²⁵ The 15,000,000 square feet of office space would accommodate about 75,000 jobs, based on the Planning Department's assumptions for future office development in the Plan Area (200 square feet per employee, primarily based on newer technology company offices), although only about 54,350 jobs using 276 square feet per employee from the Department's Guidelines for Transportation Analysis. Growth of 75,000 office jobs would be generally consistent with Association of Bay Area Governments and Planning Department 20-year forecasts for citywide office employment growth (2010–2030 and 2015–2035), which is the Modified TODCO Plan's estimated planning horizon.

⁴²⁶ It is noted that, for the first 12 years of the annual limit, only a total of about 1.6 million square feet of office space was approved in San Francisco. Approvals were initially constrained by the annual limit itself, including the voter-approved halving of the annually allowable 950,000 square feet until projects approved prior to November 1986 had received building permits. Development was further limited by the recession of the early 1990s, and the City went four years (1992–93 through 1996–97) without approval of a single new office building. In the 17 years beginning with the 1997–98 annual limit period, some 16 million square feet of office space has been approved (941,000 square feet per year), with annual totals ranging from zero (twice) to 3.6 million square feet in 2012–13.

outside the Plan Area. This is intended as a means of minimizing the loss of older, relatively smaller commercial buildings that provide relatively more affordable office-type space for new small businesses, including technology startups, which cannot afford newer space that provides more amenities. Such buildings, according to the Modified TODCO Plan, “are vital to SOMA’s character and the city’s economy.”⁴²⁷ To preserve such older, mid-size buildings, the Modified TODCO Plan proposes a prohibition on lot mergers of parcels smaller than 0.5 acre (21,780 square feet) unless no existing building with a floor area ratio greater than 1.5 would be demolished. Such a restriction would be more stringent than the Plan’s proposed Implementation Measure 7.6.1.1, which by way of *Planning Code* amendment would not permit the consolidation of most lots within the Plan Area containing buildings with historic or neighborhood-character buildings where the frontage that could be merged is under 200 feet in length.

It is assumed the Modified TODCO Plan would include the same street network changes that are proposed under the Plan.

Proposed Modified TODCO Plan Boundary

The Modified TODCO Plan proposed boundary is presented in **Figure VI-8, Modified TODCO Plan Proposed Boundary**. As shown in Figure VI-8, the Modified TODCO Plan encompasses the majority of the Plan Area but (1) excludes the SoMa Neighborhood Commercial Transit (NCT) parcels within the Plan Area fronting along the east side of Sixth Street between Stevenson Street and just north of Folsom Street and (2) includes certain additional parcels outside the Plan Area south of Mission Street, east of Sixth Street, and west of Third Street, including, but not limited to, the 5M development site, Moscone Center, and Yerba Buena Gardens.

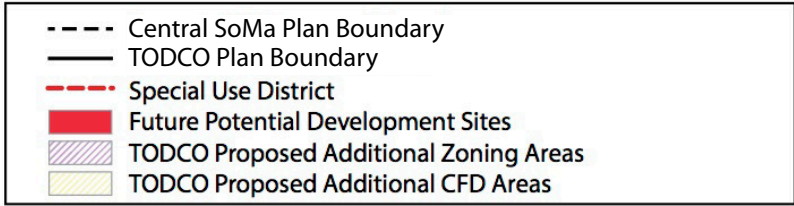
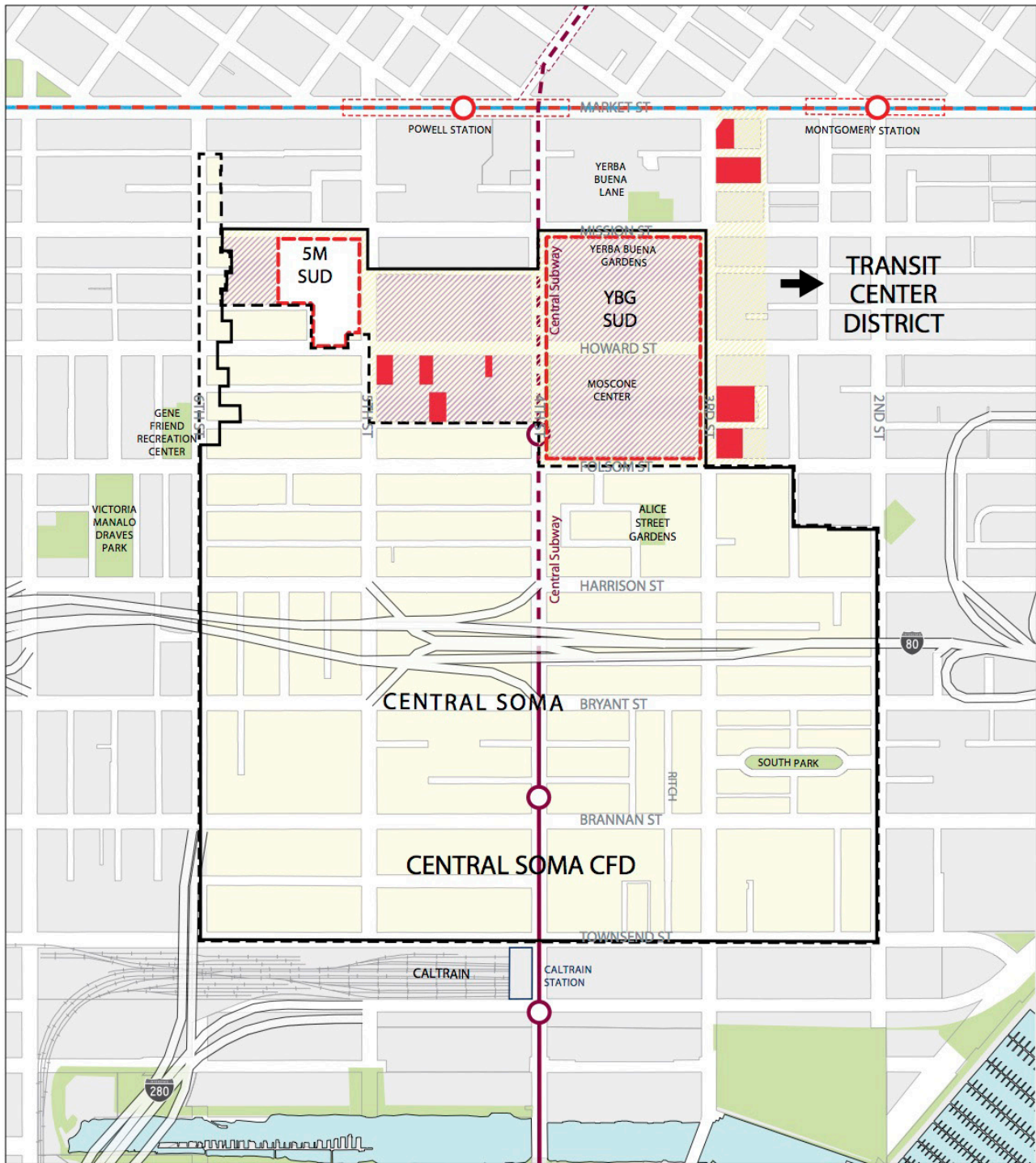
Proposed Modified TODCO Plan Use Districts

Proposed use districts in the Modified TODCO Plan Area are depicted in **Figure VI-9, Modified TODCO Plan Use Districts**.

Proposed Modified TODCO Plan Use Districts within the Central SoMa Plan Area

The Modified TODCO Plan proposes a number of use district changes within its plan boundary. Use districts within the Central SoMa Plan Area portion of the Modified TODCO Plan would be largely the same north of Harrison Street as proposed under the Plan. The primary difference would be that the Modified TODCO Plan would extend the Western SoMa Plan’s Folsom Street Neighborhood Commercial Transit (F-NCT) district two blocks east to Fourth Street, rather than zoning parcels along Folsom Street as Mixed-Use, General (MUG) or Mixed-Use, Office (MUO). The F-NCT district allows office use at the first or second story of a building, but not both, and prohibits office and most non-residential uses (except schools) above the second story: the intent is a typical mixed-use neighborhood with residential uses above ground-floor retail and other commercial uses. The Modified TODCO Plan would also slightly vary the distribution of MUO and MUG use districts between Folsom and Harrison Streets and Fourth and Sixth Streets.

⁴²⁷ TODCO Plan, p. 35 (see footnote 7).



SOURCE: TODCO; San Francisco Planning Department

Case No. 2011.1356E: Central SoMa Plan

Figure VI-8

Modified TODCO Plan Proposed Boundary



SOURCE: TODCO; San Francisco Planning Department

Case No. 2011.1356E: Central SoMa Plan
Figure VI-9
 Modified TODCO Plan Use Districts

Between Harrison and Bryant Streets, south of where the elevated I-80 freeway passes, the Modified TODCO Plan would designate the blocks between Second and Fourth Streets as Western SoMa MUO (WSoMa MUO),⁴²⁸ rather than the Central SoMa Plan's MUO allowing office use but prohibiting residential units on parcels abutting the freeway (similar to the Land Use Variant, addressed immediately following the Modified TODCO Plan). Between Fourth and Sixth Streets, both the Modified TODCO Plan and the Central SoMa Plan would retain the Western SoMa Plan's Service-Arts-Light Industrial (SALI) zoning.⁴²⁹

In contrast to the Central SoMa Plan, between Bryant and Townsend Streets, the Modified TODCO Plan would retain nearly one-half of the existing SALI use district between Fourth and Sixth Streets, and retain all of the existing Residential Enclave (RED) use district parcels between Fourth and Fifth Streets. The Modified TODCO Plan would convert the remainder of the existing SALI use district between Bryant and Townsend Streets to MUO (allowing office use and residential), with the exception of one parcel along the west side of Fifth Street between Brannan and Bluxome Streets that would be converted to WSoMa MUO, but which would permit student housing. Between Second and Fourth Streets, the Modified TODCO Plan would, like the Plan, designate most of the area MUO (retaining the South Park District), but would also create a new Fourth Street Neighborhood Commercial (4-NCT) use district, similar to the F-NCT but allowing office and other commercial uses above the second story while requiring that second-story commercial uses be neighborhood-serving.

Proposed Modified TODCO Plan Use Districts Outside of the Central SoMa Plan Area

The Modified TODCO Plan also proposes a number of use district changes within the Modified TODCO Plan Area, but outside the Central SoMa Plan Area. North of the Central SoMa Plan Area between Fourth and Sixth Streets, the Modified TODCO Plan proposes to convert a number of parcels currently designated C-3-S to MUG. The Modified TODCO Plan also would convert the existing C-3-S portions of the two blocks of Yerba Buena Gardens and Moscone Center, bounded by Mission, Third, Folsom and Fourth Streets as a new Yerba Buena Gardens Special Use District (SUD).

South of the boundary of the Central SoMa Plan Area (and the Modified TODCO Plan Area), the Modified TODCO Plan would designate a parcel located at the southeast corner of Fourth and Townsend Streets (the site of the Caltrain station) as WSoMa-MUO⁴³⁰.

Other Proposed Modified TODCO Plan Use District Requirements (Within and Outside Central SoMa Plan Area)

In addition, the Modified TODCO Plan also proposes a number of PDR/Arts protections. Specifically, the Modified TODCO Plan proposes to incorporate all the provisions of Proposition X (passed by the voters in November 2016), which will require, among other provisions, Conditional Use authorization in the Central

⁴²⁸ The Modified TODCO Plan Use District map (see Figure VI-1) refers to the Western SoMa Mixed-Use Office district as "WSoMa MUO," while the Plan refers to this district as WS-MUO; however, both represent the same use district.

⁴²⁹ The Modified TODCO Plan Use District map refers to the Western SoMa SALI use district as "SALI" while the Plan refers to this district as "WS-SALI," however, both represent the same use district.

⁴³⁰ The Caltrain station is the subject of a separate Planning Department planning process, the Fourth and King Streets Railyards Study.

SoMa Plan Area (among other plan areas) for conversion of at least 5,000 square feet of a PDR use, or at least 2,500 square feet of an Arts Activity use; and in addition, in SALI, SLI, MUO and MUG districts would require replacement of the space proposed for conversion on-site as part of the new project. The Modified TODCO Plan would also extend its requirements for MUG districts to the current and future WS-MUG and MUO districts within the Central SoMa Plan Area, as well as a number of other areas within SoMa.

Proposed Modified TODCO Plan Height Limits

Within the Modified TODCO Plan Area, including that encompassed by the Central SoMa Plan Area, the Modified TODCO Plan proposes no height limit increases for any new development above the existing height limits currently in effect, except as specified for certain major development sites within the Central SoMa Plan Area. These major development sites are shown in **Figure VI-10, Modified TODCO Plan Major Development Sites**. At those major development sites, the Modified TODCO Plan would increase height limits to the same heights limits proposed at those sites under the Central SoMa Plan.

Other Components of the Proposed Modified TODCO Plan

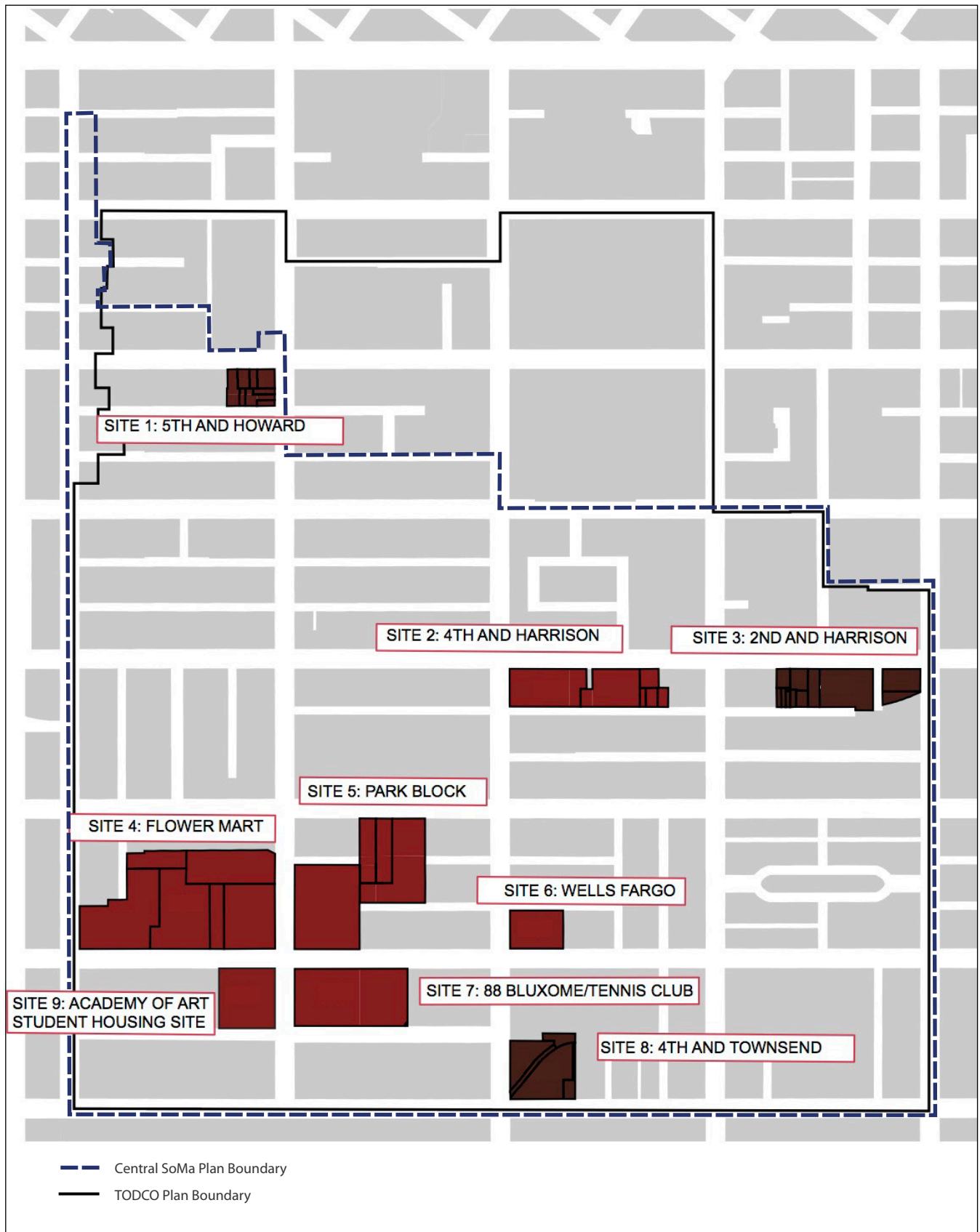
Like the proposed Plan, the Modified TODCO Plan proposes a new park in the area of Fifth and Bryant Streets. While the Plan proposes evaluating park use of a mid-block property owned by the San Francisco Public Utilities Commission (SFPUC), the Modified TODCO Plan proposes a park that would occupy both sides of Fifth Street between Bryant and Brannan Streets, providing about 1.4 acres of parkland on either side of Fifth Street (2.8 acres total)—twice the size of the SFPUC parcel.

Additional components of the Modified TODCO Plan include a proposal to modify the existing SoMa Youth and Family Zone by incorporating into the zone provisions regarding senior citizens, expanding the area subject to the zone's inclusionary housing provisions, and increasing the emphasis on the provision of affordable housing (the Plan does not propose any changes to the existing SoMa Youth and Family Zone); as well as a specific proposal for affordable senior housing atop the Central Subway Moscone Center station being built at the northwest corner of Fourth and Folsom Streets.

Development Assumptions

In terms of the projected level of commercial activity, this analysis assumes the Modified TODCO Plan's proposed five million square feet of office development in the southern portion of the Plan Area and adds the Planning Department assumptions for additional projected growth. This would result in a total of about 9.3 million square feet of growth in in office space, compared to about 10.4 million square feet with the Plan. Accordingly, overall development assumptions for this alternative include the total addition of approximately 12,700 households and 22,500 residents (about 12 percent less than with the Plan) and approximately 56,700 jobs (11 percent less than with the Plan). Total floor area developed would be about 11 percent less than with implementation of the proposed Plan.⁴³¹

⁴³¹ The TODCO Plan did not provide assumed growth projections. Growth projections for the TODCO Plan are based on the available TODCO Plan inputs, and using a number of assumptions for the proposal as a whole. See Table VI-1 for additional detail on projected growth values.



SOURCE: TODCO; San Francisco Planning Department

Case No. 2011.1356E: Central SoMa Plan

Figure VI-10
Modified TODCO Plan Major Development Sites

VI.D.2 Alternative 3—Modified TODCO Plan: Impacts

Land Use and Land Use Planning

Like the Plan, this alternative would not physically divide an existing community, as it would not introduce physical barriers. With the street network changes, in addition to the growth anticipated under this alternative, the Modified TODCO Alternative would result in significant and unavoidable increases in traffic noise, and would conflict with plans adopted for the purpose of avoiding or mitigating an environmental effect, should the Howard and Folsom Streets two-way street network change option be implemented. This alternative, like the Plan, would result in a significant unavoidable conflict with *General Plan* policy regarding traffic noise.

Aesthetics

Under the Modified TODCO Plan, permitted building height limits in the majority of the Plan Area would not change from existing height limits. Exceptions would be at the major development sites identified in the Modified TODCO Plan, where tower height limits would be the same as those permitted by the Plan. Overall, aesthetic changes under the Modified TODCO Plan would be substantially less noticeable than those of the Plan.

The Modified TODCO Plan would not include the Plan's proposed open space improvements, and as a result, this alternative would not alter the physical or operational characteristics of open space areas proposed under the Plan. However, the Modified TODCO Plan would include an approximately 2.8-acre open space. Consequently, the Modified TODCO Plan would result in similar aesthetic impacts (albeit less than significant) associated with construction or operation of the Plan's open space improvements.

Therefore, as with the Plan, the Modified TODCO Plan would have less-than-significant aesthetic impacts.

Cultural and Paleontological Resources

Historic Architectural Resources

The Modified TODCO Plan would result in less development within the Plan Area than the Plan. Similar to the Plan, this alternative would generally prohibit lot mergers of smaller parcels in a deliberate attempt to retain a number of older low- and mid-rise structures. Therefore, this alternative would have comparable impacts to those of the Plan on historical resources. As with the Plan, subsequent development projects under this alternative could result in demolition or substantial alteration of individually identified historic architectural resources or contributing resources to a historic district or conservation district located in the Plan Area. In particular, as with the proposed Plan, the increased allowable height limits on parcels in the southwestern portion of the Modified TODCO Plan area, specifically the California Register-eligible San Francisco Flower Mart District and Bluxome-Townsend Warehouse District sites, could result in additional pressure to develop sites where historical resources are located. However, under the Modified TODCO Plan, identified historic resources would not be included in Articles 10 and 11 of the *Planning Code*, which provide added protection to these resources. The Modified TODCO Plan Alternative would also result in significant

and unavoidable impacts, with mitigation, on historic architectural resources, both with respect to the Modified TODCO Plan and cumulatively.

Mitigation Measures M-CP-1a, Avoidance or Minimization of Effects on Identified Historical Resources; M-CP-1b, Documentation of Historical Resource(s); M-CP-1c, Oral Histories; M-CP-1d, Interpretive Program; and M-CP-1e, Video Recordation, would apply to this alternative with respect to direct effects on historical resources, while **Mitigation Measures M-CP-3a, Protect Historical Resources from Adjacent Construction Activities**, and **M-CP-3b, Construction Monitoring Program for Historical Resources**, would apply, with respect to indirect, construction-related effects.

The Modified TODCO Plan would not include construction the Plan's proposed open space improvements, and consequently, would avoid the Plan's construction-related impacts to architectural historical resources (albeit less than significant) associated with those improvements.

Archeological Resources, Human Remains, and TCRs

The Modified TODCO Plan would result in comparable impacts to those of the Plan on prehistoric and/or historic-period archeological resources, human remains, and/or tribal cultural resources. As with the Plan, this impact would be reduced to a less-than-significant level through implementation of **Mitigation Measures M-CP-4a, Project-Specific Preliminary Archeological Assessment**, and **M-CP-4b, Procedures for Accidental Discovery of Archeological Resources**. Cumulative impacts would likewise be less than significant with mitigation, as with the Plan.

Paleontological Resources

As noted above, the Modified TODCO Plan would result in less development than would the Plan, as well as none of the Plan's open space improvements, but would include a 2.8-acre open space. Impacts to paleontological resources would be less than significant, both for this alternative and cumulatively, as would be the case with the Plan, given the low sensitivity of Plan Area soils for such resources.

Transportation and Circulation

VMT

Under the Modified TODCO Plan, household growth in the Plan Area would be about 12 percent less and employment growth would be about 11 percent less by 2040 than is assumed under the Plan. As with the Plan, the average daily VMT per capita for the Modified TODCO Plan would be substantially lower than the Bay Area regional average for the residential, office, and retail land uses, and the Modified TODCO Plan would meet the *Plan Bay Area* goal of reducing residential VMT per capita by 10 percent compared to year 2005 levels. Thus, impacts related to VMT under the Modified TODCO Plan would be less than significant, as would be the case with the Plan.

Traffic Hazards

Under the Modified TODCO Plan, development projects would not introduce unusual design features. As with the Plan, increases in vehicle, pedestrian and bicycle travel associated with new development would result in the potential for increased vehicle-pedestrian and vehicle-bicycle conflicts, and increased average vehicle delays at intersections, but these increases would not be considered new or a substantial worsening of a traffic hazard. Thus, the impact related to traffic hazards under the Modified TODCO Plan would be less than significant, as would be the case with the Plan.

Transit

Transit ridership would increase about seven percent less under the Modified TODCO Plan than with implementation of the Plan. The relative reduction in ridership would avoid the Plan's significant impact on Muni capacity utilization on some, but not all, screenlines and corridors. In addition, as with the Plan, the Modified TODCO Plan would result in significant impacts on regional (i.e., BART) transit capacity utilization under existing plus Plan and 2040 cumulative conditions. Therefore, impacts related to local and regional transit capacity utilization under the Modified TODCO Plan would be significant and unavoidable with mitigation, as with the Plan, and **Mitigation Measure M-TR-3a, Transit Enhancements**, would be applicable to the Modified TODCO Plan. The Modified TODCO Plan would include the same transit improvements proposed with the Plan, including dedicated transit lanes and bus bulbs at select locations, as part of the street network improvements.

Also as with the Plan, development in the Plan Area under the Modified TODCO Plan would increase traffic congestion, causing delays for Muni buses and regional transit carriers that operate on city streets (Golden Gate Transit and SamTrans), a significant impact under existing plus Plan and 2040 cumulative conditions. Implementation of **Mitigation Measures M-TR-3a, Transit Enhancements; M-TR-3b, Boarding Improvements, M-TR-3c; Signalization and Intersection Restriping at Townsend/Fifth Streets; and M-TR-3d, Implement Tow-away Transit-only Lanes on Fifth Street** could reduce peak-period transit delays on Muni, Golden Gate Transit, and SamTrans routes. However, the feasibility of these measures is uncertain, both because it is not known whether or how much additional funding could be made available and because physical improvements would be the responsibility of the SFMTA. Thus, these measures are not certain to adequately mitigate the impacts to less-than-significant levels, and transit delay impacts would be significant and unavoidable.

Pedestrians and Bicycle Impacts

In terms of pedestrian and bicycle operations, the Modified TODCO Plan is assumed to result in about seven percent less travel by these modes, compared to the Plan; and would implement the same proposed street network changes, including new bicycle lanes and cycle tracks, widened sidewalks, and new mid-block crosswalks. With incrementally less development in the Plan Area by 2040, the Modified TODCO Plan, would not avoid the Plan's significant impacts with respect to pedestrian crowding in crosswalks under existing plus Plan and 2040 cumulative conditions. Pedestrian impacts under the existing plus Plan and 2040 cumulative conditions, therefore, would be significant and unavoidable with mitigation under the Modified TODCO Plan, as with the Plan, and **Mitigation Measure M-TR-4, Upgrade Central SoMa Area Crosswalks** would be applicable to the Modified TODCO Plan. However, these measures would not mitigate impacts to less-than-

significant levels. Under 2040 cumulative conditions, the Modified TODCO Plan would contribute considerably to significant and unavoidable cumulative pedestrian impacts at a number of sidewalk and corner locations, because improvements beyond those proposed as part of the Plan's street network changes would not likely be feasible without redesign of roadways that could remove bicycle, transit-only, or mixed-flow travel lanes. Therefore, pedestrian impacts under existing Modified TODCO Plan and cumulative conditions would be significant and unavoidable with mitigation.

Growth in bicycle travel would also be incrementally less substantial under the Modified TODCO Plan, compared to conditions with the Plan, and the facilities provided would be similar to the Plan. It is anticipated that bicycle-related impacts of the Modified TODCO Plan would be less than significant, as under the Plan.

Loading

With incrementally less development than under the Plan, the Modified TODCO Plan would result in less growth in demand for off-street freight loading spaces, on-street commercial loading spaces, and passenger loading/unloading zones. However, with the same street network changes as the Plan, about 60 existing on-street freight loading zones would be removed under the Modified TODCO Plan, as would a number of on-street passenger loading zones, to implement the proposed street network changes, and other commercial loading spaces and passenger loading/unloading zones would be unavailable during peak periods. This could result in double parking could adversely affect local vehicular, transit, and bicycle circulation, particularly on streets with transit-only and bicycle lanes (e.g., Third, Mission, Howard, and Folsom Streets), and would result in a significant loading impact even with mitigation. Because the Modified TODCO Plan would include the same street network improvements, and because it would include only incrementally less development than the Plan, the Modified TODCO Plan's impact on loading would be significant and unavoidable with mitigation, and **Mitigation Measures M-TR-6a, Driveway and Loading Operations Plan, and M-TR-6b, Accommodation of On-street Commercial Loading Spaces and Passenger Loading/Unloading Zones**, would apply to the Modified TODCO Plan.

Parking

The Modified TODCO Plan would increase parking demand by about seven percent less than the Plan. Because parking-related impacts from the Plan would be less than significant, the Modified TODCO Plan would also have a less-than-significant impact with respect to parking.

Emergency Vehicle Access

Under the Modified TODCO Plan, development projects in the Plan Area would not introduce unusual design features or change the Plan Area street network as to hinder or preclude emergency vehicle access, but would increase traffic volumes on Plan Area streets, and implementation the proposed street network changes under the Modified TODCO Plan would reduce the number of mixed-flow travel lanes on some streets. While emergency vehicles would be able to travel within transit-only lanes, and fire and rescue vehicles would be able to mount the raised separation between vehicle travel lanes and any protected cycle track or transit-only lanes, it is likely that increased traffic congestion combined with reduced roadway capacity dedicated to motor vehicles would occasionally impede emergency vehicle access in the Plan Area during peak periods of traffic with the Modified TODCO Plan, a significant impact. While the Modified TODCO Plan would result in

incrementally less development than with the Plan, impacts related to emergency access would be significant due to increased congestion and the street network changes, as with the Plan. Implementation of **Mitigation Measure M-TR-8, Emergency Vehicle Access Consultation**, would ensure that the final design of each street network project would adequately meet emergency provider needs considering the location of the proposed street network project, the number of mixed-flow travel lanes available to general traffic, and raised buffers between the mixed-flow travel lanes and transit-only lanes and/or cycle tracks, and would not result in secondary transportation-related impacts. With implementation of this mitigation measure impacts related to emergency vehicle access would be less than significant with mitigation, as under the proposed Plan.

Construction Impacts

Construction activities associated with the Modified TODCO Plan would be similar to those described for the Plan, though somewhat less intensive due to less development and fewer tall buildings that would be possible to construct under this alternative than under the Plan. Though the Modified TODCO Plan would result in less development intensity than the Plan, development under the Modified TODCO Plan could still result in several construction projects (development projects and street improvement projects) occurring simultaneously in close proximity to each other within the Plan Area, and result in significant construction-related transportation impacts, including potential disruption of traffic, transit, pedestrian, and bicycle circulation. **Mitigation Measure M-C-TR-9, Construction Management Plan and Construction Coordination**, would still apply, and construction-related transportation impacts would remain significant and unavoidable with mitigation, as for the Plan. As with the Plan, development under the Modified TODCO Plan, in combination with construction of other projects outside of the Plan Area would not result in significant cumulative construction-related transportation impacts.

Noise and Vibration

Traffic-generated noise would be essentially the same under the Modified TODCO Plan as under the Plan, and would be significant and unavoidable, as with the Plan, because traffic generated under the Modified TODCO Plan, while marginally lower in volume on at least some streets, would result in a noise increase in excess of 3 dBA on one or more street segments. Under cumulative conditions, traffic noise would also increase more than 3 dBA, and similarly would be significant and unavoidable, as with the Plan. **Mitigation Measure M-NO-1a, Transportation Demand Management (TDM) for New Development Projects**, would reduce traffic noise from new development by reducing traffic volumes, but not necessarily to a less-than-significant level, and cumulative traffic noise would result in a significant, unavoidable impact to existing noise-sensitive uses.

As with the Plan, newly developed noise-generating uses would be subject to **Mitigation Measure M-NO-1b, Siting of Noise-Generating Uses**, which, along with compliance with the *San Francisco Building Code*, *San Francisco Green Building Code*, and Regulation of Noise from Places of Entertainment, would reduce impacts to sensitive land uses to a less-than-significant level. New noise-sensitive land uses would be required to comply with existing noise control standards and would not be significantly affected, as under the Plan.

Construction noise and construction vibration would be similar in nature to that under the Plan and would be significant. **Mitigation Measures M-NO-2a, General Construction Noise Control Measures**, and **M-NO-2b, Noise and Vibration Control Measures during Pile Driving**, would be applicable to the Modified TODCO

Plan, as would **Mitigation Measures M-CP-3a, Protect Historical Resources from Adjacent Construction Activities**, and **M-CP-3b, Construction Monitoring Program for Historical Resources**. However, if multiple projects were to be under construction simultaneously in close proximity to the same sensitive receptors, the combined effect of these construction noise impacts may result in noise levels for which the available, feasible measures identified in Mitigation Measure M-NO-2a would be insufficient to reduce the construction-related noise impacts to a less-than-significant level. Therefore, potential construction-related noise impacts on adjacent or nearby noise-sensitive receptors would be significant and unavoidable. For the same reasons as for the Plan, cumulative construction noise impacts would be less than significant.

Air Quality and Greenhouse Gas Emissions

The relative reduction in vehicle trip generation would also reduce emissions of criteria air pollutants, GHGs, and traffic-generated TACs, because the Modified TODCO Plan is assumed to result in about 12 percent less residential growth and 11 percent less employment growth in the Plan Area by 2040 than is assumed under the Plan. As with the Plan, VMT under the Modified TODCO Plan would increase by a lesser percentage (66 percent) than service population (138 percent) and so, at a plan level, the Modified TODCO Plan would not result in significant criteria air pollutant impacts. Although the Modified TODCO Plan does not include the same policies as the proposed Plan, this alternative sets forth a framework that would likely ensure compliance with the *2010 Clean Air Plan*, in that this alternative would provide for growth in office-based employment consistent with patterns envisioned by *Plan Bay Area* that are expected to reduce per capita VMT and GHG emissions, and is located in proximity to transit. Thus, the Modified TODCO Plan is presumed to accommodate anticipated employment growth of *Plan Bay Area*, which was developed by ABAG and MTC, who are also the agencies responsible for the growth assumptions in the 2010 Clean Air Plan. Under this alternative, use districts would differ somewhat from those under the proposed Plan. However, existing City programs are consistent with many of the *2010 Clean Air Plan's* Transportation Control measures. As with the proposed Plan, this alternative would support the *Clean Air Plan's* primary air quality, public health, and GHG reduction goals because it would accommodate envisioned growth within a PDA and proximate to substantial transit options. Therefore, the Modified TODCO Plan would not disrupt or hinder implementation of the *Clean Air Plan*.

However, as with the Plan, the potential would remain that one or more subsequent individual development projects in the Plan Area could, if large enough, violate an air quality standard, contribute to an existing or projected air quality violation, and/or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard. As with the proposed Plan, mitigation measures would apply in the form of a project-specific Transportation Demand Management Program (**Mitigation Measure M-NO-1a, Transportation Demand Management for New Development Projects**), which would reduce vehicle trips generated by subsequent development projects and concomitantly reduce emissions of criteria air pollutants and vehicular toxic air contaminants. Other mitigation measures related to operational air quality that are applicable to the Plan would also be applicable to this alternative, including **Mitigation Measures M-AQ-3a, Education for Residential and Commercial Tenants Concerning Low-VOC Consumer Products**; **M-AQ-3b, Reduce Operational Emissions**; and **M-AQ-5a, Best Available Control Technology for Diesel Generators and Fire Pumps**. However, in the absence of certainty that mitigated emissions from every subsequent development

project would be below the applicable significance thresholds, this would be a significant and unavoidable impact of the Modified TODCO Plan.

Since the Modified TODCO Plan would include the Plan's street network changes, the Modified TODCO Plan would reduce the amount of mixed-flow travel lanes and therefore would not have the potential to result in increased vehicle congestion from reduced mixed-flow travel lanes, which was found to result in a significant and unavoidable impact with respect to the street network changes under the Plan. The overall impact of the Modified TODCO Plan on operational air criteria air pollutants would be significant and unavoidable.

Construction emissions of criteria pollutants from subsequent development projects would be incrementally less than under the Plan because there would be less overall development intensity; however, as with the Plan, construction emissions would be significant and mitigation (**Mitigation Measures M-AQ-4a, Construction Emissions Analysis**, and **M-AQ-4b, Construction Emissions Minimization Plan**) would reduce the impact to a less-than-significant level.

As with the Plan, subsequent development under this alternative could generate particulates and TACs that would worsen air quality and adversely affect sensitive receptors. **Mitigation Measure M-NO-1a, Transportation Demand Management (TDM) for New Development Projects**, in Section IV.E, Noise and Vibration, would reduce TACs from vehicle emissions by reducing vehicle trips. **Mitigation Measures M-AQ-3b, Reduce Operational Emissions; M-AQ-5a, Best Available Control Technology for Diesel Generators and Fire Pumps; M-AQ-5b, Siting of Uses that Emit Particulate Matter (PM_{2.5}), Diesel Particulate Matter, or Other Toxic Air Contaminants; and M-AQ-5c, Update Air Pollution Exposure Zone for San Francisco Health Code Article 38**, would reduce the severity of this impact, but not to a less-than-significant level. As a result, this would be a significant and unavoidable impact of TACs emitted by traffic generated by the Modified TODCO Plan, because the degree to which trips (and thereby traffic-generated emissions) could be reduced by Mitigation Measure M-NO-1a cannot be reliably estimated at this time, vehicle emissions are regulated at the State and federal level and local jurisdictions are preempted from imposing stricter emissions standards for vehicles, and no other feasible mitigations for mobile source emissions are available. Construction-related emissions of particulates and TACs under the Modified TODCO Plan would be significant, as with the Plan, but would likewise be mitigated to a less-than-significant level with implementation of **Mitigation Measures M-AQ-6a, Construction Emissions Minimization Plan**, and **M-AQ-6b, Implement Clean Construction Requirements**. The Modified TODCO Plan specifically would not place new residents directly adjacent to the elevated I-80 freeway, avoiding or substantially lessening the air quality impacts on new residents.

It is noted that, to the extent that development that may be precluded under the Modified TODCO Plan from taking place in the Plan Area were to occur elsewhere in the Bay Area, particularly in outlying, less dense locations that are less well-served by transit, employees in and residents of such developments could generate substantially greater impacts on air quality (specifically, regional criteria pollutants) and greenhouse gases than would be the case if a similar amount of office space, other non-residential space, or residential uses were developed in the Plan Area. The operational impacts of this type of development pattern would be relatively greater because lower office and residential densities reduces transit viability, making it likely that equivalent amounts of commercial and residential development would result in more vehicle trips in other locations. To the extent that the development occurs outside of PDAs identified in *Plan Bay Area*, that development could

hinder meeting *Plan Bay Area's* regional GHG per capita targets. This could be a significant, albeit indirect and somewhat speculative, impact of the Modified TODCO Plan.

Impacts related to greenhouse gas emissions would be less than significant, as with the Plan, given that subsequent development projects would be required to comply with the City's Greenhouse Gas Reduction Strategy.

Wind

The Modified TODCO Plan proposes no height limit increases in the Plan Area for any new development above the existing height limits currently in effect, except as specified for certain major development sites, which would be same as under the Plan. Consequently, potential wind effects in the majority of the Plan Area under the Modified TODCO Plan (with the exception of the major development sites) would be expected to be less than that which would occur under Plan. At those locations in the Plan Area where height limits would not increase, the Modified TODCO Plan would be unlikely to result in substantial wind effects, and thus wind impacts would be less than significant.

On the other hand, potential wind effects at the major development sites in the Plan Area would be expected to be similar to that of the Plan, and associated wind hazard impacts could be similarly significant. As with the Plan, implementation of **Mitigation Measure M-WI-1, Wind Hazard Criterion for the Plan Area**, would require the major development project to be subject to additional wind analysis, including potential wind tunnel testing, and as needed, to adhere to wind hazard standards to reduce ground-level wind hazard exceedances. Nevertheless, as with the Plan, it cannot be stated with certainty that each major development project would be able to meet the wind hazard performance standard, and this impact would remain significant and unavoidable, as with the Plan.

Shadow

Under the Modified TODCO Plan, permitted building height limits in the majority of the Plan Area would not change from existing height limits. Exceptions would be at the major development sites identified in the Modified TODCO Plan, where tower height limits would be the same as those permitted by the Plan. Therefore, for the most part, the shadow effects of this alternative would be the same as, or less than, those of the Plan, and similarly less than significant.

Hydrology and Water Quality (Sea Level Rise and Combined Sewer System)

Like the Plan, the Modified TODCO Plan would not alter the northern shoreline of Mission Creek, which provides inundation pathways for flooding from future sea level rise. Nor would this alternative raise or lower the ground surface in a manner that would redirect flood flows. As with the Plan, development under the Modified TODCO Plan could be affected by future sea level rise in the Plan Area. However, consistent with the California Supreme Court's decision in *California Building Industry Association v. Bay Area Air Quality Management District*, this would not be a significant effect under CEQA, because development pursuant to the Modified TODCO Plan would not significantly exacerbate this existing environmental hazard. As under existing conditions, projects in areas that are currently prone to flooding from the combined sewer system

during wet weather would be reviewed by the SFPUC during the project approval process and may require additional actions such as incorporation of a pump station for sewage flows, raised elevation of entryways, special sidewalk construction, and deep gutters. These measures would reduce the potential for localized flooding. Therefore, impacts related to flooding would be less than significant, as under the Plan and the No Project Alternative.

The Modified TODCO Plan would result in less development than the Plan, and thus would lessen the increase in wastewater generation. If certain sites were not redeveloped at all, this alternative would also result in less of a decrease in the amount of stormwater runoff to the combined sewer system. However, because the relationship between the increase in wastewater and the decrease in stormwater would remain similar to that under the Plan, the reduction in stormwater flows due to required stormwater reduction measures is expected to offset estimated increases in wastewater flows during wet weather such that there would not be an increase in wet weather combined sewer discharges, and impacts related to an increase in combined sewer discharges under the Modified TODCO Plan would be less than significant, as under the Plan and the No Project Alternative.

Issues Analyzed in the Initial Study

Impacts Related to the Intensity of Development

Given that the Modified TODCO Plan would have fewer households and thus lower overall residential population than the Plan, it is expected the demand for, and associated impacts related to, recreation and public space would also be incrementally less substantial than under the Plan. Similarly, given that the Modified TODCO Plan would have fewer households and less overall development intensity than the Plan, the demand for, and associated impacts to, utilities and service systems, and public services, would also be less than under the Plan; and all of these impacts would be less than significant.

Impacts Related to Site-Specific Conditions

Impacts related to site-specific conditions, such as those related to biology, geology and soils, hydrology and water quality, and hazardous materials would be similar to or less severe than those of the proposed Plan because many of the same sites could be subject to future development. Therefore, impacts related to geology and soils would be the same as under the Plan. As with the Reduced Heights Alternative, it is not anticipated that foundation systems (and, therefore, ground-disturbing activities) would be substantially different than with development pursuant to the Plan because the Modified TODCO Plan would construct high-rise buildings on most of the same sites. **Mitigation Measures M-BI-1, Pre-construction Bat Surveys, and M-HZ-3, Hazardous Building Materials Abatement** would be applicable, as with the Plan and the Reduced Heights Alternative, and, in the case of biological resources and hazardous materials, impacts of the Modified TODCO Plan would be less than significant with mitigation, as with the Plan and the Reduced Heights Alternative. Impacts on geology and hydrology and water quality would be less than significant, as with the Plan, the Reduced Heights Alternative and the No Project Alternative.

As with the proposed Plan, the Modified TODCO Plan would have less-than-significant impacts related to mineral and energy resources and no impacts on agricultural or forest resources, because these resources do not exist within the Plan Area.

Project Objectives

TODCO indicates its plan is premised on ensuring the capacity for development of about five million square feet of new office development in the Central Corridor over the next 20 years; and seeks, among other objectives, to increase PDR/Arts protections beyond that proposed by the Plan; maintain commercial development sites in locations where residential development is not appropriate; maximize the on-site public benefits of the major developments; avoid negative shadow effects on public open spaces; avoid incentivizing demolition of smaller existing buildings; and concentrate neighborhood street life and retail activity on Folsom and Fourth Streets.

Because the Modified TODCO Plan would develop approximately 11 percent less new office space than with the Plan, this alternative would partially achieve the Plan's goals of "increas[ing] the capacity for jobs and housing" (Objective 1) and "facilitat[ing] an economically diversified and lively jobs center (Objective 3), but not as well as the Plan. Since the Plan's street network changes would be implemented, this alternative would meet Objective 4 of the Plan, "provide safe and convenient transportation that prioritizes walking, bicycling, and transit." Additionally, the Modified TODCO Plan would appear to "offer an abundance of parks and recreational opportunities" (Objective 5) and to "create an environmentally sustainable and resilient neighborhood" (Objective 6). This alternative would appear to conform to Objective 8, to "ensure that new buildings enhance the character of the neighborhood and the city," as it would result in an "overall development pattern ... complementary to the skyline" (Plan Objective 8.2) and would "reinforce the character of Central SoMa as a mid-rise district with tangible 'urban rooms'" (Plan Objective 8.3) and use urban form to emphasize important nodes, such as the Central Subway. Accordingly, the Modified TODCO Plan would meet most of the objectives of the proposed Plan.

VI.E Alternative 4: Land Use Variant

VI.E.1 Description

The Land Use Variant is a variant of the Plan that would not permit residential uses in the WS-SALI and WS-MUO use districts in the area roughly bounded by Bryant, Townsend, Fourth and Sixth Streets. Although this area would be zoned MUO as proposed under the Plan, the prohibition on new housing adopted as part of the Western SoMa Plan would remain in effect. The intention of the Land Use Variant is to minimize potential land use conflicts in this approximately four-block area between new housing and existing and future commercial and entertainment uses. The Land Use Variant would be overlaid upon the Plan, and this alternative would allow for development at the same heights and same locations as under the Plan; only the above-described land use changes would be different within the area covered by the Land Use Variant. All other aspects of the Land Use Variant would be the same as under the Plan, including the street network changes proposed under the Plan.

For purposes of a conservative and comparative analysis, this alternative assumes that the Land Use Variant would be adopted in conjunction the Plan, which as shown in Table VI-1 would result in approximately 10 percent fewer new households and about four percent more new jobs than would be the case under the Plan. This alternative would allow 1.8 million square feet less residential development, and 0.59 million square

feet more commercial development than the Plan, for a net decrease of 1.2 million square feet development compared to the Plan.

VI.E.2 Alternative 4—Land Use Variant: Impacts

Land Use and Land Use Planning

Land use impacts would be similar to those of the Plan under the Land Use Variant. Like the Plan, this alternative would not physically divide an existing community, as it would not introduce physical barriers, and would result in a less-than-significant impact. This alternative would prohibit new residential construction in the area bounded by Bryant, Townsend, Fourth and Sixth Streets. Consequently, the Land Use Variant would result in incrementally lesser potential for land use conflicts inasmuch as the variant would preclude residential uses where nighttime entertainment would be encouraged. Given the compliance with the *San Francisco Building Code*, *San Francisco Green Building Code*, and Regulation of Noise from Places of Entertainment, these impacts would be less than significant, as under the Plan. However, with the Howard and Folsom Streets two-way option for street network improvements, this alternative would have the same significant unavoidable conflict with the *General Plan* policy regarding traffic noise.

Aesthetics

Aesthetic impacts would be less than significant, as with the Plan, and impacts are assumed to be very similar to those of the Plan because, while the Land Use Variant would allow only non-residential uses in the approximately four block area between Bryant, Townsend, Fourth, and Sixth Streets, building height and massing would be anticipated to be comparable to those under the Plan. As with the Plan, development under the Land Use Variant would not adversely affect the visual character of the Plan Area or scenic resources, nor would it substantially alter the public views of the Plan Area, result in substantially increased light and glare, or make a considerable contribution to aesthetic conditions in the Plan Area, and these, impacts, too, would be less than significant.

Cultural and Paleontological Resources

Historic Architectural Resources

Because it would involve essentially the same development sites as the Plan, this alternative, like the Plan, would result in a significant and unavoidable impact, with mitigation, on historic architectural resources resulting from the demolition or substantial alteration of historical resources. Cumulative impacts on historical resources would likewise be significant and unavoidable with mitigation, as would be the case for the Plan. **Mitigation Measures M-CP-1a, Avoidance or Minimization of Effects on Identified Historical Resources; M-CP-1b, Documentation of Historical Resource(s); M-CP-1c, Oral Histories; M-CP-1d, Interpretive Program; and M-CP-1e, Video Recordation**, would apply with respect to direct effects on historical resources, while **Mitigation Measures M-CP-3a, Protect Historical Resources from Adjacent Construction Activities, and M-CP-3b, Construction Monitoring Program for Historical Resources**, would apply with respect to indirect, construction-related effects.

Archeological Resources, Human Remains, and TCRs

The Land Use Variant would result in comparable impacts to those of the Plan on prehistoric and/or historic-period archeological resources, human remains, and/or tribal cultural resources. As with the Plan, this impact would be reduced to a less-than-significant level through implementation of **Mitigation Measures M-CP-4a, Project-Specific Preliminary Archeological Assessment**, and **M-CP-4b, Procedures for Accidental Discovery of Archeological Resources**. Cumulative impacts would likewise be less than significant with mitigation, as with the Plan.

Paleontological Resources

Impacts to paleontological resources would be less than significant, both for this alternative and cumulatively, as would be the case with the Plan, given the low sensitivity of Plan Area soils for such resources.

Transportation and Circulation

VMT

Under the Land Use Variant, residential growth in the Plan Area would be 10 percent less and employment growth would be about four percent more by 2040 than is assumed under the Plan. As with the Plan, the average daily VMT per capita for the Land Use Variant would be substantially lower than the Bay Area regional average for the residential, office, and retail land uses, and the Land Use Variant would meet the *Plan Bay Area* goal of reducing residential VMT per capita by 10 percent compared to year 2005 levels. In addition, the street network changes under the Land Use Variant would not substantially induce automobile travel, as with the Plan. Thus, impacts related to VMT under the Land Use Variant would be less than significant, as would be the case with the Plan.

Traffic Hazards

Under the Land Use Variant, development projects and the proposed street network changes would not introduce unusual design features. As with the Plan, increases in vehicle, pedestrian and bicycle travel associated with new development would result in the potential for increased vehicle-pedestrian and vehicle-bicycle conflicts, and increased average vehicle delays at intersections, but these increases would not be considered new or a substantial worsening of a traffic hazard. Thus, the impact related to traffic hazards under the Land Use Variant would be less than significant, as would be the case with the Plan.

Transit

Transit ridership would increase by nearly the same amount as with implementation of the Plan, given that changes in anticipated population growth resulting from Plan implementation would be similar. Therefore, this alternative would not avoid any of the significant transit impacts identified under the Plan, and impacts related to Muni and regional transit capacity utilization under the existing plus Land Use Variant and 2040 cumulative conditions would be significant and unavoidable with mitigation, as with the Plan. **Mitigation Measure M-TR-3a, Transit Enhancements**, would be applicable to the Land Use Variant. The Land Use

Variant would include the same transit improvements proposed with the Plan, including dedicated transit lanes and bus bulbs at select locations, as part of the street network improvements.

Also as with the Plan, development in the Plan Area under the Land Use Variant would increase traffic congestion, causing delays for Muni buses and regional transit carriers that operate on city streets (Golden Gate Transit and SamTrans), a significant impact under existing plus Plan and 2040 cumulative conditions. Implementation of **Mitigation Measures M-TR-3a, Transit Enhancements; M-TR-3b, Boarding Improvements, M-TR-3c, Signalization and Intersection Restriping at Townsend/Fifth Streets; and M-TR-3d, Implement Tow-away Transit-only Lanes on Fifth Street**, could reduce peak-period transit delays on Muni, Golden Gate Transit, and SamTrans routes; however, the feasibility of these measures is uncertain, both because it is not known whether or how much additional funding could be made available and because physical improvements would be the responsibility of the SFMTA. Thus, these measures are not certain to adequately mitigate the impacts to less-than-significant levels. Therefore, impacts to Muni, Golden Gate Transit and SamTrans operations would be significant and unavoidable.

Pedestrian and Bicycle Impacts

In terms of pedestrian and bicycle operations, the Land Use Variant would result in about the same amount of travel by these modes as would the Plan, and would implement the same proposed street network changes, including new bicycle lanes and cycle tracks, widened sidewalks, and new mid-block crosswalks. Thus, the Land Use Variant would not avoid the Plan's significant impacts with respect to pedestrian crowding in crosswalks under existing plus Plan and 2040 cumulative conditions. Pedestrian impacts would be significant and unavoidable, as with the Plan. **Mitigation Measure M-TR-4, Upgrade Central SoMa Crosswalks**, would be applicable to the Land Use Variant.

Bicycle travel and facilities would also be similar under the Land Use Variant to that with the Plan. Inasmuch as the Plan would result in less-than-significant impacts with respect to bicycle conditions, bicycle-related impacts of the Land Use Variant would also be less than significant.

Loading

Under the Land Use Variant, loading impacts would be the same as for the Plan. The Land Use Variant would result in similar demand for off-street freight loading spaces, on-street commercial loading spaces, and passenger loading/unloading zones as for the Plan. However, with the same street network changes as the Plan, removal of on-street commercial loading spaces and passenger loading/unloading zones could result in double parking that could adversely affect local vehicular, transit, and bicycle circulation, particularly on streets with transit-only and bicycle lanes. Because the Land Use Variant would include the same street network improvements, its impact on loading would be significant and unavoidable with mitigation, as with the Plan. **Mitigation Measures M-TR-6a, Driveway and Loading Operations Plan, and M-TR-6b, Accommodation of On-street Commercial Loading Spaces and Passenger Loading/Unloading Zones**, would apply to the Land Use Variant.

Parking

The Land Use Variant would increase parking demand similar to the Plan. Because parking impacts from the Plan would be less than significant, the Land Use Variant would also have a less-than-significant impact with respect to parking.

Emergency Vehicle Access

Under the Land Use Variant Alternative, emergency vehicle access impacts would be the same as for the Plan. The Land Use Variant would result in essentially the same amount of development as with the Plan, and impacts to emergency vehicle access would be significant due to increased congestion and the street network changes, which could impede emergency vehicles during periods of peak traffic volumes, as with the Plan. **Mitigation Measure M-TR-8, Emergency Vehicle Access Consultation**, would apply to the Land Use Variant and therefore impacts related to emergency vehicle access would be less than significant with mitigation, as under the Plan.

Construction Impacts

Construction activities associated with the Land Use Variant Alternative would be similar to those that described for the Plan. Development under the Land Use Variant Alternative under existing plus Plan conditions could still result in several construction projects (development projects and street improvement projects) occurring simultaneously in close proximity to each other within the Plan Area, and result in significant construction-related transportation impacts, including potential disruption of traffic, transit, pedestrian, and bicycle circulation. **Mitigation Measure M-TR-9, Construction Management Plan and Construction Coordination**, would apply to the Land Use Variant Alternative, and construction-related transportation impacts under existing plus Land Use Variant Alternative would remain significant and unavoidable with mitigation, as with the Plan. As with the Plan, development under the Land Use Variant Alternative, in combination with construction of other projects outside of the Plan Area would not result in significant cumulative construction-related transportation impacts.

Noise and Vibration

Traffic-generated noise would be similar under the Land Use Variant to that under the Plan, and would likewise be significant and unavoidable, because traffic would result in a noise increase in excess of 3 dBA on one or more street segments along Howard Street under the Howard and Folsom Streets two-way option. (As with the Plan, traffic noise with the Howard and Folsom Streets one-way option would be less than significant under the Land Use Variant.) Under cumulative conditions, traffic noise would be significant and unavoidable under both Folsom/Howard options. **Mitigation Measure M-NO-1a, Transportation Demand Management (TDM) for New Development Projects**, would reduce traffic noise from new development by reducing traffic volumes, but not necessarily to a less-than-significant level, and cumulative traffic noise would result in a significant and unavoidable impact to existing noise-sensitive uses.

As with the Plan, newly developed noise-generating uses would be subject to **Mitigation Measure M-NO-1b, Siting of Noise-Generating Uses**, which, along with compliance with the *San Francisco Building Code*, *San Francisco Green Building Code*, and Regulation of Noise from Places of Entertainment, would reduce impacts on

sensitive land uses to a less-than-significant level. New noise-sensitive land uses would be required to comply with existing noise control standards and would not be significantly affected. Moreover, the Land Use Variant would prohibit housing in the area roughly bounded by Bryant, Townsend, Fourth, and Sixth Streets, within the Plan's proposed Central SoMa SUD Entertainment Sub-area, which would limit the potential for noise conflicts between entertainment and residential uses. Thus, under the variant, there would be less potential for noise from nighttime entertainment, especially new Places of Entertainment, to disturb residents and for residents to seek to restrict the operations of Places of Entertainment. It is noted that the Land Use Variant would not completely eliminate such conflicts because this area contains a fair number of existing residential buildings, notably on Bluxome Street, on Townsend Street at Fifth and at Sixth Streets, and on Brannan Street between Fourth and Fifth Streets, although most are relatively new and thus likely to include better noise insulation than older residential development. As noted, new entertainment uses would be required to be designed to minimize noise impacts on any nearby existing residential uses in accordance with **Mitigation Measure M-NO-1b, Siting of Noise-Generating Uses**, and *Police Code* provisions that allow the Entertainment Commission to adopt noise-related permit conditions on Places of Entertainment. Combined implementation of the City code provisions and Mitigation Measure M-NO-1b would reduce the potential for noise conflicts between new entertainment and existing residential uses proposed as part of the Land Use Variant to a less-than significant level.

Construction noise and construction vibration would be similar in nature to that under the Plan and would be significant. **Mitigation Measures M-NO-2a, General Construction Noise Control Measures, and M-NO-2b, Noise and Vibration Control Measures during Pile Driving**, would be applicable to the Land Use Variant, as would **Mitigation Measures M-CP-3a, Protect Historical Resources from Adjacent Construction Activities, and M-CP-3b, Construction Monitoring Program for Historical Resources**. However, if multiple projects were to be under construction simultaneously in close proximity to the same sensitive receptors, the combined effect of these construction noise impacts may result in noise levels for which the available, feasible measures identified in Mitigation Measure M-NO-2a would be insufficient to reduce the construction-related noise impacts to a less-than-significant level. Therefore, potential construction-related noise impacts on adjacent or nearby noise-sensitive receptors would be significant and unavoidable. For the same reasons as for the Plan, cumulative construction noise impacts would be less than significant.

Air Quality and Greenhouse Gas Emissions

Emissions of criteria air pollutants, GHGs, and traffic-generated TACs would be slightly less than those of the Plan because the Land Use Variant would result in less development. As with the Plan, VMT would increase by a lesser percentage (78 percent) than service population (155 percent) and so, at a plan level, the Land Use Variant would not result in significant criteria air pollutant impacts. However, as with the Plan, one or more subsequent individual development projects in the Plan Area could, if large enough, violate an air quality standard, contribute to an existing or projected air quality violation, and/or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard. Mitigation would also apply to the Land Use Variant in the form of a project-specific Transportation Demand Management Program (**Mitigation Measure M-NO-1a, Transportation Demand Management for New Development Projects**), which would

reduce vehicle trips generated by subsequent development projects and concomitantly reduce emissions of criteria air pollutants and vehicular toxic air contaminants.⁴³² Other mitigation measures related to operational air quality that are applicable to the Plan would also be applicable to the Land Use Variant, including **Mitigation Measures M-AQ-3a, Education for Residential and Commercial Tenants Concerning Low-VOC Consumer Products; M-AQ-3b, Reduce Operational Emissions; and M-AQ-5a, Best Available Control Technology for Diesel Generators and Fire Pumps**. However, in the absence of certainty that mitigated emissions from every subsequent development project would be below the applicable significance thresholds, this would be a significant and unavoidable impact of the Land Use Variant.

The proposed Plan's use districts and policy framework would be similar to those under the Land Use Variant as under the Plan, except that there would be less residential development, which would be precluded from some of the Plan Area. Moreover, as noted in Table IV.F-6, Consistency of the Plan with Transportation Control Measures of the 2010 Clean Air Plan, in Section IV.F, Air Quality, existing City programs are consistent with many of the 2010 *Clean Air Plan's* Transportation Control measures. As with the Plan, the Land Use Variant would support the *Clean Air Plan's* primary air quality, public health, and GHG reduction goals. Therefore, the Land Use Variant would not disrupt or hinder implementation of the *Clean Air Plan*.

Construction emissions of criteria pollutants from subsequent development projects would be somewhat less under the Land Use Variant, compared to that under the Plan. As with the Plan, construction emissions would still be significant and mitigation (**Mitigation Measures M-AQ-4a, Construction Emissions Analysis, and M-AQ-4b, Construction Emissions Minimization Plan**) would reduce the impact to a less-than-significant level.

As with the Plan, subsequent development under the Land Use Variant could generate particulates and TACs that would worsen air quality and adversely affect sensitive receptors. **Mitigation Measure M-NO-1a, Transportation Demand Management (TDM) for New Development Projects**, in Section IV.E, Noise and Vibration, would reduce TACs from vehicle emissions by reducing vehicle trips. **Mitigation Measures M-AQ-3b, Reduce Operational Emissions; M-AQ-5a, Best Available Control Technology for Diesel Generators and Fire Pumps; M-AQ-5b, Siting of Uses that Emit Particulate Matter (PM_{2.5}), Diesel Particulate Matter, or Other Toxic Air Contaminants; and M-AQ-5c, Update Air Pollution Exposure Zone for San Francisco Health Code Article 38**, would reduce the severity of this impact, but not to a less-than-significant level. As a result, this would be a significant and unavoidable impact of TACs generated by the Land Use Variant, because the degree to which trips (and thereby traffic-generated emissions) could be mitigated cannot be reliably estimated. Additionally, vehicle emissions are regulated at the State and federal level and local jurisdictions are preempted from imposing stricter emissions standards for vehicles, and no other feasible mitigations for mobile source emissions are available.

Construction-related emissions of particulates and TACs under the Land Use Variant would be significant, as with the Plan, but would likewise be mitigated to a less-than-significant level with implementation of **Mitigation Measure M-AQ-6a, Construction Emissions Minimization Plan, and M-AQ-6b, Implement Clean Construction Requirements**.

⁴³² As noted in Chapter II, Project Description, the City is anticipated to adopt an ordinance by fall 2016 that would mandate TDM Programs in many new development projects.

The Land Use Variant would result in 1.2 million square feet less development compared to the Plan. Nevertheless, as with the proposed Plan, this alternative would support the VMT reduction goals of *Plan Bay Area* because it would accommodate envisioned growth within a PDA and proximate to substantial transit options.

Impacts related to greenhouse gas emissions would be less than significant, as with the Plan, given that subsequent development projects would be required to comply with the City's Greenhouse Gas Reduction Strategy.

Wind

Wind impacts would be essentially the same under the Land Use Variant as under the Plan. As stated in the description of this alternative, that the Land Use Variant would be overlaid upon the Plan, this alternative would allow for development at the same heights and same locations as under the Plan; only the land uses would be different within the approximately four-block area covered by the Land Use Variant. In this area, no new residential uses would be allowed. Similar to the Plan, implementation of **Mitigation Measure M-WI-1, Wind Hazard Criterion for the Plan Area**, for the Land Use Variant would serve to reduce the wind hazard impacts associated with subsequent development projects; however, this impact would remain significant and unavoidable, as under the Plan.

Shadow

Shadow impacts would be the same under the Land Use Variant as under the Plan. As stated in the description of this alternative, that the Land Use Variant would be overlaid upon the Plan, this alternative would allow for development at the same heights and same locations as under the Plan; only the land uses would be different within the approximately four-block area covered by the Land Use Variant. As with the Plan, shadow impacts would be less than significant.

Hydrology and Water Quality (Sea Level Rise and Combined Sewer System)

Like the Plan, the Land Use Variant would not alter the northern shoreline of Mission Creek, which provides inundation pathways for flooding from future sea level rise; nor would it raise or lower the ground surface in a manner that would redirect flood flows. As with the Plan, development under the Land Use Variant could be affected by future sea level rise adjacent to the Plan Area. However, consistent with the California Supreme Court's decision in *California Building Industry Association v. Bay Area Air Quality Management District*, this would not be a significant effect under CEQA, because development pursuant to the Land Use Variant would not significantly exacerbate this existing environmental hazard. As under existing conditions, projects in areas that are currently prone to flooding from the combined sewer system during wet weather would be reviewed by the SFPUC during the project approval process and may require additional actions such as incorporation of a pump station for sewage flows, raised elevation of entryways, special sidewalk construction, and deep gutters. These measures would reduce the potential for localized flooding. Therefore, impacts of the Land Use Variant related to flooding would be less than significant, as under the Plan.

The Land Use Variant would result in a similar amount of development as the Plan; both wastewater generation and stormwater flows would be similar. As with the Plan, the reduction in stormwater flows due to required stormwater reduction measures is expected to offset estimated increases in wastewater flows during wet weather such that there would not be an increase in wet weather combined sewer discharges, and impacts related to an increase in combined sewer discharges under the Land Use Variant would be less than significant.

Issues Analyzed in the Initial Study

Impacts Related to the Intensity of Development

Given that the Land Use Variant would have about 10 percent fewer households and similarly smaller residential population than the Plan, it is expected the demand for, and associated impacts related to, recreation and public space would be incrementally less substantial than the Plan. Similarly, given that the Land Use Variant would have incrementally fewer households and slightly higher commercial use intensity than the Plan, the overall demand for, and associated impacts to, utilities and service systems, and public services would be similar to those of the Plan; all these impacts would be less than significant, as with the Plan.

Impacts Related to Site-Specific Conditions

Impacts related to site-specific conditions, such as those related to biology, geology and soils, hydrology and water quality, and hazardous materials would be similar to those of the Plan because it can be assumed that many, if not most, of the same sites would be affected by subsequent future development projects. It is not anticipated that foundation systems (and, therefore, ground-disturbing activities) would be substantially different than with development pursuant to Plan, because the Land Use Variant would allow the construction of high-rise buildings on the same sites. Therefore, impacts related to geology and soils would be the same as under the Plan. **Mitigation Measures M-BI-1, Pre-construction Bat Surveys, and M-HZ-3, Hazardous Building Materials Abatement** would be applicable, as with the Plan.

As with the Plan, this alternative would have less-than-significant impacts related to mineral and energy resources and no impacts on agricultural or forest resources, because these resources are not present within the Plan Area.

Project Objectives

The Land Use Variant would meet most of the eight project objectives because it would allow for development on the same sites and at the same height and density as the Plan. The Land Use Variant would perform incrementally better than the Plan with respect to Plan Objective 3.6, “Recognize the importance of nightlife uses in creating a complete neighborhood,” in that it would provide a more-supportive framework for such uses by reducing land use conflicts with residential uses. However, by not permitting as much housing in the Plan Area as under the Plan, the Land Use Variant would not meet the Plan objective to “increase the capacity for jobs and housing (Objective 1) to the same extent as the Plan.

VI.F Alternative 5: Land Use Plan Only Alternative

VI.F.1 Description

The Land Use Plan Only Alternative assumes the same policies and *Planning Code* and *General Plan* amendments would be implemented as with the Plan, except that this alternative would exclude implementation of the Plan's proposed street network changes. As such, development assumptions for this alternative would be the same as those for the Plan, including the addition, by 2040 in the Plan Area, of approximately 14,400 households, 25,500 residents and approximately 63,600 jobs. Total floor area developed by 2040 in the Plan Area under this alternative would also be the same as the Plan, at 31.7 million square feet.

VI.F.2 Alternative 5—Land Use Plan Only Alternative: Impacts

Because the Land Use Only Alternative would not include the Plan's proposed street network changes, this alternative would result in no impacts related to construction and operation of this project component. This analysis considers impacts of the Land Use Plan Only Alternative as it relates to the removal of street network changes on land use, subsurface cultural resources (including archeological resources, tribal cultural resources, and human remains), transportation, noise, air quality, and greenhouse gas emissions.

Because there would be no change in Plan Area development intensity or locations of development under the Land Use Plan Only Alternative compared to the Plan, impacts of this alternative as it relates to development density would be the same as those of the Plan with respect to land use, aesthetics, cultural resources, wind, shadow, hydrology and water quality (including flooding due to sea level rise and combined sewer system capacity), population and housing, recreation, utilities and service systems, public services, biology, geology, and hazards and hazardous materials. Nevertheless, relevant effects and mitigation measures for key topics, including transportation, air quality and noise are summarized below.

Land Use and Land Use Planning

The Land Use Plan Only Alternative would not include the Plan's proposed street network changes, and as a result, this alternative would not involve any construction within, or alter the physical or operational characteristics of, public rights-of-way associated with the street network changes proposed under the Plan. Since it does not include the street network changes proposed for the Plan, this alternative would avoid the significant and unavoidable conflict with General Plan policy regarding traffic noise (Impact LU-2).

Cultural and Paleontological Resources

Historic Architectural Resources

The Land Use Plan Only Alternative would involve the same development sites as the Plan. As such, the Land Use Plan Only Alternative, like the Plan, would result in a significant and unavoidable impact, with mitigation, on historic architectural resources resulting from the demolition or substantial alteration of historical resources. Cumulative impacts on historical resources would likewise be significant and

unavoidable with mitigation, as would be the case for the Plan. **Mitigation Measures M-CP-1a, Avoidance or Minimization of Effects on Identified Historical Resources; M-CP-1b, Documentation of Historical Resource(s); M-CP-1c, Oral Histories; M-CP-1d, Interpretive Program; and M-CP-1e, Video Recordation**, would apply with respect to direct effects on historical resources, while **Mitigation Measures M-CP-3a, Protect Historical Resources from Adjacent Construction Activities, and M-CP-3b, Construction Monitoring Program for Historical Resources**, would apply with respect to indirect, construction-related effects.

The Land Use Plan Only Alternative would not include the Plan's proposed street network changes, and consequently, would avoid the Plan's construction-related impacts to architectural historical resources (albeit less than significant) associated with construction of those improvements.

Archeological Resources, Human Remains, and TCRs

The Land Use Plan Only Alternative would result in marginally lesser impacts than those of the Plan on prehistoric and/or historic-period archeological resources, human remains, and/or tribal cultural resources, because this alternative would avoid excavation associated with street improvements such as transit boarding islands, new traffic signals and associated electrical conduits, sidewalk bulb-outs widened sidewalks, and cycle tracks. However, impacts to such resources would still occur as a result of subsequent development projects. As with the Plan, this impact would be reduced to a less-than-significant level through implementation of **Mitigation Measures M-CP-4a, Project-Specific Preliminary Archeological Assessment, and M-CP-4b, Procedures for Accidental Discovery of Archeological Resources**. Cumulative impacts would likewise be less than significant with mitigation, as with the Plan, and would be somewhat less substantial for the reasons noted above. The Land Use Only Plan Alternative would also avoid the less-than-significant impacts to human remains and tribal cultural resources associated with construction of those improvements.

Paleontological Resources

Impacts to paleontological resources would be less than significant, both for the Land Use Plan Only Alternative and cumulatively, as would be the case with the Plan, given the low sensitivity of Plan Area soils for such resources.

Transportation and Circulation

VMT

Under the Land Use Plan Only Alternative, residential and employment growth in the Plan Area would be the same as under the Plan. Thus, as with the Plan, the Land Use Plan Only Alternative would meet the *Plan Bay Area* goal of reducing residential VMT per capita by 10 percent compared to year 2005 levels. The Land Use Plan Only Alternative would not include any transportation features (e.g., street network changes) that would substantially induce automobile travel, but would lack the street network changes proposed under the Plan that would likely further reduce VMT by promoting alternative transportation modes. Thus, impacts related to VMT under the Land Use Plan Only Alternative would be less than significant, as would be the case with the Plan.

Traffic Hazards

Under the Land Use Plan Only Alternative, development projects would not introduce unusual design features. As with the Plan, increases in vehicle, pedestrian and bicycle travel associated with new development would result in the potential for increased vehicle-pedestrian and vehicle-bicycle conflicts, and increased average vehicle delays at intersections, but these increases would not be considered new or a substantial worsening of a traffic hazard. The Land Use Plan Only Alternative would lack the street network changes proposed under the Plan that would help further reduce the number of conflicts. Thus, the impact related to traffic hazards under the Land Use Plan Only Alternative would be less than significant, as would be the case with the Plan.

Transit

Transit ridership under the Land Use Plan Only Alternative would increase by the same amount as with implementation of the Plan, as the SF-CHAMP model analysis of travel demand associated with the Plan did not identify appreciable changes to the number or mode (i.e., auto, transit, walk, bicycle, and other modes) of person trips between conditions without and with the proposed street network changes. Therefore, the Land Use Plan Only Alternative would not avoid the significant Muni and regional transit capacity utilization impacts identified under the Plan for existing plus Plan and 2040 cumulative conditions, and impacts related to transit capacity utilization under this alternative would be significant and unavoidable with mitigation, as with the Plan. **Mitigation Measure M-TR-3a, Transit Enhancements**, would be applicable to the Land Use Plan Only Alternative.

The Land Use Plan Only Alternative would not include the Plan's proposed transit improvements, including dedicated transit lanes and bus bulbs at select locations. As with the Plan, development in the Plan Area under the Land Use Plan Only Alternative would increase traffic congestion, causing delays for Muni buses and regional transit carriers that operate on city streets (i.e., Golden Gate Transit and SamTrans), a significant impact. Specifically with respect to Muni service, the Land Use Plan Only Alternative would avoid the significant travel time increases on the 10 Townsend (Howard/Folsom two-way option only), 14 Mission, and 14R Mission Rapid that would occur under the Plan, but would introduce new significant travel time increases on the 8AX and 8BX Bayshore Express, 30 Stockton, and 45 Union-Stockton, and would further exacerbate significant travel time increases on the 8 Bayshore, 27 Bryant and 47 Van Ness, compared to what would occur under the Plan. While the Plan would cause significant transit delay impacts during the PM peak hour only, the Land Use Plan Only would cause significant transit delay impacts during both the AM peak and PM peak hours, though fewer lines would be significantly impacted overall.

Implementation of **Mitigation Measures M-TR-3a, Transit Enhancements; M-TR-3b, Boarding Improvements; M-TR-3c, Signalization and Intersection Restriping at Townsend/Fifth Streets; and M-ALT-TR-1, Upgrade Transit-Only Lanes on Third Street**, could reduce peak-period transit delays on Muni, Golden Gate Transit, and SamTrans routes; however, the feasibility of these measures is uncertain, both because it is not known whether or how much additional funding could be made available, and because physical improvements would be the responsibility of the SFMTA, and thus these measures are not certain to adequately mitigate the impacts to less-than-significant levels. **Mitigation Measure M-TR-3d, Implement Tow-away Lanes on Fifth Street**, would not be applicable because the Land Use Plan Only Alternative would

avoid significant travel time increases on the 10 Townsend route. Therefore, impacts to Muni and regional transit operations under this alternative would be significant and unavoidable.

Mitigation Measure

M-ALT-TR-1: Upgrade Transit-Only Lanes on Third Street. The SFMTA shall implement protected transit-only lanes on Third Street between Townsend and Market Streets to reduce the impacts of vehicle congestion on transit travel times. The protected transit-only lane would reduce inbound travel times on the 8AX/8BX Bayshore Expresses, 30 Stockton, and the 45 Union-Stockton routes.

Pedestrian and Bicycle Impacts

In terms of pedestrian and bicycle operations, the Land Use Plan Only Alternative would result in the same amount of travel by these modes in 2040 as under the Plan. The Land Use Plan Only Alternative would not implement the Plan's proposed street network changes, including widened sidewalks, new bicycle facilities, and new mid-block crosswalks. The Land Use Plan Only Alternative would result in a greater number of significant impacts at a number of crosswalk locations under existing plus Plan and under 2040 cumulative conditions. Implementation of **Mitigation Measure M-TR-4, Upgrade Central SoMa Area Crosswalks**, and **Mitigation Measure M-ALT-TR-2, Upgrade Additional Central SoMa Area Crosswalks**, could reduce pedestrian crosswalk impacts at some locations to less than significant. However, because the feasibility of the crosswalk widening beyond the current width is uncertain due to roadway or other physical constraints, the pedestrian impact at the crosswalks with development under the Land Use Plan Only Alternative would remain significant and unavoidable with mitigation. Under 2040 cumulative conditions, the Land Use Plan Only Alternative would contribute considerably to significant and unavoidable cumulative pedestrian impacts at a number of sidewalk and corner locations, because improvements beyond those proposed as part of the Plan's street network changes would not be likely or feasible without redesign of roadways that could remove bicycle, transit-only, or mixed-flow travel lanes.

The growth in bicycle travel would be similar under the Land Use Plan Only Alternative, compared to conditions with the Plan. As noted, this alternative would not implement the Plan's bicycle improvements, including new bicycle lanes and cycle tracks, which could reduce the degree to which the Land Use Plan Only Alternative would improve conditions for bicycling, compared to the Plan. It is not expected that the added bicycle trips associated with this alternative would result significant overcrowding of the bicycle facilities and result in hazardous conditions. It is possible that increased congestion associated with the land use growth under this alternative could result in an increased potential for vehicular-bicycle and pedestrian-bicycle conflicts at locations where bicycle lanes are not provided and at locations with existing high collision potential. Thus, for these reasons, the impacts of only development under the Land Use Plan Only Alternative on bicyclists would be significant.

Mitigation Measure

M-ALT-TR-2: Upgrade Additional Central SoMa Area Crosswalks. The SFMTA shall monitor crosswalk operations for deteriorated conditions (i.e., crosswalk operating conditions of LOS E or LOS F, or observations of substantial crosswalk overcrowding), and, as feasible, widen and restripe the crosswalks to the continental design, consistent with the *Better Streets Plan*, at the following locations:

- At the intersection of Fourth/Brannan widen the west crosswalk to 15 feet.
- At the intersection of Fourth/Townsend widen the west crosswalk to 30 feet.
- At the intersection of Fourth/King widen the west crosswalk to 41 feet.

Loading

Unlike the Plan, the Land Use Plan Only Alternative would avoid removal of about 60 existing on-street commercial loading spaces that are currently used by existing businesses, along with a number of on-street passenger loading/unloading zones, to implement the proposed street network changes, nor would other commercial loading spaces and passenger loading zones be unavailable during peak periods, as with the street network changes. The Land Use Plan Only Alternative would result in the same demand for off-street freight loading spaces, on-street commercial loading spaces, and passenger loading/ unloading zones as the Plan. To the extent that loading demand is not accommodated on-site, and could not be accommodated within existing or new on-street commercial loading spaces, double-parking, illegal use of sidewalks and other public space is likely to occur, and such activities could affect traffic and transit operations as well as bike and pedestrian circulation. Double parking could adversely affect local vehicular, transit, and bicycle circulation, particularly on streets with transit-only and bicycle lanes (e.g., Third, Mission, Howard, and Folsom Streets). Thus, this alternative would not avoid the Plan's significant impact related to loading under existing plus Plan conditions. **Mitigation Measure M-TR-6a, Driveway and Loading Operations Plan**, would manage loading access and loading activities for new development with more than 100,000 square feet of residential or commercial uses, in order to reduce conflicts between commercial loading activities and pedestrians, bicyclists, and vehicles on adjacent streets, and to maximize reliance of on-site loading spaces to accommodate new loading demand. Implementation of **Mitigation Measure M-TR-6a, Driveway and Loading Operations Plan**, would reduce loading impacts to less-than-significant. Therefore, the Land Use Plan Only Alternative's loading impacts of the Land Use Plan Only Alternative would be less than significant with mitigation. **Mitigation Measure M-TR-6b, Accommodation of On-street Commercial Loading Spaces and Passenger Loading/Unloading Zones**, would not be required because on-street loading spaces would not be removed.

Parking

Development in the Plan Area under the Land Use Plan Only Alternative would increase parking demand to the same degree as with the Plan, however, this alternative would not include the Plan's street network changes, which would result in permanent removal of about 200 on-street parking spaces on Harrison, Bryant, Brannan, Second, Third, Fourth, and Sixth Streets; and prohibit peak-period use of another approximately 400 on-street spaces. As under the Plan, under this alternative, there could be a shortfall in parking spaces provided relative to the projected demand associated with new development. Nevertheless, because parking impacts from the Plan would be less than significant, the Land Use Plan Only Alternative would also have a less-than-significant impact with respect to parking.

Emergency Vehicle Access

Similar to the Plan, development projects under the Land Use Plan Only Alternative would not introduce unusual design features, and the increases in vehicle, pedestrian and bicycle travel associated with new development projects under this alternative would not substantially affect emergency vehicle access. Furthermore, the Land Use Plan Only Alternative would not include the Plan's proposed street network changes that would result in fewer mixed-flow travel lanes on a number of streets, which, in combination with additional vehicle delay associated with additional vehicle trips generated by development under the Plan, could impede emergency vehicle access in the Plan Area during period of peak traffic volumes. Therefore, the Land Use Plan Only, which would not include any street network changes, would avoid the Plan's significant impact on emergency vehicle access, and **Mitigation Measure M-TR-8, Emergency Vehicle Access Consultation**, would not be required.

Construction Impacts

Construction activities associated with the Land Use Plan Only Alternative would be similar to those described for the Plan, although construction of the street network improvements would not occur under this alternative. As described for the Plan, under the Land Use Plan Only Alternative construction of several development projects could occur simultaneously in close proximity to each other, which could result potential disruption of traffic, transit, pedestrian, and bicycle circulation, and which would be considered significant construction-related transportation impacts. **Mitigation Measure M-TR-9, Construction Management Plan and Construction Coordination**, would still apply, and impacts would remain significant and unavoidable with mitigation, as for the Plan. As with the Plan, development under the Land Use Plan Only Alternative, in combination with construction of other projects outside of the Plan Area would not result in significant cumulative construction-related transportation impacts.

Noise and Vibration

Under the Land Use Plan Only Alternative, traffic generated noise under the Existing plus Plan conditions would be less than significant, and consequently, this alternative would avoid the Plan's significant and unavoidable traffic noise impact on Howard Street (west of 10th Street) under Existing plus Plan conditions for the Howard and Folsom Streets two-way option. Under the cumulative conditions with the Land Use Plan Only Alternative, there would be a significant cumulative increase in traffic noise on Fifth Street (between Bryant and Brannan Streets) that would not occur under the Plan; however, the Plan would not make a considerable contribution to this significant cumulative impact, and would therefore result in a less-than-significant cumulative impact. The Land Use Plan Only Alternative would avoid the significant cumulative traffic noise impacts that would occur with the Plan on Howard Street (west of Fifth Street)—including avoiding the Plan's considerable contribution to this significant cumulative impact on Howard Street west of Eleventh Street; and would avoid the significant cumulative traffic noise impacts on Fourth Street (between Bryant and Brannan Streets), Fifth Street (between Brannan and Townsend Streets), and on Bryant Street (east of Fourth Street).

As with the Plan, new noise-generating uses developed under the Land Use Plan Only Alternative would be subject to **Mitigation Measure M-NO-1b, Siting of Noise-Generating Uses**, which, along with compliance

with the *San Francisco Building Code*, *San Francisco Green Building Code*, and Regulation of Noise from Places of Entertainment, would reduce impacts on sensitive land uses to a less-than-significant level. New noise-sensitive land uses under this alternative would be required to comply with existing noise control standards and would not be significantly affected, as under the Plan.

Construction noise and construction vibration associated with the Land Use Plan Only Alternative would be similar in nature to that under the Plan and would be significant. **Mitigation Measures M-NO-2a, General Construction Noise Control Measures**, and **M-NO-2b, Noise and Vibration Control Measures during Pile Driving**, would be applicable this alternative, as would **Mitigation Measures M-CP-3a, Protect Historical Resources from Adjacent Construction Activities**, and **M-CP-3b, Construction Monitoring Program for Historical Resources**. However, if multiple projects were to be under construction simultaneously in close proximity to the same sensitive receptors, the combined effect of these construction noise impacts may result in noise levels for which the available, feasible measures identified in Mitigation Measure M-NO-2a would be insufficient to reduce the construction-related noise impacts to a less-than-significant level. Therefore, potential construction-related noise impacts on adjacent or nearby noise-sensitive receptors would be significant and unavoidable. For the same reasons as for the Plan, cumulative construction noise impacts would be less than significant.

Air Quality and Greenhouse Gas Emissions

While emissions of criteria air pollutants, GHGs, and traffic-generated TACs would be similar to those with the Plan, the Land Use Plan Only Alternative would reduce the increase in congestion along roadways in the Plan Area sufficient to reduce significant congestion-related emissions of the Plan to a less-than-significant level.

As with the Plan, VMT would increase by a lesser percentage (77 percent) than service population (155 percent) and so, at a plan level, the Land Use Plan Only Alternative would not result in significant criteria air pollutant impacts. However, as with the Plan, one or more subsequent individual development projects in the Plan Area could, if large enough, violate an air quality standard, contribute to an existing or projected air quality violation, and/or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard. Mitigation measures would also apply to the Land Use Plan Only Alternative in the form of a project-specific Transportation Demand Management Program (**Mitigation Measure M-NO-1a, Transportation Demand Management (TDM) for New Development Projects**), which would reduce vehicle trips generated by subsequent development projects and concomitantly reduce emissions of criteria air pollutants and vehicular toxic air contaminants. Other mitigation measures related to operational air quality that are applicable to the Plan would also be applicable to the Land Use Plan Only Alternative, including **Mitigation Measures M-AQ-3a, Education for Residential and Commercial Tenants Concerning Low-VOC Consumer Products**; **M-AQ-3b, Reduce Operational Emissions**; and **M-AQ-5a, Best Available Control Technology for Diesel Generators and Fire Pumps**. However, in the absence of certainty that mitigated emissions from every subsequent development project would be below the applicable significance thresholds, this would be a significant and unavoidable impact of the Land Use Plan Only Alternative.

Since the Land Use Plan Only Alternative does not include the Plan's street network changes, this alternative would not, however, reduce the amount of mixed-flow travel lanes and therefore would not have the potential

to result in increased vehicle congestion from reduced mixed-flow travel lanes, which was found to result in a significant and unavoidable impact with respect to the street network changes proposed under the Plan. Notwithstanding, the overall impact of the Land Use Plan Only on operational air criteria air pollutants would be significant and unavoidable as a result of subsequent development projects.

The proposed Plan's use districts and policy framework would be the same under the Land Use Plan Only Alternative as under the Plan. Moreover, as noted in Table IV.F-6, Consistency of the Plan with Transportation Control Measures of the 2010 Clean Air Plan, in Section IV.F, Air Quality, existing City programs are consistent with many of the 2010 *Clean Air Plan's* Transportation Control measures. As with the Plan, the Land Use Plan Only Alternative would support the *Clean Air Plan's* primary air quality, public health, and GHG reduction goals. Therefore, the Land Use Plan Only Alternative would not disrupt or hinder implementation of the *Clean Air Plan*.

Construction emissions of criteria pollutants from subsequent development projects would be marginally less under the Land Use Plan Only Alternative than under the Plan as the less than significant construction-related emissions from street network improvements would not occur. As with the Plan, construction emissions would be significant and mitigation (**Mitigation Measures M-AQ-4a, Construction Emissions Analysis**, and **M-AQ-4b, Construction Emissions Minimization Plan**), would reduce the impact to a less-than-significant level.

As with the Plan, subsequent development under the Land Use Plan Only Alternative could generate particulates and TACs that would worsen air quality and adversely affect sensitive receptors. However, while the reduced mixed-flow lanes of the Plan would increase congestion and thereby increase vehicle-generated TAC emissions, this Alternative would not include a reduction in mixed-flow travel lanes. Consequently, while increased congestion would still result from general population increase and this would still be a significant impact, the Land Use Plan Only Alternative would not have the potential to contribute to additional congestion as a result of less mixed-flow travel lanes.

Mitigation Measure M-NO-1a, Transportation Demand Management (TDM) for New Development Projects, in Section IV.E, Noise and Vibration, would reduce TACs from vehicle emissions by reducing vehicle trips. **Mitigation Measures M-AQ-3b, Reduce Operational Emissions; M-AQ-5a, Best Available Control Technology for Diesel Generators and Fire Pumps; M-AQ-5b, Siting of Uses that Emit Particulate Matter (PM_{2.5}), Diesel Particulate Matter, or Other Toxic Air Contaminants; and M-AQ-5c, Update Air Pollution Exposure Zone for San Francisco Health Code Article 38**, would reduce the severity of this impact, but not to a less-than-significant level. A significant and unavoidable impact from TACs generated by the Land Use Plan Only Alternative would result because the degree to which trips (and thereby traffic-generated emissions) could be reduced by Mitigation Measure M-NO-1a cannot be reliably estimated. Additionally, vehicle emissions are regulated at the State and federal level and local jurisdictions are preempted from imposing stricter emissions standards for vehicles, and no other feasible mitigations for mobile source emissions are available.

Construction-related emissions of particulates and TACs under the Land Use Plan Only Alternative would be marginally less than the Plan as the less-than-significant construction-related emissions from street network improvements would not occur, and these emissions would likewise be mitigated to a less-than-significant

level with implementation of **Mitigation Measure M-AQ-6a, Construction Emissions Minimization Plan,** and **M-AQ-6b, Implement Clean Construction Requirements.**

Impacts related to greenhouse gas emissions would be less than significant, as with the Plan, given that subsequent development projects would be required to comply with the City's Greenhouse Gas Reduction Strategy.

Hydrology and Water Quality (Sea Level Rise and Combined Sewer System)

Like the Plan, the Land Use Plan Only Alternative would not alter the northern shoreline of Mission Creek, which provides inundation pathways for flooding from future sea level rise; nor would it raise or lower the ground surface in a manner that would redirect flood flows. As with the Plan, development under the Land Use Plan Only Alternative could be affected by future sea level rise adjacent to the Plan Area. However, consistent with the California Supreme Court's decision in *California Building Industry Association v. Bay Area Air Quality Management District*, this would not be a significant effect under CEQA, because development pursuant to the Land Use Plan Only Alternative would not significantly exacerbate this existing environmental hazard. As under existing conditions, projects in areas that are currently prone to flooding from the combined sewer system during wet weather would be reviewed by the SFPUC during the project approval process and may require additional actions such as incorporation of a pump station for sewage flows, raised elevation of entryways, special sidewalk construction, and deep gutters. These measures would reduce the potential for localized flooding. Therefore, impacts of the Land Use Plan Only Alternative related to flooding would be less than significant, as under the Plan.

The Land Use Plan Only Alternative would result in a similar amount of development as the Plan; both wastewater generation and stormwater flows would be similar. As with the Plan, the reduction in stormwater flows due to required stormwater reduction measures is expected to offset estimated increases in wastewater flows during wet weather such that there would not be an increase in wet weather combined sewer discharges, and impacts related to an increase in combined sewer discharges under the Land Use Plan Only Alternative would be less than significant.

Issues Analyzed in the Initial Study

Impacts Related to the Intensity of Development

Given that the Land Use Plan Only Alternative would have the same number of households and residential population of the Plan, it is expected the demand for, and associated impacts related to, recreation and public space would be the same as the Plan. Similarly, given that the Land Use Plan Only Alternative would have the same number of households and commercial use intensity than the Plan, the overall demand for, and associated impacts to, utilities and service systems, and public services would be similar to those of the Plan; all these impacts would be less than significant, as with the Plan.

Impacts Related to Site-Specific Conditions

Impacts related to site-specific conditions, such as those related to biology, geology and soils, hydrology and water quality, and hazardous materials would be similar to those of the Plan because it can be assumed that

many, if not most, of the same sites would be affected by subsequent future development projects. It is not anticipated that foundation systems (and, therefore, ground-disturbing activities) would be substantially different than with development pursuant to Plan, because the Land Use Plan Only Alternative would allow the construction of high-rise buildings on the same sites. Therefore, impacts related to geology and soils would be the same as under the Plan. **Mitigation Measures M-BI-1, Pre-construction Bat Surveys, and M-HZ-3, Hazardous Building Materials Abatement** would be applicable, as with the Plan.

As with the Plan, this alternative would have less-than-significant impacts related to mineral and energy resources and no impacts on agricultural or forest resources, because these resources are not present within the Plan Area.

Project Objectives

The Land Use Plan Only Alternative would meet most of the eight project objectives of the Plan because it would allow for development on the same sites and at the same height and density as the Plan, and overall projected residential and employment growth under this alternative would be the same as the under the Plan. However, since the Land Use Plan Only Alternative would not provide the street network changes proposed under the Plan, the street network under this alternative would not as effectively prioritize walking, bicycling and transit to the same extent as the Plan, and therefore, would not meet Objective 4.

VI.G Environmentally Superior Alternative

Section 15126.6(e)(2) of the CEQA Guidelines requires the identification of an environmentally superior alternative to the proposed project. If the environmentally superior alternative is the “no project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

Generally speaking, the differences in impacts between the alternatives and the Plan are because the alternatives would result in less total development potential than under the Plan (as is the case for Alternatives 1 through 4) or because the alternatives do not include the proposed street network changes (as is the case for Alternatives 1 and 5).

The No Project Alternative would result in less new construction and new development than the Plan or the other alternatives. Consequently, the No Project Alternative’s impacts related to construction and operation of new developments would also be less than the Plan or the other alternatives. The No Project Alternative would avoid seven of the significant and unavoidable Plan and/or cumulative impacts: Impact C-LU-1 (cumulative conflicts with *General Plan* policy regarding traffic noise); Impact TR-6 and Impact C-TR-6 (Plan and cumulative impacts to commercial and passenger loading/unloading); Impact TR-9 (Plan construction-related transportation impacts); Impact NO-1 (Plan operational traffic noise), Impact NO-2 (Plan construction noise) and Impact WI-1 (Plan wind impact). The No Project Alternative would also avoid the need to mitigate Impact TR-8 and Impact C-TR-8 (Plan and cumulative impacts to emergency vehicle access). This alternative would, however, introduce a new significant and unavoidable impact to pedestrian capacity (Impact TR-4) that would not occur under the Plan.

As discussed under Section VI.B, above, the No Project Alternative would not meet most of the basic project objectives. Furthermore, per CEQA Guidelines Section 15126.6(e)(2), if the environmentally superior

alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

Of the remaining four alternatives (Reduced Heights Alternative, Modified TODCO Plan, Land Use Variant, and Land Use Plan Only Alternative), the Land Use Plan Only Alternative is considered the environmentally superior alternative. The Land Use Plan Only Alternative would result in a similar amount of new construction and new development compared to the Plan. By not implementing the street network improvements proposed by the Plan, however, this alternative would avoid a number of associated significant secondary effects related to traffic noise, on-street loading, and emergency vehicle access. Specifically, the Land Use Plan Only Alternative would avoid eight of the significant and unavoidable Plan and/or cumulative impacts: Impact LU-2 and Impact C-LU-1 (Plan and cumulative conflicts with *General Plan* policy regarding traffic noise); Impact NO-1 and Impact C-NO-1 (Plan and cumulative operational traffic noise); Impact TR-6 and Impact C-TR-6 (Plan and cumulative reduction in on-street loading supply); and Impact TR-8 and Impact C-TR-8 (Plan and cumulative impacts to emergency vehicle access). The absence of the Plan's street network improvements under this alternative could result in incrementally higher VMT than the Plan, and incrementally greater potential for traffic/bicycle/pedestrian conflicts compared to the Plan. Such effects would, however, continue to be less than significant, as under the Plan. The Land Use Plan Only Alternative would result in other significant effects related to transit and pedestrians. These significant effects would require implementation of mitigation measures M-ALT-TR-1, Upgrade Transit-Only Lanes on Third Street, and M-ALT-TR-2, Upgrade Additional Central SoMa Area Crosswalks.

As with the No Project Alternative, the Reduced Heights Alternative, the Modified TODCO Plan, and the Land Use Variant all would, in varying degrees, result in lower development intensity than the Plan. As such, many of the construction and operational effects of these alternatives would be less than the Plan. However, the Reduced Heights Alternative, the Modified TODCO Plan, and the Land Use Variant would not avoid any of the significant and unavoidable environmental effects associated with the Plan. With all of these lower development intensity alternatives, to the extent that the demand for additional developed space would be met elsewhere in the Bay Area, employees in and residents of such development could potentially generate substantially greater impacts on transportation systems (including vehicle miles traveled), air quality, and greenhouse gases than would be the case for development in the more compact and better-served-by-transit Plan Area. This would be particularly likely for development in more outlying parts of the region where fewer services and less transit access is provided. While it would be speculative to attempt to quantify or specify the location where such development would occur and the subsequent impacts thereof, it is acknowledged that these lower intensity alternatives would incrementally reduce local impacts in the Plan Area and in San Francisco, while potentially increasing regional emissions of criteria air pollutants and greenhouse gases, as well as regional traffic congestion. They could also incrementally increase impacts related to "greenfield" development on previously undeveloped locations in the Bay Area and, possibly, beyond.

VI.H Alternatives Considered but Rejected

As discussed under Section IV.D, Transportation and Circulation, the TODCO Group submitted its TODCO Plan to the City for consideration in October 2016 after the draft Central SoMa Plan was revised in August 2016. All aspects of the October 2016 TODCO Plan were included and analyzed as the "Modified TODCO Plan" in this Alternatives Chapter, with the exception of the TODCO Plan's proposed height limits. The

October 2016 TODCO Plan proposed changes in height limits at certain major development sites within the Central SoMa Plan Area that would be greater than that proposed for those same sites in the Central SoMa Plan. Specifically, under the TODCO Plan, the proposed 250-foot height limits at the Academy of Art Student Housing site and the Fourth and Harrison Streets site would be greater than the height limit for those sites proposed under the Central SoMa Plan (160 feet, and 240 feet, respectively). In addition, at the Second and Harrison Street site, the proposed height limits of 400 feet under the TODCO Plan would be greater than the 350-foot height limit for that site proposed under the Central SoMa Plan.

Given that the TODCO Plan proposes higher height limits on two parcels on Harrison Street as compared to the Plan, shadow effects on Yerba Buena Gardens, Alice Street Community Gardens, Jessie Square, Yerba Buena Lane, and Mint Plaza may be greater than under the Plan. These higher heights could also result in greater pedestrian-level winds. Overall, the Modified TODCO Plan's higher height limits on certain parcels could result in greater wind and shadow impacts than the Plan, the No Project Alternative, or the Reduced Heights Alternative. For this reason, the TODCO Plan was rejected from further analysis in this EIR.

However, a modified version of the TODCO Plan is analyzed in Section IV.D in this EIR, as Alternative 3: Modified TODCO Plan. Under the Modified TODCO Plan, there would be no height limit increases for any new development above the height limits proposed under the Central SoMa Plan.

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CHAPTER VII

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