

CHAPTER 4

Environmental Setting, Impacts, and Mitigation Measures

Overview

This chapter provides an impact analysis of the physical environmental effects of implementing each of the three components of the Proposed Project described in Chapter 2, Project Description: the *Western SoMa Community Plan* (Draft Plan), Rezoning of Adjacent Parcels, and 350 Eighth Street project. This chapter describes the environmental and regulatory settings, assesses impacts, and identifies feasible mitigation measures to avoid or substantially reduce impacts that have been determined to be significant.

As noted in Chapter 1, Introduction, this EIR evaluates the maximum environmental impact that could result from the implementation of all components of the Proposed Project and identifies each component's contribution to the total impact.

Scope of Analysis

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

Chapter 4 Sections

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

Each section of Chapter 4 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 Project Area with respect to each resource topic as of August 2009, which is the date the Lead Agency issued the NOP for the Proposed Project. The environmental

setting constitutes the baseline physical conditions by which the Lead Agency will determine whether an impact is significant.

- **Regulatory Setting.** This subsection describes the relevant laws and regulations that apply to the environmental resources within the Project Area and the governmental agencies responsible for enforcing those laws and regulations.
- **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” explains how the significance criteria are applied in evaluating the impacts of the Proposed Project. 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 for all of 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....” The San Francisco Planning Department and Archstone, as sponsors of their respective components of the Proposed Project, have indicated that, if any of the individual components is approved, then all mitigation measures identified in this EIR would be implemented. In addition, Improvement Measures are also identified for impacts that would be less than significant but could nevertheless be reduced with implementation of such measures.

Cumulative impacts are discussed following the description of direct and indirect Proposed Project-specific impacts and identified mitigation measures. The Cumulative impacts analysis considers the incremental effects of the Proposed Project together with the environmental effects of other closely-related past, present, and reasonably foreseeable probable future projects proposed by San Francisco 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 Proposed 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 environmental impacts of a project. 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 4 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 Project Area or the area of potential effects. For example, because the Project 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 Project Area to excessive noise levels within the vicinity of a private airstrip. These impacts are discussed and “screened out” in the Approach to Analysis section of each environmental topic.

- **Less-than-Significant Impact.** This determination applies if there is potential for some limited impact, 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 the Proposed Project 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 the Proposed Project 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. There might be some mitigation available to lessen the impact, but the residual effect after implementation of the measure(s) would remain significant, and therefore the impact would be unavoidable.

Analysis Assumptions

Western SoMa Community Plan and Rezoning of Adjacent Parcels

This EIR analyzes the potential environmental effects of the *Western SoMa Community Plan* and the Rezoning of Adjacent Parcels. The analysis of physical impacts is based upon growth projections developed by the San Francisco Planning Department in support of the Draft Plan. The resulting conclusions inform the qualitative analysis of changing neighborhoods, while the quantitative analysis of, for example, changes in traffic patterns and transit ridership, is based on projected growth in population and employment.

Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would, in and of itself, result in new development; instead, these components of the Proposed Project would establish zoning controls (including new height and bulk controls) and, in the case of the Draft Plan, land use policies as well as design guidelines, that would encourage and create incentives for new development within the Draft Plan Area and on the Adjacent Parcels. Future changes in land uses would, thus, not be caused by Draft Plan policies or zoning, but by specific development projects that could occur on individual sites within the Draft Plan Area and the Adjacent Parcels. In parts of the Draft Plan Area where the rezoning that would implement the Draft Plan would allow for changes to permitted heights, gradual development is likely to occur, as the incentive for development would be greater due to the additional permitted heights. (The Rezoning of Adjacent Parcels would not alter existing height limits.)

As described more fully in Section 4.C, Population and Housing, and summarized in **Table 4-1**, the total population and employment growth assumed in the Project Area between 2008 (the base year for the analysis) and 2030 (buildout year) amounts to approximately 2,770 additional households, approximately 6,340 additional residents and about 6,350 additional jobs. It is noted that development and growth in the Draft Plan Area and on the Adjacent Parcels would be expected to occur within the Project Area even without implementation of the Draft Plan or the Rezoning of Adjacent Parcels. In many cases, existing development is not as intense as the current zoning permits and/or tall as the current building height limits allow, and those parcels could be developed regardless of future changes in land use policies and zoning controls.

TABLE 4-1
SUMMARY OF BASELINE (2008) AND 2030 ASSUMPTIONS FOR THE PROJECT AREA

	Baseline (2008)	Proposed Project (2030)
Housing Units	3,364	6,247
Change from Existing	---	+2,883
Households	3,176	5,944
Change from Existing	---	+2,767
Household Population	7,000	13,336
Change from Existing	---	+6,336
Employment (Jobs)	17,655	24,009
Change from Existing	---	+6,354

SOURCE: San Francisco Planning Department, 2012.

Transportation and the Street Network

As discussed in Chapter 2, Project Description, the Draft Plan contains a number of goals with respect to transportation and circulation (see **Figure 2-3** on p. 2-12). Specific changes that have been identified by the San Francisco Planning Department at this time are summarized below (for full text, see Chapter 2). As discussed in Chapter 2, some are analyzed on a project-specific level, while others have not been finalized and, thus, are analyzed programmatically in this EIR.

Project-Level Analysis

1. Posting of “truck route” signs on Ninth, 10th, Harrison, and Bryant Streets in the Draft Plan Area.
2. Installation of new signalized mid-block pedestrian crossings on Folsom Street.
3. Installation of new signalized mid-block pedestrian crossings on Minna and Natoma Streets.
4. Installation of streetscape and traffic calming improvements on Minna, Natoma, and Ringold Streets.

Program-Level Analysis

5. Installation of sidewalk extensions/bulb-outs on Folsom Street.
6. Installation of gateway treatments at and in vicinity of freeway off-ramps.
7. Installation of public realm greening and pedestrian enhancements along Folsom Street and 12th Street.

To the degree that these transportation and street network improvements would result in physical impacts to the environment, these are analyzed in the respective sections of this chapter. Specifically, Section 4.D, Cultural and Paleontological Resources, Section 4.E, Transportation and Circulation, and Section 4.G, Air Quality, address programmatic and project-specific impacts that could result from implementation of these improvements. However, these improvements would not be expected to result

in any other impacts to the environment. For instance, they would have no impacts on land uses in the Project Area, nor would they be expected to alter views or visual character of the Project Area (the public realm greening and pedestrian enhancements may be perceived as a benefit by some, but it is clear that they would have no adverse impacts with respect to aesthetics). The transportation improvements would be of too limited scope to result in any substantial effects related to greenhouse gas emissions. They would have no impacts on population and housing in the Project Area or impact the provision of public services or utilities or recreational facilities. To the extent that installation of these improvements would have any impacts related to noise, such impacts would fall under typical construction that is anticipated in the Project Area and are addressed as part of the overall analysis of the implementation of the Draft Plan and Rezoning of Adjacent Parcels; moreover, any noise impacts would be of relatively short duration and would not be substantial (the exception to this is noise related to truck volume increases that would result from implementation of improvement #1, and these are discussed in the Section 4.F, Noise and Vibration). Furthermore, because of the relatively limited scope of these improvements, they would also not have any substantial impacts on biological resources, geology and soils, hydrology, hazards, and mineral and energy resources, and would have no effects with respect to wind and shadow, or agricultural and forest resources. For the reasons stated above, they are not discussed further in Chapter 4, except in the sections noted (Section 4.D, Cultural and Paleontological Resources, Section 4.E, Transportation and Circulation, and Section 4.G, Air Quality).

350 Eighth Street Project

Analysis assumptions applied to the 350 Eighth Street project are discussed in Chapter 2, Project Description, p. 2-22 through 2-31. Specifically, the 350 Eighth Street project site would be developed with approximately 444 dwelling units, approximately 33,650 square feet of commercial space, approximately 8,150 square feet of loft-style space suitable for light industrial use and artists' studios, approximately 1,350 square feet of community space and approximately 26,800 square feet of publicly accessible open space in addition to about 13,150 square feet of private open space. The impact analyses focus on physical changes that would occur to the 350 Eighth Street project site as a result of the implementation of the 350 Eighth Street project.

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.

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

Approach to Cumulative Impact Analysis

Two approaches to a cumulative impact analysis are provided 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 4.A, Aesthetics, considers several large individual projects that are anticipated in the Project Area and may alter the visual character and views in and surrounding the Project Area, while at the same time making assumptions regarding other development patterns that are likely to occur as part of normal long-range growth. By comparison, Section 4.E, Transportation and Circulation, relies on a citywide growth projection model that encompasses many individual projects anticipated in and surrounding the Project Area, which is the typical methodology the San Francisco Planning Department applies to analysis of transportation impacts. The projections model includes the individual projects described below and applies a quantitative growth factor to account for other growth that may occur in the area.

The following factors were used to determine an appropriate list of individual projects to be considered in this 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 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, the following “large-scale” individual projects in and near the Project Area are considered in the cumulative impact analysis:

- **Central Corridor Plan.** The San Francisco Planning Department is in the process of developing an integrated community vision for the southern portion of the Central Subway rail corridor. This area is located generally between Townsend and Market Streets along Fourth Street, between Second and Sixth Streets. The plan’s goal is to integrate transportation and land uses by implementing changes to the allowed land uses and building heights. The plan also includes a strategy for improving the pedestrian experience in this area. These changes will be based on a synthesis of community input, past and current land use efforts, and analysis of long-range regional, citywide, and neighborhood needs. This plan is funded by a Transportation Planning Grant from Caltrans. An application has been filed for this project for conducting environmental review (Case No. 2011.1356E).
- **5M Project.** The “5M” project would renovate the existing San Francisco Chronicle building at Fifth and Mission Streets and would construct additional space in several mid- and high-rise buildings elsewhere on the same city block. For purposes of analysis of quantitative impacts such as traffic, this project was assumed to encompass 1.1 million square feet of office space, 200,000 square feet of retail and restaurant space, and 800 residential units. The San Francisco Planning Department has completed a preliminary project assessment for this project, and an environmental review application (Case No. 2011.0409E) has been filed with the department.
- **Moscone East.** The Moscone East project is the potential expansion of Moscone Convention Center, including a new hotel and office space, at the northeast corner of Third and Folsom Streets. For purposes of the cumulative analysis of quantitative impacts such as traffic, this project is assumed to include 750,000 square feet of office space, 900 residential units, 500 hotel rooms, and 425,000 square feet of institutional (convention center) space.¹ No application has been filed for this project.
- **801 Brannan Street/One Henry Adams Street Project:** This project would demolish the Concourse Exhibition Center at 801 Brannan Street and three buildings at One Henry Adams Street and would construct a total of five buildings containing approximately 825 dwelling units, about 50,000 square feet of ground-floor retail space, and about 800 parking spaces, including 166 spaces that would be provided to replace existing parking that would be eliminated by the development. The Brannan Street portion of this project site is adjacent to the Draft Plan Area. This project (Case No. 2000.618E) is currently undergoing environmental review.

¹ Since the conceptual program for this project was defined for purposes of the transportation analysis, a project has been commenced to renovate and expand a vacant office building at 680 Folsom Street, at Hawthorne Street, to accommodate approximately 500,000 square feet of office space. It is assumed that the remainder of the Moscone East project as set forth here could still be undertaken in the future.

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4.A. Land Use

This section describes existing land use pattern in the Project Area, including the general mix of residential, commercial, and other uses. The impact discussion analyzes the land use changes that would occur with implementation of the Proposed Project, including compatibility with existing uses and effects on existing land use character.

Environmental Setting

Western SoMa Community Plan Area and Adjacent Parcels

The character of the *Western SoMa Community Plan* (Draft Plan) Area is reflected in the heights, densities, and styles of its existing mix of land uses, which include residential uses (single- and multi-family buildings, live/work lofts, and single-room-occupancy [SRO] residential developments), commercial uses (primarily office and retail), and light industrial and art-related uses. **Figure 4.A-1**, on p. 4.A-2, shows existing land uses in the Draft Plan Area as well as on the Adjacent Parcels, which are discussed below. For purposes of the analysis below, the existing community consists of the current blend of residential, commercial, light industrial and other uses that comprise the existing Project Area neighborhood.

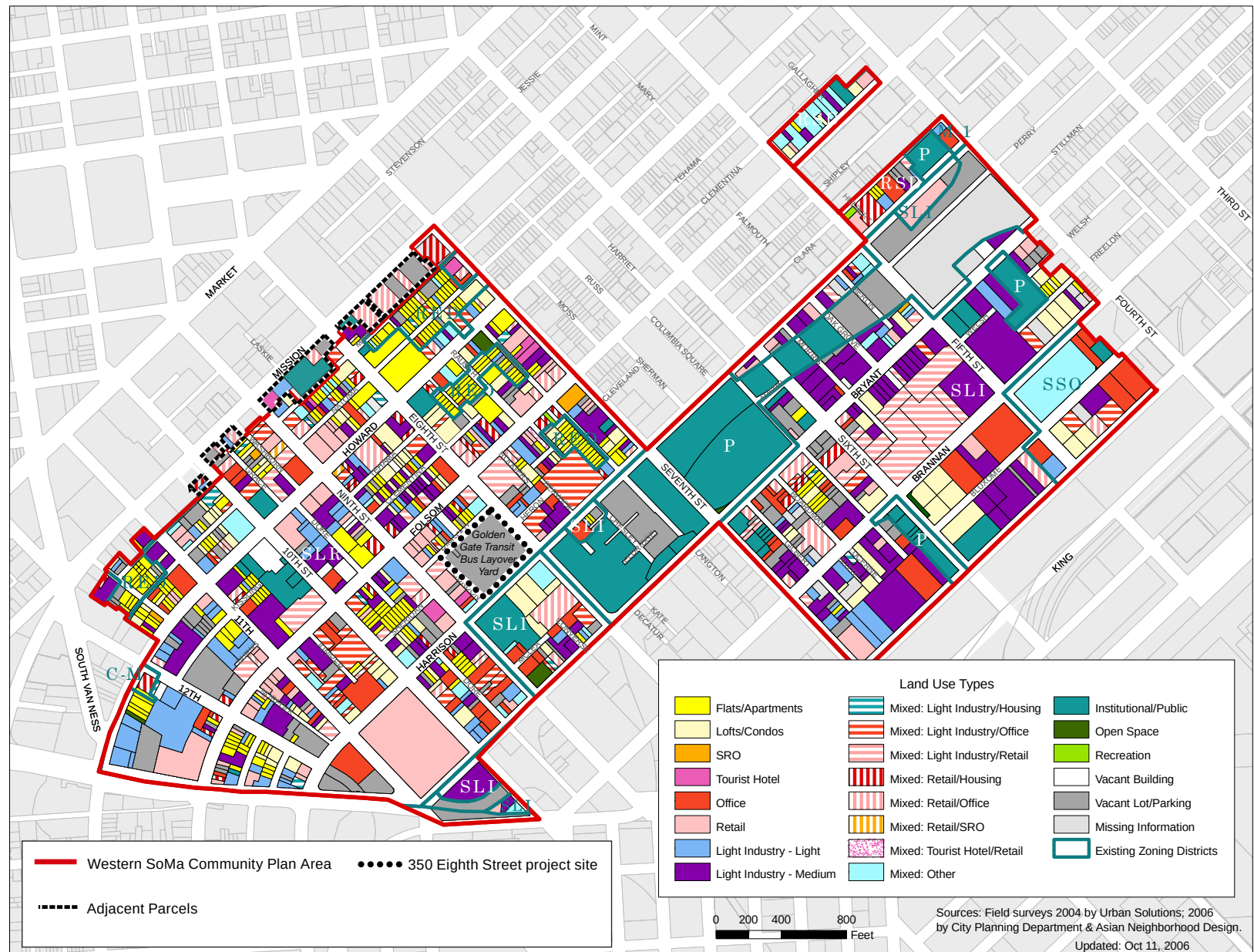
The scale and character of the existing residential neighborhoods throughout the Draft Plan Area is highlighted by an alley system that serves to break up the otherwise very large block pattern that exists in South of Market (SoMa) neighborhoods. The pattern of these smaller residential enclaves along the alleys has been a central factor in the development of the Draft Plan Area. Commercial uses in the Draft Plan Area include warehouses, automobile services and garages, entertainment uses, and more recently high-tech/multi-media arts businesses. By and large, existing businesses are small, employing on average fewer than 10 people and occupying less than 5,000 square feet per company.

Public uses within the Draft Plan Area include the San Francisco Police Department Headquarters/Hall of Justice at 850 Bryant Street, the Howard-Langton Mini Park on the corner of Howard and Langton Streets, and the San Francisco Fire Department's Station 8 on Bluxome Street, between Fourth and Fifth Streets.

The center of the Draft Plan Area includes the elevated I-80 highway. Within the Draft Plan Area, I-80 is located between Harrison and Bryant Streets, from Fourth Street to Eighth Street. I-80 bends southward and departs from the Draft Plan Area near the intersection of Bryant and Eighth Streets.

The Adjacent Parcels consist of 46 mostly regular-shaped lots located on the south side of Mission Street, between Seventh and 11th Streets, and include buildings ranging in sizes from one to four stories. Land uses on the Adjacent Parcels include a mix of retail and office uses, light industrial uses, a hotel, and institutional/public uses (the San Francisco Department of Human Services). The Adjacent Parcels also contain several vacant lots and surface parking lots (see Figure 4.A-1 on p. 4.A-2).

Additional description of the character, streetscape pattern, and built environment is included in Section 4.B, Aesthetics.



SOURCE: Western SoMa Citizens Planning Task Force
and Asian Neighborhood Design

2008.0877E and 2007.1035E: Western SoMa Community Plan,
Rezoning of Adjacent Parcels, and 350 Eighth Street Project

Figure 4.A-1
Existing Land Uses

350 Eighth Street Project Site

The 350 Eighth Street project site is approximately 146,300 square feet (3.3 acres) in size and is currently used by the Golden Gate Bridge, Highway, and Transportation District as a bus parking and inspection yard (see Figure 4.A-1 on p. 4.A-2). It is occupied by a large paved lot and three small, single-story industrial sheds ranging in size from 1,322 square feet to 11,050 square feet. The sheds, which have a combined footprint of 22,390 square feet, are used as administration and maintenance structures and are surrounded by hardscape areas and utilities.

Regulatory Setting

See Chapter 3, Plans and Policies, for information regarding current zoning and existing height and bulk classifications in the Draft Plan Area, on the Adjacent Parcels, and on the 350 Eighth Street project site.

Impacts and Mitigation Measures

Significance Criteria

For purposes of this EIR, the Proposed Project would result in a significant impact with respect to land use if it would:

- Physically divide an established community;
- Have a substantial impact on the existing character of the vicinity; 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.

Regarding the last significance criterion, the Proposed Project's consistency with applicable land use plans, policies, and regulations is discussed in Chapter 3, Plans and Policies, of this EIR. To the extent that the Draft Plan, proposed Rezoning of Adjacent Parcels, or 350 Eighth Street project would result in physical environmental effects that implicate potential policy inconsistency, those effects are analyzed in the applicable topic section of this Chapter 4. It is noted that a proposed project's inconsistency with a plan that is applicable to the project is a legal finding that 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 a significant adverse effect. However, the determination of a significant impact—which, by definition, must involve a physical change—is separate from the legal determination of plan consistency.

Approach to Analysis

Proposed Project impacts related to land use were evaluated by considering the compatibility of proposed land uses with existing land uses adjacent to and in proximity to the Draft Plan Area, Adjacent Parcels, and the 350 Eighth Street project site.

It is noted that transportation and street network improvements that would be implemented as part of the Draft Plan would not have any impacts on land use, as they would not physically divide an

established community, have a substantial impact on the existing character of the vicinity, or conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. For this reason, these impacts are not discussed any further in this section.

Impacts of the Western SoMa Community Plan and Rezoning of Adjacent Parcels (Program-Level Analysis)

Impact LU-1: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would divide an established community. (Less than Significant)

The Draft Plan and the Rezoning of Adjacent Parcels are regulatory programs, not physical development projects. The proposed rezoning within the Draft Plan Area and on the Adjacent Parcels would not create any new physical barriers within the Project Area. There are no major planned roadways, such as freeways, that would divide the Project Area or isolate individual neighborhoods within it. Consequently, no direct impact related to the division of an established community would result from the approval of either of these components of the Proposed Project.

The Draft Plan could create incentives for new development within the Draft Plan Area; however, any future projects created by such incentives would not be expected to divide an established community. Specifically, the Draft Plan would largely continue the residential land use pattern north of Harrison Street. Existing Residential Enclave Districts (REDs) would be expanded into areas where residential uses are already located. New REDs would be similarly located along alleys and other minor streets with low traffic volumes, which also include existing residential uses. New RED Mixed areas would provide residential as well as neighborhood-serving retail uses primarily adjacent to the Ninth, 10th, and Folsom Street corridors, primarily in areas where such uses already exist. The Draft Plan would concentrate more intensive commercial, office, and other non-residential uses along these three streets, thereby limiting disruption of both existing and proposed residential areas. South of Harrison Street, the existing land use pattern is primarily non-residential. Under the Draft Plan, new residential development would be limited to four small clusters in or near areas where residential uses already exist. The Draft Plan would slightly expand residential uses within these clusters and protect them from possible future encroachment of other uses, and would not divide any established community.

Although over time, changes to the overall character of the Draft Plan Area may become noticeable, they would not be considered drastic or adverse, as many of the uses that currently exist in the Draft Plan Area would continue to be permitted, although some uses, such as residential or large-scale commercial, would be permitted only within certain areas. Nevertheless, this would not be expected to divide the established community within the Draft Plan Area. For these reasons, the Draft Plan's impact related to the division of an established community would be less than significant.

Approval of Rezoning of Adjacent Parcels would reconcile the zoning of these parcels with the existing and allowable uses of neighboring properties and the zoning of parcels on the opposite sides of the street. The Rezoning of Adjacent Parcels would promote uses on these parcels that would be more compatible with other uses in this area and would not amend existing height and bulk limits or introduce or encourage the

development of major thoroughfares or other physical divisions. As a result, this action would not directly or indirectly divide an established community.

Because the Draft Plan and Rezoning of Adjacent Parcels would not physically divide an established community, direct and indirect impacts associated with this criterion would be less than significant.

Mitigation: None required.

Impact LU-2: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would have a substantial impact on the existing character of the vicinity. (Less than Significant)

Approval of the Draft Plan and/or the Rezoning of Adjacent Parcels would not have a direct effect on the existing character of the vicinity. However, their approval indirectly could affect the vicinity's existing character if individual projects implement the proposed land use policies and controls, as well as urban design guidelines,¹ in a way that could result in a change from the existing heights, densities, styles, scale, and other factors that make up the existing character of the Project Area. The following impact discussion evaluates program-level effects, including changes in land use character and disruption of established land use patterns.

Draft Plan

The Draft Plan recognizes the need to protect the existing residential enclaves that break up the otherwise large SoMa blocks, while identifying appropriate parcels where new residential uses could be introduced without disrupting the existing neighborhood pattern. This idea is further emphasized in the following Draft Plan statement: "if new housing is to be built, then build it as an integral part of the existing neighborhoods."² The Draft Plan would encourage new housing within the existing residential enclaves, without the need to build new neighborhoods, through proposed zoning controls. One of the major goals of the Draft Plan is to create "complete neighborhoods" that maintain residential uses in appropriate areas with a proximate mix of neighborhood services.

By amending the existing zoning controls, the Draft Plan would maintain the existing mixed-use character of the Project Area as a whole while emphasizing particular uses in certain parts of the Draft Plan Area. Development goals for areas north of Harrison Street call for an increasingly residential neighborhood of smaller scale within the existing REDs and an expansion of mixed-use development through creation of RED Mixed areas where some residential uses already exist. The Draft Plan would expand all of the existing residential enclave zones, which currently exist north of Harrison Street between Seventh and Eighth Streets and near the corner of Mission and Eleventh Streets, and by creating new residential enclaves in other locations where housing currently exists.

¹ This would apply specifically to the Draft Plan Area and includes policies concerning design that are part of the Draft Plan as well as the *Design Standards for Western SoMa Special Use District*, which would be adopted at the same time as the Draft Plan.

² Draft Plan, p. 3:2.

Folsom Street between Seventh and 10th Streets is proposed as a primary neighborhood-serving retail use corridor with increased allowable heights that would allow for an increased residential density. Large formula retail uses north of Harrison Street would be restricted to sites of one acre or more. The existing Formula Retail Controls and Policies currently used by the City for Western SoMa (i.e., Formula Retail permitted only with CU authorization) would be retained and incorporated into the proposed zoning controls of the Draft Plan.

South of Harrison Street, new residential uses only would be allowed within newly designated REDs along Dore Street south of Harrison Street, along Freelon Street west of Fourth Street, and in new RED MX Districts both north and south of Brannan Street between Sixth and Seventh Streets. In each case, these newly-created districts would be comprised largely of parcels that contain existing residential uses. The existing land use pattern south of Harrison Street, which includes PDR, light industrial and some tech-oriented office uses, as well as local- and region-serving retail and other commercial uses, would be largely retained under the Draft Plan.

Larger parcels south of Harrison Street are designated in the Draft Plan primarily for technology-based office uses and large-scale (over 25,000-square-foot) retail developments. The Draft Plan is designed to foster opportunities for creative and high-tech job growth in the south of Harrison portion of the Draft Plan Area. Employment-generating uses would not have to compete with prospective residential development, as housing would be prohibited outside of a limited number of REDs. The Draft Plan focuses on strengthening high-tech businesses by designating the lots along the north side of Townsend Street as a mid-rise business corridor that would promote high-tech and digital-media uses in office settings.

Both north and south of Harrison Street, the Draft Plan seeks to protect existing and newly designated residential clusters through zoning controls and to discourage housing production that is out of scale or character with the existing neighborhood pattern. The existing rear and front yard pattern would be preserved and continued in new residential areas. Upper-floor residential uses on major streets north of Harrison Street would be promoted. Western SoMa's distinctive alleys would be preserved and enhanced through the codification of the *Design Standards for Western SoMa Special Use District*. A mix of affordability levels would be encouraged in new residential development projects.

Retail uses would be permitted up to 10,000 square feet and allowed with CU authorization between 10,001 to 25,000 square feet, throughout the Draft Plan Area. Non-office commercial development over 25,000 square feet would not be permitted by the Draft Plan, while office use would be permitted up to 50,000 square feet in the W-MUO District on Townsend Street. Office regulations would be relaxed, however, to allow small general office uses in certain areas. Generally, the businesses north of Harrison Street would be of smaller scale than those south of Harrison Street and would be predominantly neighborhood-serving commercial uses.

Throughout the entire Draft Plan Area, the Draft Plan aims to "encourage preservation of existing and visibly appropriate new land uses in locations that provide the greatest opportunities for success and minimize conflict with residential uses" (Objectives 1.2) and would "Preserve and enhance compatibility of existing land uses south of Harrison Street" (Policy 1.2.3.).

New residential development would be anticipated in certain areas under the Draft Plan, based on where proposed zoning changes would allow it to occur, and/or encourage it where it is currently discouraged or, in some cases, not allowed (e.g., in the existing SLI District south of Harrison Streets, which currently prohibits new market-rate housing; as stated above, under the Draft Plan, three new residential enclaves are proposed in this area). Furthermore, the Draft Plan would guide more intensive residential development to locations where conditions are amenable to such uses, such as areas near retail stores and personal services. Additional population accommodated by new housing could increase demand for additional, local-serving retail and personal services, which could contribute to a stronger and more vibrant neighborhood commercial character. New height limits also would be expected to encourage commercial and ground-level retail development, as most height limits outside of residential enclaves would increase.

● As discussed in Section 4.F, Noise and Vibration, the Draft Plan Area contains existing entertainment venues (some with extended hours) along Folsom, 11th and other larger streets throughout the area and contains existing residential uses proximate to some of those venues. The presence of noise-generating uses near noise-sensitive uses at times leads to land use conflicts. Secondary (physical) impacts that may result from the proposed land use changes are covered in greater detail in other sections of the Draft EIR (including Section 4.B, Aesthetics, Section 4.E, Transportation and Circulation and Section 4.F, Noise and Vibration). However, it is noted that the Draft Plan seeks to minimize the potential for such inconsistencies by channeling various land uses to specific areas. For example, the Draft Plan would encourage residential uses north of Harrison Street and would generally limit residential uses south of Harrison Street. In addition, 200-foot buffers would be placed around RED and RED MX districts south of Harrison Street where no nighttime entertainment or 24-hour kennels would be permitted. Therefore, some land use inconsistencies, in terms of noise, would likely continue and have the potential to increase under the Draft Plan, as proposed. However, the Draft Plan intends to reduce them by directing new nighttime entertainment uses south of Harrison Street (to the SALI district).

While the expected land use changes may alter the existing character of discrete portions of the Draft Plan Area, the changes would not be detrimental or adverse. In many instances, the Draft Plan could serve to enhance the pedestrian realm and the overall character of the neighborhood, by attracting services and directing public improvements to address existing deficiencies as well as new neighborhood needs. Changes in the land use pattern would generally occur incrementally over the approximate 20-year timeframe of the Draft Plan through 2030. The overall pattern of anticipated new development would be similar to existing conditions even with the increases in density and height proposed under the Draft Plan. The changes in the land use character in the Project Area would not be considered an adverse physical impact.

Based on the discussion above, the implementation of the Draft Plan would not result in substantial changes to the existing neighborhood fabric, or character, of the Draft Plan Area and so would cause a less than significant impact related to the second significance criterion.

Adjacent Parcels

The intent of the Rezoning of Adjacent Parcels is to reconcile the use districts of these parcels with neighboring properties and with the zoning of opposing block façades. No changes to the existing height and bulk districts are proposed on the Adjacent Parcels. Most of the Adjacent Parcels (including all parcels

on Mission Street between Seventh and Ninth Streets) are currently zoned as Service/Light Industrial/Residential (SLR). These existing SLR parcels would be rezoned as Eastern Neighborhoods Mixed Use Office (MUO), which would encourage office uses and housing, and would permit small-scale light industrial and arts activities, with nighttime entertainment permitted with CU authorization. The new MUO-designated parcels would be generally consistent with the adjacent mixed-use and residential nature of the Draft Plan areas that border the proposed MUO parcels on the south.

The remaining Adjacent Parcels (between Ninth and 11th Streets) are zoned as Heavy Commercial (C-M) and would be rezoned as General Commercial (C-3-G). The C-3-G district allows a variety of uses, including retail, offices, hotels, entertainment, clubs and institutions, and high-density residential. This rezoning would be consistent with parcels on the north side of Mission Street as well as parcels on the south side of Mission Street west of 10th Street, all of which are currently zoned C-3-G.

Conclusion

In general, it is anticipated that future development under the Draft Plan and Rezoning of Adjacent Parcels would result in more cohesive neighborhoods within the Project Area that would exhibit greater consistency in land use and building types, and would include more clearly defined residential neighborhoods, commercial corridors, and high-tech/light industrial/PDR areas. Therefore, implementation of the Draft Plan and Rezoning of Adjacent Parcels would not have a substantial impact on the existing character of the vicinity, and direct and indirect impacts associated with this criterion would be less than significant.

Mitigation: None required.

Impacts of the 350 Eighth Street Project (Project-Level Analysis)

Impact LU-3: The proposed 350 Eighth Street project would not divide an established community. (Less than Significant)

The 350 Eighth Street project site currently is used as a bus parking and inspection yard. It is occupied by a large paved lot and three small, single-story buildings (see discussion above under “Environmental Setting”). The site currently has no public access.

The 350 Eighth Street project would introduce residential uses as well as commercial, artists’ studios, and community space on the 350 Eighth Street project site. As discussed in Chapter 2, Project Description, the proposed 350 Eighth Street project would include seven buildings ranging from four to six stories tall distributed around an internal driveway loop planted with street trees, and a central landscaped courtyard with pedestrian alleys connecting to the internal driveway. Pedestrian access would be available on all sides and automobile access to the internal driveway would be provided from Eighth Street. Implementation of the 350 Eighth Street project would transform the site from its current use as a paved parking lot into a mixed-use project that would be integrated into the surrounding neighborhood. This change would not divide any existing community on site or in the vicinity of the Project Area; to the contrary, any existing division by the site and its current use of the surrounding area would be rectified. Consequently, approval of the 350 Eighth Street project would cause no impact related to this criterion.

Mitigation: None required.

Impact LU-4: The proposed 350 Eighth Street project would not have a substantial impact on the existing character of the vicinity. (Less than Significant)

Existing buildings adjacent to and across the street from the 350 Eighth Street project site on Harrison and Eighth Streets accommodate a range of uses, including mixed retail/industrial/office, live/work lofts, and public-serving uses such as the Salvation Army’s Harbor Light Center. The proposed 350 Eighth Street project’s ground-level commercial (retail, restaurant, service and the like) uses along Harrison and Eighth

Streets and four-story commercial building at the corner of Harrison and Gordon Streets would complement the mixed-use character of these corridors. Proposed residential and community space uses, including a pocket park, would be located along Ringold Street adjacent to some existing residential and retail uses in this alley. Gordon Street primarily serves as rear access to properties that have their primary entrances on Ninth Street, as well as a bar/nightclub at the corner of Harrison and Gordon. The proposed 350 Eighth Street project, with its combination of residential, commercial, and arts-related uses and community space, would be consistent with the mixed-use character of the surrounding neighborhood. Proposed higher-intensity commercial uses would be located near similar existing uses along Harrison and Eighth Streets, including a four-story commercial building with no residential units across Gordon Street from the existing bar/nightclub, while less intensive residential uses would be located adjacent to existing residential uses along Ringold Street.

The 350 Eighth Street project site is currently zoned SLR, which generally allows the proposed mix of uses. As part of the Draft Plan, this parcel would be rezoned to Western SoMa Mixed-Use General (W SoMa MUG), which would allow residential, commercial, light industrial, and arts-related uses. The proposed project would be consistent with the proposed zoning described in the Draft Plan. The 350 Eighth Street project site is currently within a 40-X height and bulk district. As part of the Draft Plan, the height would be redesignated as 55-X/65-B. The tallest buildings proposed by the 350 Eighth Street project would be 65 feet tall; therefore, the project would be consistent with the new height designation proposed by the Draft Plan. (As noted in Chapter 2, Project Description, in the absence of adoption of the Draft Plan and associated Planning Code and Zoning Map amendments, the 350 Eighth Street project would require a site-specific height increase, a CU authorization to create a loading/unloading zone on Harrison and Eighth Streets, and a rear-yard modification.)

Under the Draft Plan, areas adjacent to the 350 Eighth Street project site across Eighth Street would be similarly zoned as W SoMa MUG. A new RED Mixed district is proposed to the north across Ringold Street, and parcels adjacent to the project site on Gordon Street would be zoned Western SoMa Regional Commercial District (W SoMa RCD). The proposed 350 Eighth Street buildings would be four to six stories tall, plus mezzanine, which would be taller than most of the surrounding buildings. However, the separation of uses into several buildings and the articulations of those buildings along primary façades would help to break up the project into smaller components. The height increases along Eighth and Harrison Streets would be less pronounced due to the fact that these streets are much wider and, thus, the larger buildings would be in better proportion with the surrounding area. While the 350 Eighth Street project would be larger in scale than that of most buildings currently found throughout the Draft Plan Area, the project would not necessarily result in an adverse effect on the character of the site or its vicinity. With implementation of the 350 Eighth Street project, street-level uses along all bordering streets surrounding the project site, and particularly along Eighth and Harrison Streets, would generate pedestrian interest, as compared to the current condition of the flat expanse of asphalt, sometimes occupied by Golden Gate Transit buses but more frequently devoid of any activity. Therefore, while the 350 Eighth Street project would introduce taller and more massive buildings than exist in most of the vicinity, the 350 Eighth Street project would also introduce active uses where none currently exist. Because of this, and because, as noted, the 350 Eighth Street project height and bulk would be substantially offset by façade modulation and by the width of the adjacent streets, the 350 Eighth Street

project would not adversely affect the character of the 350 Eighth Street project site or its vicinity, and this impact would be less than significant.

The proposed 350 Eighth Street project features a range of uses that would complement the mixed uses of the area; therefore, no adverse impacts on the existing character of the 350 Eighth Street project site vicinity or the Project Area would occur.

Mitigation: None required.

Cumulative Impacts

Impact C-LU: The implementation of the Proposed Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute considerably to a significant cumulative impact on land use. (Less than Significant)

The Draft Plan Area, Adjacent Parcels, and the surrounding neighborhoods (particularly East SoMa) serve as the geographical context for cumulative impact analysis for land use. Based on the analysis provided above, the anticipated changes to land use and character within the Draft Plan Area, on the Adjacent Parcels, and at the 350 Eighth Street project site would be considered less than significant.

In addition to the growth and land use change incentives created by the Draft Plan and potential development on one or more of the Adjacent Parcels, other development unrelated to the Draft Plan would continue to occur in the vicinity of the Project Area. Among the cumulative projects considered in this Draft EIR are the *Central Corridor Plan*, the 5M Project, Moscone East, and 801 Brannan Street/One Henry Adams Street Project, which are described in the Chapter 4 Overview. Similar to the Draft Plan, it is anticipated that other future development in East SoMa and other nearby areas, including the development projects listed above, would be generally consistent with the land use and character of its surroundings. While the character of specific areas may be altered by such development, the changes are not anticipated to be adverse on a cumulative level.

As with the Draft Plan, changes in nearby neighborhoods in East SoMa and other areas are likely to result in more cohesive (albeit potentially more intensified) land use patterns, an enhanced pedestrian environment, and a wider range of transportation options. Changes in the land use pattern and character in areas surrounding the Project Area would similarly occur incrementally over the approximate 20-year timeframe of the Draft Plan. Such cumulative development would be expected to be consistent with the adopted plans and policies for these areas. These cumulative land use changes would be regulated by, and be consistent with, the *San Francisco General Plan* and Planning Code provisions. Therefore, based on the foregoing, the Proposed Project would be expected to make a less-than-significant contribution to cumulative land use impacts.

Mitigation: None required.

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4.B. Aesthetics

This section describes baseline visual conditions in the Project Area and analyzes the potential for the Proposed Project to affect those conditions, focusing primarily on visual character, views from public areas, and light and glare. This section specifically analyzes the physical changes that would result from implementation of the Draft Plan as well as the Rezoning of Adjacent Parcels. This section also describes and analyzes the potential visual impacts associated with implementing the proposed infill development at 350 Eighth Street. Photos and visual simulations are included in this section to supplement the analysis of the baseline visual character of the Project Area.

Environmental Setting

Western SoMa Community Plan Area and Adjacent Parcels

Visual Character

The Project Area covers approximately 301.9 acres and is surrounded by the Civic Center, Tenderloin, East SoMa, Showplace Square, Mission District, Hayes Valley, and Lower Haight neighborhoods. The visual setting of the Project Area is varied, reflecting the visual characteristics of the Project Area's natural and built elements, including topography, street grids, elevated roads, and individual buildings and blocks. However, it is possible to describe some general characteristics that establish the Project Area's visual setting.

The topography of the Project Area is mostly flat and does not feature any prominent hills or drastic variations in elevations. Within the Draft Plan Area, north of Harrison Street, the topography slopes slightly from about 23 feet San Francisco City Datum (SFD)¹ along the western edge of the Draft Plan Area to a peak of approximately 46 feet SFD near the intersection of Minna and Ninth Streets and back down to about 17 feet SFD in the eastern portion of the north of Harrison Street area. South of Harrison Street, the changes in topography are similarly mild; the topography gently descends from approximately 5.4 feet SFD along the northern edge of this area to approximately 1.6 feet SFD along its southern edge. The topography of the Adjacent Parcels is also generally flat, at approximately same elevation as the northern edge of the Draft Plan Area (5.4 feet SFD). In comparison to other neighborhoods in San Francisco, such as Russian Hill to the north, Potrero Hill to the south, or Sutro Heights to the west, the variations in topography within the Project Area are considered to be relatively modest, with all slopes less than 15 percent gradient.

The type and distribution of land uses in the Project Area also contribute to its visual character. The Project Area contains residential uses, in the forms of single-family homes, duplexes, and apartment buildings, as well as light industrial, production, distribution and repair (PDR), religious, non-profit, educational, entertainment, and public uses. Vacant lots, surface parking lots and gas stations are also

¹ San Francisco City Datum 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.

scattered throughout the Project Area. Several major streets contain stretches of commercial establishments along the street level (commercial corridors), which generate pedestrian traffic and are generally more vibrant areas within the Project Area. They can be found along the upper (east of Ninth Street) and lower (west of 10th Street) stretches of Howard Street, upper (east of 10th Street) and lower (west of 11th Street) stretches of Folsom Street, along 10th Street, and along Eighth Street (north of Folsom Street).

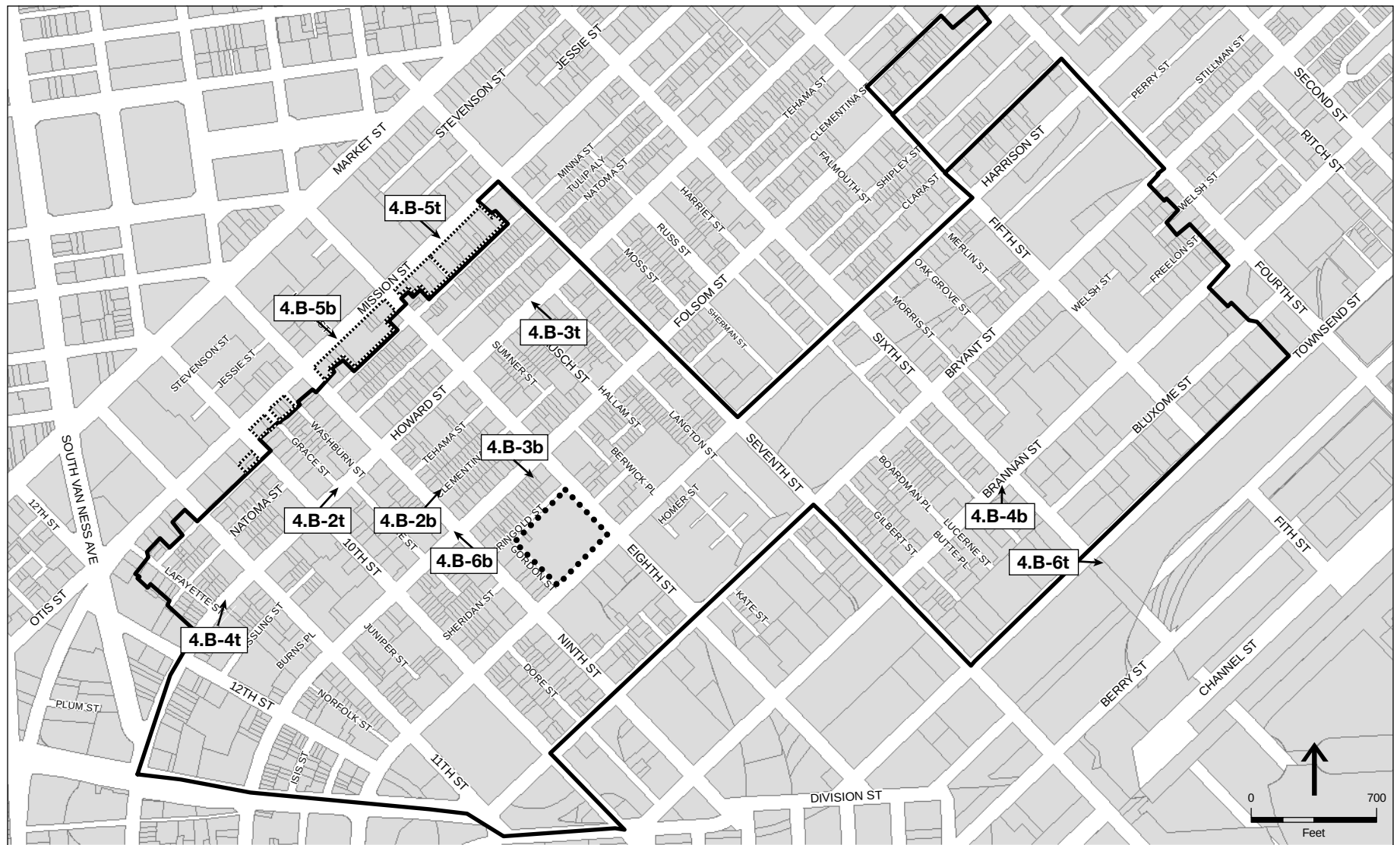
The Project Area contains several residential clusters along narrow streets and alleys. Residential uses also line segments of most major streets. In general, however, the residential uses are interspersed with commercial and light industrial/PDR uses and do not predominate in any portion of the Project Area. While some differences exist between the various development clusters within the Project Area (including clusters within the Draft Plan Area and on the Adjacent Parcels), the predominant visual quality can be characterized as a mix of land uses, building styles, and building sizes built along a regular grid of (mostly) rectangular blocks containing larger arterial streets intersected by smaller streets and alleys.

The following section describes visual quality of the Project Area in greater detail. Photographs are keyed to the viewpoint map in **Figure 4.B-1**, p. 4.B-3.

Streets and Street Pattern

The large scale of streets and blocks contributes to the visual character of the northern portions of the Project Area. A grid of very long blocks—ranging from 490 feet to as long as 900 feet—is intersected by mid-block alleys.² The primary streets, such as Mission, Howard, Folsom, Harrison, Bryant, Brannan, Eighth, Ninth, and 10th Streets, are relatively wide (i.e., about 60 feet) and accommodate up to four lanes of traffic (in addition to one or two parking lanes). East-west-oriented streets, such as Mission, Howard, Folsom, Harrison, Bryant, and Brannan, carry one- or two-way traffic through the Draft Plan Area, as do major north-south couplets such as Fifth, Sixth, Seventh, Eighth, Ninth, and 10th Streets. These high-volume streets are flanked by sidewalks and overhead utility wires and often lack street trees or other pedestrian amenities. The pedestrian corridor is narrow in relation to the overall right-of-way, resulting in a weak visual boundary between the street and the pedestrian realm, which tends to lack landscaping, street furniture, or other definition. Combined with relatively sparse pedestrian use of most of these street segments and the high speeds at which they are traveled by vehicles, they generally convey a character dominated by automobiles rather than pedestrians. Almost all of the blocks within the Project Area (including those that make up the Draft Plan Area and the Adjacent Parcels) are arranged along a rectilinear grid, with the exception of 11th, 12th, and 13th Streets, which terminate in a wedge-shaped plaza located in the southwestern portion of the Project Area. Streets and street intersections are generally regular, with few traffic calming features such as bulb-outs, traffic circles, or speed bumps.

² The term “alley” is used to denote minor streets between the multi-lane major streets in Western SoMa. Although most are not technically alleys as defined in the Planning Code (by which an alley is a right-of-way less than 30 feet), these minor mid-block streets are commonly referred to as such and are distinguished from the major streets by their relatively narrow widths.



— Western SoMa Community Plan Area Adjacent Parcels 350 Eighth Street project site

12t Number indicates figure number - t = top image - b = bottom image

By contrast, the narrow alleys that intersect the primary street grid within the Project Area convey a smaller scale, with most buildings conforming to the 25-foot lot widths. (In some areas the lots are combined to accommodate larger buildings.) Within the *Western SoMa Community Plan Area*, this smaller-scale mixed-use pattern consists mostly of buildings built after the 1906 earthquake, and includes a range of building types, from one-story residential cottages and houses to larger commercial and light industrial buildings. These types of alleys exist throughout the entire Draft Plan Area, although more residential buildings exist in areas north of Harrison Street as compared to areas south of Harrison Street. In addition, areas south of Harrison Street contain a greater number of large lots and floor plates (20,000 square feet or greater), owing in part to their industrial past. Some facilities, including commercial, light industrial, and storage-related operations, occupy entire blocks or large portions of blocks. Because the Adjacent Parcels take up a much smaller area than the Draft Plan Area, the range of development patterns and building types that can be found there is proportionally smaller. In general, however, since the Adjacent Parcels are located mostly along Mission Street, just north of the *Western SoMa Community Plan Area*'s northern boundary, they continue the Draft Plan Area's development pattern discussed above.

The Project Area contains several elevated freeway segments and a number of off- and on-ramps that, as a whole, contribute to the automobile-oriented visual character experienced along some of the major streets. U.S. Highway 101 (US 101) runs in an east-west direction along the southwestern border of the Project Area. Approximately 20 feet above street grade, US 101 runs parallel and above 13th Street, creating a visual edge along this Project Area boundary and obscuring southerly views onto the neighboring areas. Interstate 80 (I-80) runs in an east-west direction through the middle of the Project Area, dividing the Western SoMa neighborhood into two general areas as discussed above (north of Harrison Street and south of Harrison Street). Many of the vacant and underused lots underneath I-80 are generally unattractive to pedestrians, due to factors such as traffic, noise, and the cavernous sense created by the overhead structures, and appear neglected. They are sometimes strewn with trash and contain homeless populations. Interstate 280 (I-280) terminates near the southern portion of the Project Area and a ramp extending from I-280 runs above Sixth Street, touching down on the corner of Sixth and Brannan Streets.

Buildings and Streetscapes

Overall, the Project Area is more moderately scaled and modest in height as compared to the adjacent areas such as Civic Center, the Financial District, and Moscone Center, which contain a greater number of high-rise buildings as well as buildings that span multiple lots. The blocks throughout the Project Area (including the blocks containing the Adjacent Parcels) exhibit a highly diverse visual character, with early 20th century commercial and residential buildings often interspersed with newly constructed buildings and vacant lots on the same block. The Project Area contains buildings of different types and styles, including residential and commercial, large and small, architecturally ornate and simple structures. Although the visual character of larger arterial streets differs from that of smaller streets and alleyways, as noted above, the predominant quality of the Project Area is a hodgepodge of building sizes and architectural styles, which is underscored by the often fluctuating street wall sometimes punctuated by vacant lots or surface parking lots. No architectural style or massing type seem to dominate (see **Figures 4.B-2 through 4.B-4** on pp. 4.B-5 through 4.B-7).



Looking east on Howard Street from Tenth Street



Looking east on Clementina Street from Ninth Street

SOURCE: ESA

2008.0877E and 2007.1035E: Western SoMa Community Plan,
Rezoning of Adjacent Parcels, and 350 Eighth Street Project

Figure 4.B-2
Street Views



North Side of Howard Street between Seventh and Eighth Streets



Commercial building at Eighth and Folsom Streets

SOURCE: ESA

2008.0877E and 2007.1035E: Western SoMa Community Plan,
Rezoning of Adjacent Parcels, and 350 Eighth Street Project

Figure 4.B-3
Views of Project Area Buildings



Residential Buildings on Howard Street east of 12th Street



Residential Building at Brannan and Sixth Street

SOURCE: ESA

2008.0877E and 2007.1035E: Western SoMa Community Plan,
Rezoning of Adjacent Parcels, and 350 Eighth Street Project

Figure 4.B-4
Views of Older and Contemporary Residential Buildings

Arterials and Larger-Scaled Streetscapes. Large segments of the major arterial streets, such as Mission, Howard, Folsom, Harrison, Bryant, Brannan, Fifth, Sixth, Seventh, Eighth, Ninth, and 10th Streets, are flanked by commercial and residential buildings ranging from one to six stories, with most buildings in the two- to four-story range. The sidewalks along the larger arterial streets have some vegetation, but the landscaping is irregular and large swaths of paving predominate. The wide streets dwarf the sidewalks and, together with the utility lines overhead and the large commercial signs throughout the Project Area (which are more numerous in the Draft Plan Area), create a vehicle-oriented experience, particularly along the north-south oriented streets such as Eighth, Ninth, and 10th Streets.

Many commercial structures within the Project Area are one- and two-story concrete buildings of early-20th-century commercial industrial style, typically built of concrete or brick. Many feature steel sash windows, a regular grid of openings, flat roofs, and awnings, referencing the formerly industrial character of this area. They are generally built to property lines and have rectangular floor plans. These structures generally have minimal architectural ornamentations along their primary façades and, as a result, draw minimal pedestrian engagement at the street level. Such buildings exist along almost all of the major arterials, including Mission, Howard, Folsom, Brannan, and Harrison Streets. Some, which have been converted to restaurants and night clubs over the years, exhibit architectural embellishments added to primary façades in order to attract attention to their uses. Examples of these buildings can be found along Folsom Street between Seventh and Ninth Streets. Some larger commercial and light industrial buildings, spanning either multiple lots or extending to four or six stories in height, also exist along some of the major arterials; examples are the Flower Mart building at 640 Brannan Street and the BMW Dealership at 1675 Howard Street. The commercial buildings on the Adjacent Parcels are generally unadorned, with façades typically lacking details to convey the uses within. As a whole, the Adjacent Parcels contain similar building stock as, and have comparable visual character to that of the commercial and light industrial uses in the areas north of Harrison Street in the Draft Plan Area (see **Figure 4-B.5**, p. 4.B-9). The exceptions to this are the heavily adorned building at 1235 Mission Street that houses the San Francisco Department of Human Services and the several vacant lots and parking lots discussed below.

The Project Area's larger arterials also contain a variety of residential buildings, of both Edwardian and more contemporary architectural styles, all of which are located in the *Western SoMa Community Plan* Area. The older residential flats are generally mid-rise (three to five stories) and are built of wood-frame construction, featuring bay windows, flat roofs, and, in some cases, modern architectural design flourishes that have been added over the years. The bays break up the primary façades and create visual interest, especially when juxtaposed next to the more streamlined commercial structures. Contemporary residential buildings generally encompass larger volumes than older buildings, maximizing the lot's building envelope (most are in the three- to five-story range), and these exist as condominium developments, pseudo-industrial "live-work" lofts, and as upper stories of mixed-use buildings. These mid-rise residential developments incorporate a range of different visual elements and architectural features, and many include balconies, irregular pattern of fenestration, colored panel cladding, and other features that create variation and interest along the primary façades and visually break up the large structures. Some reference industrial architecture of a previous era, featuring materials such as concrete, glass, and steel.



South side of Mission Street between Seventh and Eighth Streets



South side of Mission Street between Eighth and Ninth Streets

SOURCE: ESA

2008.0877E and 2007.1035E: Western SoMa Community Plan,
Rezoning of Adjacent Parcels, and 350 Eighth Street Project

Figure 4.B-5
Views of the Adjacent Parcels

The arterial streets within the Project Area also contain a number of vacant lots, surface parking lots, gas stations and other underused parcels, some of which are bordered by cyclone fencing to limit public access. Such parcels exist within the Draft Plan Area and on some of the Adjacent Parcels. They infuse industrial character into the Project Area and, when sited next to buildings several stories tall, interrupt the streetwall and expose the adjacent buildings' side walls, some of which contain murals or commercially scaled signage.

Alleys and Smaller-Scaled Streetscapes. As noted above, the alleys within the Project Area (most of which are within the Draft Plan Area) are narrower and exhibit a smaller scale than the major arterials. They are generally more pedestrian-, rather than vehicle-, oriented and receive relatively little through vehicle traffic; some terminate in dead-ends. These narrow streets, which usually accommodate one or two lanes of traffic, typically contain a more homogeneous pattern of building sizes, and some contain more abundant vegetation. The narrow sidewalks, street trees, minimal through traffic, and a more consistent building pattern result in a smaller scale and a more pedestrian-oriented streetscape. Although some variety still exists within the alleyways in terms of building styles, uses, sizes, articulation, rooflines, and fenestration patterns, many structures adhere to a 25-foot lot width, and the variation between adjacent buildings in terms of massing is generally less dramatic than what can be found along the major arterials. Two such alleys, Washburn and Grace Streets, terminate at some of the Adjacent Parcels (between Ninth and 10th Streets). However, since buildings on those parcels face Mission Street, the smaller scale describe above does not exist within the Adjacent Parcels.

The residential buildings that are found within the Project Area alleys (found within the Draft Plan Area) are generally similar to the residential buildings along the major streets. As such, they include three- to six-story wood-frame or masonry apartment buildings, multi-family frame flats, and small single-family cottages. Architectural styles vary and include flats designed in the Edwardian styles as well as apartment buildings with more contemporary construction.

Some commercial and light-industrial uses, including PDR, also exist within the alleys throughout the Project Area. In some instances, commercial buildings front onto the main arterials with their secondary façades extending into the smaller streets (such is the case with several buildings on the Adjacent Parcels, such as those just east and west of Julia Street, between Seventh and Eighth Streets). Building heights within the narrow streets and alleys vary from one to five stories, with most of the buildings in the two- to three-story range. The smaller streets usually have parking lanes along one or both sides, with cars (sometime illegally parked on curbs), adding to the static character experienced here as compared to the major streets. Other visual features that add to the overall look of these smaller streets and the Project Area as a whole are murals, mosaics, commercial signs, and billboards, most of which can be found in the *Western SoMa Community Plan Area*.

Visual and Scenic Resources

The Project Area contains a number of notable buildings (including several City Landmarks) as well as building clusters that make up potential historic districts. While none of them are considered visual or scenic resources for the purposes of CEQA, they are discussed here for informational purposes. One such notable building is the St. Joseph's Church, located on the southwest corner of 10th and Howard Streets. The church is of Roman-Renaissance Revival architectural style and contains arched windows and heavy

articulation and ornamentation along both façades (with many vertical elements, including two steeples). The church is also larger and more visually prominent than most other structures in its immediate area. Another visually unique building is the Jackson Brewery, located at the corner of Folsom and 11th Streets. The brewery is a large unreinforced masonry building, constructed between 1905 and 1906, and draws attention due to its size and architectural details, including arched and rectangular windows, vertical and horizontal bands along both façades, and a prominent corner tower. Lastly, the Lick Bath House, which is located at 165 Tenth Street and which was constructed in 1890, is another City Landmark. It is constructed in a Renaissance Revival architectural style. The Project Area also contains a number of new large residential buildings (for example, at the corner of Eighth and Howard Streets), some of which can be considered visual resources because of their commanding presence at the street, owing to distinctive color schemes and design elements.

South of Harrison Street between Sixth and Seventh Streets is the Hall of Justice complex, which includes the San Francisco County Jail. The Hall of Justice structure is a six-story building of contemporary architectural style containing concrete shear walls and rows of regularly-spaced aluminum-frame windows along three of its façades – Seventh, Bryant, and Harriet Streets. The façade that fronts Harrison Street, however, has a distinctive display of undulating glass that is visible from I-80. This Harrison Street façade adds elements of lightness and modernism to the otherwise unadorned structure and is the most visually prominent structure within the areas south of Harrison Street.

According to the Historic Context Statement prepared by Page & Turnbull,³ the *Western SoMa Community Plan* Area contains two potential historic districts: the Western SoMa Light Industrial and Residential District and the Bluxome and Townsend Warehouse Historic District. The former is roughly bounded by Mission, Harriet, Harrison, and 13th Streets. It exhibits a heavy concentration of early-20th-century light industrial and residential buildings, although individually these buildings have limited scenic value. A smaller potential sub-district was also identified within the Western SoMa Light Industrial and Residential District that contains a cluster of Art Deco and Streamline Moderne industrial architecture (see Section 4.D, Cultural Resources). The other potential historic district, the Bluxome and Townsend Warehouse Historic District, is roughly bounded by Bluxome, Fifth, Sixth, and Townsend Streets and contains structures constructed between 1912 and 1936, all of which are industrial warehouse buildings that were constructed in brick or reinforced concrete. These early-20th-century buildings add visual interest at the street level by conveying a distinctive architectural style although, as mentioned above, the are not considered visual or scenic resources within the context of CEQA. On the Adjacent Parcels, the 1235 Mission Street building, mentioned above, is also considered a notable building. This structure, constructed in 1927, is visually distinctive due to its Art Deco details and colorful tiles on the primary façade (see Figure 4.B-5, p. 4.B-9).

³ Page & Turnbull, *SoMa Historic Context Statement, SoMa San Francisco*, prepared For San Francisco Planning Department, December 2009. Available online at: <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=372>, accessed April 19, 2012. Available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2008.0877

Only one public open space is located within the Project Area: the Howard-Langton Mini Park, a community garden with benches and tables. (The location of this park is indicated in **Figure 2-1** in Chapter 2, Project Description.) This park enhances the visual environment in its immediate vicinity by providing patches of dense vegetation within otherwise highly urbanized surroundings. However, it is too small to be visible from sidewalks farther than a block or so away. Several other public open spaces, including the Victoria Manalo Draves Park, the Civic Center Plaza, U.N. Plaza and the South of Market Recreation Center, are located nearby but are outside of the Project Area boundaries. These larger parks provide more substantial landscaping and visually complement the surrounding urban forms. No parks or open spaces are located on the Adjacent Parcels.

Views

As noted above, a segment of I-80 divides the Project Area into northern and southern portions and limits views into some of the surrounding neighborhoods to the north and south, such as Mission Bay and Downtown. In addition, westerly and southerly views from the Project Area onto the adjacent Mission and Hayes Valley areas are limited by US 101, particularly when viewed at the street level. In all directions, the views are also limited by the intervening development and variations in topography beyond the Project Area boundary.

Northerly views from of the north-south-oriented streets (and particularly from the Adjacent Parcels) provide views of the tall buildings of the Downtown and Civic Center neighborhoods. Some east-west-oriented streets provide views toward the East SoMa and Mission neighborhoods. Some views in the westerly direction provide partial views of the elevated Buena Vista Park. Along Townsend Street, at the southern edge of the Project Area, views of the Caltrain railroad tracks as well as Caltrain's San Francisco station are available, extending in an east-west direction and parallel to the Project Area's southern boundary. Beyond the Caltrain right-of-way, Mission Bay North residential buildings is visible. Some of the views toward the neighboring districts are shown in **Figure 4.B-6**, p. 4.B-13.

Light and Glare

Sources of light and glare in the Project Area are generally limited to the interior and exterior lights of buildings, parking lot lighting, and street lighting. In addition, cars and trucks traveling to, from, and within the Project Area also represent a source of glare. These sources of light are typical of developed urban areas.

350 Eighth Street Project Site

Visual Character

The 350 Eighth Street project site is located on a block bounded by Eighth, Ninth, Harrison, and Folsom Streets. Ringold Street, a one-way (east-to-west) alley, forms the northern boundary of the project site, while the dead-end Gordon Street alleyway runs along its western edge. An I-80 westbound off-ramp is located diagonally from the project site, on the corner of Eighth and Harrison Streets, adding an automobile-oriented quality to this corner.



Looking southeast on Townsend Street towards Mission Bay North Redev. Area



Looking north on 10th Street towards Market Street

SOURCE: ESA

2008.0877E and 2007.1035E: Western SoMa Community Plan,
Rezoning of Adjacent Parcels, and 350 Eighth Street Project

Figure 4.B-6

Views to Surrounding Neighborhoods

The 350 Eighth Street project site is flat and almost entirely paved. The majority of it is taken up by a surface parking lot, currently used as a Golden Gate Transit bus storage yard. Three one-and-a-half-story sheds are located within the northern portion of the site. The site is visually distinct due to its vastness and openness, measuring approximately 405 by 340 feet. However, the existing sheds on the property lack unique features and are typical of industrial sheds of early 20th century. As such, they contain gabled roofs, metal sash windows, and steel roll-up vehicular and pedestrian doors. Both structures on the 350 Eighth Street project site have a rectangular floor plan and are clad in corrugated metal siding. During the weekday midday period, rows of buses park in parallel along the portions of the parcel not taken up by the sheds. The surface lot also contains painted lines indicating parking configurations, several luminaires along its edge, and a cluster of utility boxes on the corner of Harrison and Eighth Streets. A cyclone fence borders parts of the 350 Eighth Street project site, although the site appears to be open to the public. (During site reconnaissance, the site was observed being used as a short-cut by pedestrians on several occasions.)

The 350 Eighth Street project site departs from the built façades and building types found in the project vicinity. Although several vacant lots are located in proximity to the site (for instance, along Ringold and Eighth Streets), the amount of space used for parking on the 350 Eighth Street project site is unusually large. As a whole, the 350 Eighth Street project site appears vastly underused and without much visual interest, and conveys, if anything, an industrial/vehicle-oriented visual quality.

The built environment surrounding the 350 Eighth Street project site includes a range of building sizes and types. Along Harrison Street is a gas station and several five-story contemporary mixed-use structures, with loft-style residential uses above ground-floor retail uses. The two-story Salvation Army Harbor Light Center building is located on the corner of Harrison and Ninth Streets. Along the Gordon Street alley are one- to two-story retail, office, light industrial, and residential uses, most constructed in early- to mid-20th century. The Stud night club and bar, with its primary façade on Harrison Street (directly across Gordon Street from the 350 Eighth Street project site), serves as a gateway into the alley. Along Ringold and Eighth Streets, building types and sizes are likewise diverse, with most in the one- to three-story range. (These streets also contain several vacant lots.) In several cases, the residential units are located above ground-floor commercial space. In general, the blocks that surround the 350 Eighth Street project site are typical in visual quality and building design of those found in the Project Area as a whole.

Visual Resources

The 350 Eighth Street project site does not contain any notable visual resources and is not considered to be a visual landmark. Moreover, no public open spaces exist on the project parcels or in the immediate vicinity. See **Figure 4.B-7**, p. 4-B-15, for photos of the 350 Eighth Street project site.

Light and Glare

Sources of light and glare on the 350 Eighth Street project site are generally limited to parking lot lighting, street lighting, and vehicular lighting from buses traveling to and from the project site and cars and trucks traveling along the adjacent streets, including the I-80 off-ramp at Eighth and Harrison Streets. These sources also make up sources of glare at and near the 350 Eighth Street project site.



Views of the existing industrial structures and surface parking area at 350 Eighth Street from along Harrison Street.

SOURCE: ESA

2008.0877E and 2007.1035E: Western SoMa Community Plan,
Rezoning of Adjacent Parcels, and 350 Eighth Street Project

Figure 4.B-7
Views of 350 Eighth Street Project Site

Regulatory Setting

Chapter 3, Plans and Policies, describes parts of the Planning Code that are applicable to urban design, including the Urban Design Element of the *San Francisco General Plan* and the Planning Commission prohibition on reflective glass.

Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR, the Proposed Project would result in a significant impact with respect to aesthetics 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 or which would substantially impact other people or properties.

Approach to Analysis

It is not anticipated that the implementation of the Draft Plan or the Rezoning of Adjacent Parcels would substantially damage scenic resources that contribute to a scenic public setting. As a proposed rezoning and General Plan amendment, the Draft Plan would not directly result in any physical changes, nor would the Rezoning of Adjacent Parcels. Rather, any changes in urban form and visual quality would be the secondary result of individual development projects that would occur subsequent to the adoption of the Draft Plan and changes in zoning. (One such project is the 350 Eighth Street project.) As described under “Environmental Setting,” above, the Project Area does not possess high scenic quality or scenic resources as defined by CEQA.

The analysis of impacts associated with the Draft Plan and Rezoning of Adjacent Parcels therefore focuses on how the baseline aesthetic quality in the Project Area could change as a result of elements proposed in these two project components, namely the changes to maximum building heights and land use regulations. The analysis also considers the urban design objectives and policies of the Draft Plan. The analysis considers the degree of visual contrast and compatibility in scale and character between existing development and the future development that are likely to occur under the Draft Plan and the Rezoning of Adjacent Parcels. Little in the way of specific changes to urban form or visual quality would be directly attributable to the Draft Plan or Rezoning of Adjacent Parcels themselves. Instead, the focus of this analysis is on areas where proposed zoning changes could affect the built environment when development on individual sites within the Project Area occurs.

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 the changes due to the Proposed Project to be 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 Draft Plan, for instance).

For the 350 Eighth Street project, the analysis focuses on visual changes that would be made to the 350 Eighth Street project site as a result of this large infill development. These changes are discussed in terms of impacts on visual character of the site itself and the immediate vicinity, public views of and through the site, and light and glare conditions.

It is noted that transportation and street network improvements that would be implemented as part of the Draft Plan would not have any impacts on aesthetics, as they would not have a substantial adverse effect on a scenic vista; would not substantially damage scenic resources; would not substantially degrade the existing visual character or quality of the site and its surroundings; and would not create a new source of substantial light or glare. For this reason, these impacts are not discussed any further in this section.

Impacts of the Western SoMa Community Plan and Rezoning of Adjacent Parcels (Program-Level Analysis)

Impact AE-1: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would substantially damage scenic resources or other features of the built or natural environment that contribute to a scenic public setting, or substantially degrade the existing visual character of the Project Area. (Less than Significant)

The *Western SoMa Community Plan* would be expected to result in changes to the visual character of the Draft Plan Area over time. This would be due to three main factors: (1) proposed increases and decreases in maximum allowable building heights throughout the Draft Plan Area; (2) proposed zoning changes, which would encourage and discourage specific uses, and therefore certain types of buildings, within portions of the Draft Plan Area; and (3) proposed streetscape improvements along designated streets and intersections, including installations of signalized pedestrian crossings, installations of sidewalk extensions and corner bulb-outs, installations of gateway treatments,⁴ and installation of public realm greening and pedestrian enhancements.

These physical changes would be implemented as a result of the proposed zoning and height and bulk changes envisioned for the Draft Plan Area. Generally, however, the increases in permitted heights would be limited to 15 feet throughout most of the Draft Plan Area and 20 feet along the north side of Townsend Street. These increases in permitted heights would be unlikely to result in substantial changes in visual character. In the case of proposed height limit changes along Townsend Street, because this block face overlooks the existing Caltrain tracks and the residential mid-rise buildings of the Mission Bay North Redevelopment Area beyond, height limit increases here would not adversely affect scenic resources or visual character and could, over time, result in development more compatible with existing buildings in

⁴ Gateway treatments could include signage, lighting, and physical roadway features such as enhanced hardscape area, landscaped islands, or colored textured pavement.

the redevelopment area. Thus, while the potential increases in height of up to 20 feet along Townsend Street would result in a taller street wall, this would not be considered an adverse effect, as the proposed heights along Townsend Street would more closely mimic many of the existing building heights along the southern side of King Street, just across the Caltrain right-of-way from Townsend Street. Taller structures would appear appropriate in this location.

It is also important to point out that physical changes would be incremental and would occur gradually over time, as project sponsors find opportunities to implement their projects. Furthermore, it is also noteworthy to state that the existing Draft Plan Area is not currently built to maximum height and bulk limits. The height limits proposed by the Draft Plan would provide a greater incentive than the existing limits for development of specific parcels throughout the Draft Plan Area. As a result, the new buildings could be noticeably taller than the existing structures. Overall, most area-wide changes would not be considered drastic, as most height increases and decreases fall within the 5- to 20-foot range, with the exception of a few decreases of up to 90 feet on about 10 lots in the northwestern corner of the Draft Plan Area that would become part of new Residential Enclave District (RED) and RED Mixed zones. While noticeable to residents, workers, and visitors in the immediate vicinity, these developments would not result in substantial changes to the overall urban scale considering the existing variable nature of the buildings heights and volumes throughout the Draft Plan Area. The overall scale of much of the area would remain mid-rise and urbanized in character.

All future development within the Draft Plan Area would be subject to the proposed *Design Standards for Western SoMa Special Use District* (Design Standards),⁵ a document that includes objectives, policies, guidelines, and standards related to urban form and visual quality. In addition, the Draft Plan contains the following policies that are specifically relevant to the Draft Plan's goals of maximizing urban form and visual quality:

- *Policy 5.1.1:* Promote, preserve and maintain the mixed use character of Western SoMa alleys containing both small scale commercial and residential uses.
- *Policy 5.1.3:* Encourage and support the preservation and adaptive re-use of historic and social heritage neighborhood resources.
- *Policy 5.1.6:* Encourage a mix of uses rather than mixed use developments.
- *Policy 5.1.7:* Develop design guidelines that preserve the industrial character of the larger streets, the mixed industrial/residential character of the RED-mixed area and the residential character of the REDs. (This policy is in reference to the Western SoMa Design Standards that have already been developed and are proposed to be integrated by reference as part of the Draft Plan.)
- *Policy 5.2.4:* Encourage sensitive building use, design and alley guidelines to maximize solar access to all designated Residential Enclave Districts and existing rear yard patterns found elsewhere in the Western SoMa SUD.

⁵ Western SoMa Citizens Planning Task Force, *Design Standards for Western SoMa Special Use District*, 2009. Available online at: <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=7332>, accessed May 19, 2011.

- *Policy 5.2.8:* Enhance the connection between building form and ecological sustainability by promoting use of renewable energy, energy-efficient building envelopes, passive heating and cooling, and sustainable materials.
- *Policy 5.3.2:* Require high quality design of street-facing building exteriors.
- *Policy 5.3.3:* Minimize the visual impact of parking.

Over time, adherence to the Design Standards for particular projects and the required consistency of those projects with the policies articulated in the Draft Plan would result in new development that is cohesive in architectural style and form. However, the mix of building styles areawide would be preserved. For instance, REDs would emphasize high-quality design and pedestrian amenities, while larger projects along the main arterials would emphasize increasing the street wall to make it more proportionate with the wide streets.

The Draft Plan also proposes revisions to the zoning districts that would, over time, encourage or discourage specific land uses within each of the Draft Plan Area districts and would channel specific uses according to areas where they have been determined to be most appropriate. (See Chapter 2, Project Description, for a detailed discussion of the proposed zoning districts.) The land use changes would also allow for increases in urban density and could result in construction of different building types, scales, and architectural designs in certain areas over time as compared to existing conditions. For example, residential uses would be encouraged within the RED and RED Mixed areas, while large-parcel commercial and light industrial developments would be promoted within the W SoMa SALI district, such as on large lots south of Harrison Street. In general, this would have the effect of clustering similar uses over time, which could define and solidify a particular visual character within those specific areas as new buildings are constructed. Thus, the Draft Plan would not degrade the visual character of the Draft Plan Area, and this impact would be less than significant.

In general, the proposed public realm improvements would have a beneficial effect within the Draft Plan Area. The addition of vegetation, pedestrian crossings, corner bulb-outs, and gateway treatments throughout the Draft Plan Area would result in smaller-scaled, more pedestrian-focused streets and would create visual interest at the street level. The streetscape treatments would also temper the severity and bluntness presently conveyed throughout the Draft Plan Area by the wide arterials, freeway segments and on- and off-ramps, and utility poles and wires.

The Draft Plan would not adversely affect any visual resources within the Draft Plan Area, since no such resources exist, as defined by CEQA. Implementation of the Draft Plan could lead to changes in the context of the visually distinct buildings described under “Environmental Setting,” above (e.g., St. Joseph’s Church, Jackson Brewery, Hall of Justice, etc.). However, the Draft Plan Area already contains a large variety of building styles, shapes, and sizes. As individual projects are proposed within the Draft Plan Area in the future, their potential to affect visually distinct buildings would be considered by the San Francisco Planning Department and Planning Commission. Adherence to the Design Standards developed specifically for the Draft Plan Area would also ensure that impacts of new construction on the surrounding context, including existing and future visually distinct buildings, are minimized.

The Rezoning of Adjacent Parcels proposes to alter the zoning of the identified parcels but does not propose height or bulk reclassifications. Like the Draft Plan, the Rezoning of Adjacent Parcels could create incentives for demolition of the existing buildings and their replacement with taller structures. These changes would alter the overall character of the Adjacent Parcels over time (as individual projects are proposed as constructed) but would not be considered an adverse impact, as some of the structures on the Adjacent Parcels are already built out to the maximum height limits. Eventually, the construction of taller buildings along Mission Street would create a more uniform street wall as shorter buildings and surface parking lots are replaced with the taller buildings. However, taller buildings and a uniform street wall would not be expected to substantially degrade the existing character of the Adjacent Parcels. Furthermore, the Adjacent Parcels do not contain any notable visual resources as defined within the context of CEQA. (The 1235 Mission Street buildings is visually prominent but is not considered a scenic resource.) Therefore, the Rezoning of Adjacent Parcels is not expected to damage any scenic resources or substantially degrade the existing character of the Adjacent Parcels.

In conclusion, the implementation of the *Western SoMa Community Plan* and the Rezoning of Adjacent Parcels would have a less-than-significant environmental impact on the scenic resources and the visual character of the Project Area.

Mitigation: None required.

Impact AE-2: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would substantially alter the public views currently experienced within the Project Area or have a substantial adverse effect on any scenic vistas. (Less than Significant)

As the Draft Plan and the Rezoning of Adjacent Parcels are implemented over time, the view angle to the sky could decrease within some street corridors.⁶ Most views from streets and the one publicly accessible park within the overall Project Area are not panoramic; rather, they are urban views down developed corridors already flanked by buildings. While proposed building height increases and use district changes could facilitate taller and/or more massive development in some locations, and thus decrease the view angle to the sky, taller buildings would not generally obstruct other currently visible elements. The Draft Plan includes the following policy that is particularly relevant to the Draft Plan's goals of preserving existing views: "*Policy 5.3.1: Respect public view corridors. Of particular interest are the east-west views to the bay or hills, and several views towards the downtown.*"

As noted above, the views currently experienced throughout the Project Area include views of the high-rise buildings in the surrounding neighborhoods to the north and east, views of the Mission Bay neighborhood to the south, views of the various elevated freeways along the southwestern edge of the Project Area, and limited views of the Mission District beyond. These views would all continue to be available.

⁶ In the case of the Rezoning of Adjacent Parcels, while changes to height limits are not proposed, taller development could occur on lots that are not currently built to existing height limits and where the proposed Rezoning of Adjacent Parcels could create incentives for new development.

Similarly, views of and from the public parks and open spaces in the vicinity of the Project Area would also continue to be available. This includes views from and of the Howard-Langton Mini Park, the Victoria Manalo Draves Park, Civic Center Plaza, U.N. Plaza and the South of Market Recreation Center. Most of these parks are visible from relatively close range (approximately one block), due to intervening development and relatively flat topography; availability of such views would not be expected to change with the implementation of the Draft Plan and Rezoning of Adjacent Parcels.

New development up to the existing height limits (in the case of the Rezoning of Adjacent Parcels) and proposed height limits (in the case of the Draft Plan) may even help define the street edge and better frame these urban views. Thus, neither the Draft Plan nor the Rezoning of Adjacent Parcels would substantially alter the public views currently experienced within the Project Area or have a substantial adverse effect on any scenic vistas.

Mitigation: None required.

Impact AE-3: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would create new sources of substantial light or glare that would adversely affect day or nighttime views in the vicinity of the Project Area, or that would substantially affect other people or properties. (Less than Significant)

The Draft Plan is a General Plan amendment and rezoning program, rather than a specific physical project, and itself would not generate any new sources of light or glare.

While individual development projects that occur under the Draft Plan and the Rezoning of Adjacent Parcels could generate additional night lighting in the future, these individual would not result in obtrusive light or glare that would adversely affect views or substantially affect other properties. Development projects that occur on properties within the Draft Plan Area and on the Adjacent Parcels could generate additional night lighting, but not in amounts unusual for a developed urban area. In fact, new residential development that replaces open parking lots or yards would likely include softer lighting and generate less glare than the existing security lighting at the parking lots and yards, because residential exterior lighting tends to be focused on specific doorways, rather than lighting a wide area such as a surface parking lot. Furthermore, Planning Commission Resolution 9212 generally prohibits the use of mirrored or reflective glass in new buildings.

Based on the above, neither the Draft Plan nor the Rezoning of Adjacent Parcels would create new sources of substantial light or glare that would adversely affect day or nighttime views in the Draft Plan Area or on the Adjacent Parcels, or that would substantially affect other people or properties.

Mitigation: None required.

Impacts of the 350 Eighth Street Project (Project-Level Analysis)

Impact AE-4: The proposed 350 Eighth Street project would not have a substantial adverse effect on scenic vistas. (Less than Significant)

The implementation of the proposed 350 Eighth Street project would alter the existing views from public viewpoints along the sidewalks adjacent to and in the vicinity of the 350 Eighth Street project site but would not adversely affect any scenic vistas for the reasons discussed below.

Impacts on Short-Range, Medium-Range, and Long-Range Views

As noted above, the 350 Eighth Street project would be developed on a site that currently contains three one-and-one-half-story sheds and a large surface parking lot. The proposed 350 Eighth Street project would alter some of the existing views available from public areas, primarily from sidewalks along Harrison, Ringold, Gordon, and Eighth Streets. Effects on views from sidewalks along Harrison and Eighth Streets would be more pronounced, since these streets are more heavily traveled by vehicles and pedestrians than Gordon and Ringold Streets. However, based on the classification of these streets in the *San Francisco General Plan*, such views are not generally considered scenic.

Short-range views of the project site from all four of the surrounding streets would be visually defined by the proposed four- to six-story structures, which would be larger than the one- to three-story structures in the immediate vicinity. The most prominent features of the buildings that would be visible in short-range views from the surrounding streets would be the buildings' outer façades (including cladding, fenestration, building entries, setbacks, articulation, etc.), although the site's interior would be visible from certain vantage points, such as next to the pedestrian and vehicular entrances. The buildings along the perimeter of the 350 Eighth Street project site would dominate short-range views from the surrounding sidewalks and, in general, the project site would appear considerably different from how it is currently perceived. The views of the proposed structures in the context of the smaller alleys (Ringold and Gordon) would be moderated by the proposed upper-story setbacks. However, the continuous street wall would differ greatly from what is currently perceived in these views. In general, the implementation of the 350 Eighth Street project would result in short-range views that are more dense and urban in character. The project would clearly intensify development at the site as viewed from short-range locations and would substantially change views from such vantage points. However, such changes would not be considered substantial or adverse as they would not be degrading in nature.

Medium-range views extend a block or so in each direction. The development would be built to property lines along all surrounding streets and would take up the entire block, so the diagonal views that are currently available through the project site when no or few buses are parked on the lot would be obscured by the new buildings. Existing views along the streets and sidewalks, which are not considered scenic, would continue to be available and would be similar to existing conditions, except for the roughly continuous street wall that the 350 Eighth Street project would create along each of the bordering sidewalks (as noted above). The 350 Eighth Street project would be obvious in medium-range views but would appear as a visually compatible component within the existing range of building heights in the vicinity of the 350 Eighth Street project site, which contains other moderately scaled structures. The views along Eighth, Harrison, Ringold, and Gordon Streets would include the proposed three- to six-story

buildings, which would be among the tallest structures in the immediate vicinity of the 350 Eighth Street project site. From vantage points where multiple portions of the project are visible (for example, residential and commercial uses), the new buildings would appear as separate but related structures. In general, medium-range views, while altered by the project, would not be degraded when compared to what is currently experienced by the general public.

Long-range views would be generally similar to those experienced throughout the 350 Eighth Street project vicinity. Specifically, pedestrians and passing vehicles would continue to experience limited views of the high-rise towers in the Civic Center, East SoMa, Downtown, and Rincon Hill neighborhoods, portions of the elevated U.S. 101 and I-80 freeways (to the southwest and south directions, respectively), and the Buena Vista Park hill to the west. Because the 350 Eighth Street project site and the surrounding area are flat, the existing long-range views in all directions are partially obscured by intervening development. The 350 Eighth Street project would further obscure long-range views from locations adjacent to the site, particularly views toward Civic Center and Downtown from Harrison Street and views toward the western portions of the city from Eighth Street. However, such views of the surrounding neighborhoods are common throughout the surrounding vicinity and San Francisco as a whole due to the undulating topography that offers glimpses of high-rise buildings from many locations, and are not considered scenic. The project would not change views from areas more distant from the site.

Visual Simulations

Two visual simulations were prepared to illustrate approximate public views of the proposed 350 Eighth Street project from two public vantage points: one from Eighth Street just south of Harrison Street, and one from Harrison Street near the corner of Ninth Street. These simulations are presented in **Figures 4.B-8** and **4.B-9** on pp. 4.B-24 and 4.B-25, respectively, and are described below.

Eighth Street South of Harrison Street

Under existing conditions, short-range public views of the 350 Eighth Street project site from Eighth Street south of Harrison Street include the parking lot, storage sheds, light poles and, depending on the time of day, rows of parked buses. The 350 Eighth Street project site appears underused and is characterized by its abundance of unused space and the break it forms in the Harrison Street street wall. Due to the relative emptiness of the 350 Eighth Street project site, structures on the surrounding blocks can be easily viewed through the site.

With the implementation of the 350 Eighth Street project, views along Harrison and Eighth Streets would be noticeably different. Specifically, the views would be dominated by the proposed structures along both the Harrison Street and Eighth Street façades (Buildings One and Two). These structures would be six stories in height and would be constructed in a contemporary architectural style. The façades of the individual buildings would be differentiated such that the buildings would appear distinct and separate from one another. The proposed structures would be noticeably taller than those on the surrounding blocks. Furthermore, some of the taller towers that are currently visible in the Downtown area to the north of the 350 Eighth Street project site would be blocked by the new buildings. However, such views toward Downtown are not considered scenic, and the change would not be so drastic as to make the new structures appear out of scale with the general look and feel of the surrounding neighborhood. Based on



Existing Conditions



View with 350 Eighth Street project site

SOURCE: Kava Massih Architects

2008.0877E and 2007.1035E: Western SoMa Community Plan,
Rezoning of Adjacent Parcels, and 350 Eighth Street Project

Figure 4.B-8

Visual Simulation of the Proposed 350 Eighth Street Project
From Eighth Street South of Harrison Street



Existing Conditions



View with 350 Eighth Street project site

SOURCE: Kava Massih Architects

2008.0877E and 2007.1035E: Western SoMa Community Plan,
Rezoning of Adjacent Parcels, and 350 Eighth Street Project

Figure 4.B-9

Visual Simulation of the Proposed 350 Eighth Street Project
From Ninth and Harrison Streets

the above analysis, changes to public views from Eighth Street south of Harrison Street would not be considered significant and adverse with the implementation of the proposed 350 Eighth Street project, as no adverse effects on scenic views would occur.

Harrison Street Near the Corner of Ninth Street

Currently, public views toward the 350 Eighth Street project site from Harrison Street near the corner of Ninth Street are mostly blocked by the existing one-story building on the corner of Harrison and Ninth Streets. However, limited portions of the site containing the paved parking areas can be seen. The “Existing Conditions” photo in Figure 4.B-9 captures the 350 Eighth Street project site during a time when it was occupied by Golden Gate Transit buses. Compared to the aforementioned building in the foreground, as well as the two-story building just behind it and the billboard on the site’s southwestern corner, the 350 Eighth Street project site, as viewed from this location, is a minor feature in the urban landscape. As in the image described above, it is more noticeable for its absence of buildings than for any other characteristic. Some Downtown buildings can be partially seen in this view in the background, although many of these are blocked by the billboard on the 350 Eighth Street project site. This view, like the one discussed above, is not considered scenic for purposes of CEQA.

With implementation of the 350 Eighth Street project, the new six-story buildings (Buildings One, Three, and Four) would form a street wall along Gordon Street, blocking the partial views of downtown buildings currently available in the background. The structures would be considerably taller than the one-story building just across the alleyway. As in the bottom image of Figure 4.B-9 (view with the 350 Eighth Street project), the new structures would appear contemporary in design and would be articulated in a way that would differentiate each building. The new buildings would substantially alter the public views currently experienced on this block. However, these views are not considered scenic, and impacts of the 350 Eighth Street project on scenic views would be less than significant.

In summary, while the 350 Eighth Street project would develop buildings that would be noticeably larger and different from the existing structures on the 350 Eighth Street project site, changes to scenic views and vistas would not be considered adverse, since the views in the project vicinity are not considered scenic for the purposes of CEQA and, moreover, the proposed changes would not substantially degrade the quality of views currently experienced by the public.

Mitigation: None required.

Impact AE-5: The proposed 350 Eighth Street project would not substantially degrade the visual character of the 350 Eighth Street project site and its surroundings nor damage any important scenic resources. (Less than Significant)

As discussed in Chapter 2, Project Description, the proposed 350 Eighth Street project would result in the removal of the three one-and-a-half-story sheds and their replacement with a mixed-use residential, commercial, and light industrial/arts-related development that would span the entire project site.

As noted under “Environmental Setting,” above, no scenic resources exist on the project site or in the immediate vicinity, as defined within the context of CEQA. Therefore, the implementation of the proposed 350 Eighth Street project would not result in damage to any important scenic resources.

As discussed in Chapter 2, Project Description, the proposed 350 Eighth Street project would include seven buildings ranging from four to six stories, or 53 to 65 feet tall, distributed among an open space network including new alleys, courtyards, and publicly accessible plazas. Of the new structures, two near the center of the project site (Buildings Six and Seven) would be six-story residential buildings, and two along Gordon and Ringold Alleys (Buildings Four, and Five) would be four to five stories tall and would provide residential units above ground-floor light industrial/arts-related space. A four-level commercial building would be constructed at the corner of Gordon and Harrison Streets (Building Three) and two six-story residential-above-ground-floor-commercial or community-space buildings would be constructed along Harrison and Eighth Streets (Buildings One and Two). Off-street parking would be provided primarily below grade. Pedestrian access to the project site would be available on all sides. A driveway would encircle the residential uses in the middle of the block and serve as the main access route for delivery trucks and drop-offs.

The proposed 350 Eighth Street project would be constructed in a contemporary architectural style. Based on the plans submitted by the applicant (dated September 30, 2011), the buildings would be differentiated according to their proposed uses and would be of different heights and volumes, with setbacks above the fourth story along Gordon and Ringold Streets. The commercial and mixed-use structures along Harrison and Eighth Streets would be about six stories in height and would be broken up into several buildings, with pedestrian passageways connecting the buildings. The residential uses in the center of the block would be constructed within four volumes, all of irregular shape.

As currently proposed, the buildings that would comprise the 350 Eighth Street project would be finished with a variety of exterior materials that would divide the façades both vertically and horizontally into smaller visual elements. Exterior materials would include cement plaster (stucco), wood siding, painted metal panels, and various forms of glazing, including areas of glass curtain wall (glass surface covering structural framing) on all four street façades, translucent glass covering the ground floor at the corner of Eighth and Harrison Streets, and fritted (frosted or otherwise etched or marked) glass that would clad the commercial building at the corner of Harrison and Gordon Streets. The proposed 350 Eighth Street project would include street trees, in accordance with Planning Code requirements, and landscaping around the internal roadway and also within courtyards in the center of the project site.

The proposed structures, at four to six stories in height (53 to 65 feet tall), would be up to 30 feet taller than most of the surrounding buildings. For instance, the structures along Ringold and Gordon Streets (Buildings Three, Four, and Five) would form a three- to four-story-tall street wall across the street from lots that currently contain one- to three-story buildings. Due to the relatively narrow width of both alleys, this could create a crowding effect and may block some sunlight. The proposed structures would be noticeably larger and taller than the buildings in the immediate vicinity, although the separation of uses into several buildings and the articulations and setbacks of those buildings along primary façade would help to break up the project into smaller components. The increased heights along Eighth and Harrison Streets would also result in buildings that are taller than the structures across these streets. However, the

effect here would be less pronounced because it would be tempered by the fact that these streets are much wider and, thus, the larger buildings would be in better proportion with the wide arterials.

When viewed on a larger scale, the proposed 350 Eighth Street structures, although taller and more massive than their immediate neighbors (see bottom images in Figures 4.B-9 and 4.B-10), would be generally consistent with the overall range in the scale of building heights and volumes currently found throughout the Project Area. Furthermore, they would be consistent with the contemporary designs that can be found throughout the Project Area, particularly those of larger residential and mixed-use buildings. As discussed under “Environmental Setting,” above, the Project Area contains a number of buildings ranging from three to five stories in height, as well as a few that are as tall as six stories. Many of the taller structures are more recent residential and mixed-use developments, located along major streets. An increase in building height and massing on the project site would not, by itself, result in a significant adverse change with regard to visual quality. The architectural style of the proposed building also would not result in a significant adverse visual impact, due to the variation in styles that already exist in the Project Area.

With implementation of the proposed 350 Eighth Street project, street-level uses on the 350 Eighth Street project site, and particularly along Eighth and Harrison Streets, would intensify and would generate additional pedestrian traffic (“eyes on the street”) as compared to the current conditions. Given the location of the site in an area with a range of building heights, scales, and architectural character, the visual change associated with the proposed 350 Eighth Street project would not substantially degrade the existing visual character of the area.

The proposed 350 Eighth Street project would not remove any existing trees that are planted adjacent to the 350 Eighth Street project site. Additional street trees and landscaping would be introduced along the 350 Eighth Street project site’s perimeter and extensively throughout the courtyard and central areas. The newer plantings would be relatively small and would have little foliage at the time of planting but would mature over time. The proposed vegetation would likely have a beneficial effect on the existing visual character of the 350 Eighth Street project site.

In summary, the new buildings and the increase in development density and height on the 350 Eighth Street project site, while noticeable within the immediately surrounding context (see discussion of visual simulations under Impact AE-4, above), would not substantially degrade the existing visual character or scenic resources of the site or its surroundings. In addition, the contemporary character of the buildings’ architectural massing and materials, combined with the proposed setbacks and different heights and volumes of buildings, would help to break up the otherwise large development into smaller differentiated components, blending the 350 Eighth Street project into the dense urban aesthetic character experienced throughout the vicinity. As such, the 350 Eighth Street project would not substantially damage any scenic resources or substantially degrade the existing visual character of the 350 Eighth Street project site, and this impact would be less than significant.

Mitigation: None required.

Impact AE-6: The proposed 350 Eighth Street project would not create new sources of substantial light and glare that would adversely affect day or nighttime views in the area or substantially affect other people or properties. (Less than Significant)

Compared to existing conditions, the 350 Eighth Street project would generally make the 350 Eighth Street project site more noticeable at night because it would introduce larger buildings and more residential- and commercial-related lighting and outdoor lighting to this site. This lighting would be visible through windows and at building entries. Exterior lighting at building entryways would be positioned to minimize glare, and lighting would not be in excess of that commonly found in urban areas. The 350 Eighth Street project would comply with Planning Commission Resolution 9212, which prohibits the use of mirrored or reflective glass. Therefore, the 350 Eighth Street project would not create new sources of substantial light and glare in a way that would adversely affect day or nighttime views in the area or substantially affect other people or properties.

Mitigation: None required.

Cumulative Impacts

Impact C-AE: The implementation of the Proposed Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute considerably to a significant cumulative impact on visual resources. (Less than Significant)

The Project Area and the neighborhoods immediately surrounding it (particularly East SoMa), serve as the geographical context for cumulative impact analysis for visual quality. Based on the program-level analysis for the Draft Plan and Rezoning of Adjacent Parcels provided above, the anticipated area-wide changes to visual character and quality of views within the Project Area would be considered less than significant.

A number of other plans and projects, ranging in use and size, are proposed or are being constructed within this general area. Among the larger projects that are anticipated in the Project Area vicinity are the *Central Corridor Plan*, the 5M Project, Moscone East, and the 801 Brannan Street/One Henry Adams Street Project, which are described in Chapter 4 Overview. These projects would be expected to intensify the blocks on which they are constructed, which are outside of the Project Area boundaries, with the exception of the *Central Corridor Plan*, whose area overlaps with that of the Project Area. However, these individual projects would not be expected to substantially degrade the visual quality and views available throughout the general vicinity, since the city's Downtown and areas nearby are considered appropriate locations for large-scale developments of this type. Over time, other smaller projects would also be constructed in the Project Area vicinity, and could result in larger buildings throughout the Project Area as compared to what currently exists. However, the few anticipated larger projects, in combination with other construction that would be expected to occur over time, would not be anticipated to result in significant cumulative impacts related to visual quality and views. Views toward these larger buildings from within the Project Area would not be substantially different from the types of views currently experienced.

As discussed above, the Project Area contains a range of buildings, sizes, and styles, and the same could be said of the surrounding areas. The Downtown and East SoMa neighborhoods, in particular, contain an even wider range of building styles and sizes than Western SoMa, with contemporary high-rise buildings sometimes towering over the adjacent one-story industrial structures from early 20th century. Additional projects, including new construction, expansion of existing uses, and rehabilitation of existing buildings, continually occurs throughout the nearby neighborhoods. However, such construction generally would not demonstrably alter the views of the Project Area (including the Adjacent Parcels), nor of the visual quality of the larger area on a cumulative level. This is due to architectural variety that is common and accepted throughout this part of the city. Thus, neither the Draft Plan, with its relatively modest proposed changes to height and bulk limits, nor the changes proposed in the Rezoning of Adjacent Parcels along the northern edge of the Draft Plan Area, would contribute considerably to any adverse cumulatively significant visual changes in the area.

The 350 Eighth Street project, combined with other projects in the area, would also result in a less-than-significant cumulative impact on visual quality. The 350 Eighth Street project would not be of sufficient size or visual prominence that its combination (in views) with any other potential nearby projects would result in demonstrably diminished views. Furthermore, other proposed projects in the vicinity of the 350 Eighth Street project would be required to undergo environmental review to ensure that any visual impacts are mitigated to the extent feasible. Given that the 350 Eighth Street project and other potential projects in the area would be developed in an urban environment (as discussed in the paragraph above), the 350 Eighth Street project would not contribute considerably to any potential cumulative visual quality impacts in the vicinity.

Based on the above, the implementation of the Proposed Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would result in a less-than-significant cumulative impact on visual resources.

Mitigation: None required.

4.C. Population and Housing

This section describes existing conditions and trends for population and housing in the Project Area and sets the Project Area in a city and regional context. This section also provides discussion of business activity and jobs in the Project Area. In addition, this section analyzes the impacts of the Proposed Project on the ability of San Francisco to accommodate population and employment and discusses impacts on housing demand and supply; affordable housing; residential, business, and worker displacement; and job opportunities.

Environmental Setting

Citywide and Regional Setting

Population and Housing

The City's official housing inventory counts almost 368,500 housing units in 2010, an increase of more than 23,500 units from April 2000 through 2010.¹ The number of people living in the city has increased by 10 percent since 2000. California Department of Finance estimates show about 856,000 people living in San Francisco—an increase of approximately 79,000 people from April 2000 through January 1, 2010. The increases are attributable to natural increase and high levels of net foreign immigration coupled with relatively low levels of domestic out-migration.² During this period, the city's population exceeded its prior peak of approximately 780,000 residents recorded in 1951.³

An increase in the city's population, consistent with the increased housing supply, represents a change from conditions of the 1980s and 1990s. During those decades, the growth of the city's population was not matched by an increase in housing supply. Therefore, population growth resulted in increases in the number of people living in existing housing. By contrast, average household size since 2000 has remained relatively constant in the range of 2.3 to 2.4 persons per household.

Jobs and Business Activity

There were about 576,000 people working in San Francisco in 2009, a substantial drop from approximately 605,000 in 2008.⁴ This estimate measures workers by place of work and includes full-time

¹ San Francisco Planning Department, *San Francisco Housing Inventory 2010*, April 2011. Available on the internet at: http://www.sf-planning.org/ftp/files/publications_reports/2010_Housing_Inventory_Report.pdf; reviewed April 23, 2012.

² State of California, Department of Finance, *Population Estimates and Components of Change by County, July 1, 2000-2010*, December 2010.

³ The U.S. Census also prepares annual official population estimates. Until 2006, the Census estimated that San Francisco's population had steadily *decreased* from 2000 levels, resulting in a large gap between the state and federal population estimates. In 2008, the City and County of San Francisco filed a challenge to the 2007 Census estimates. That challenge was accepted, and, as of December 2008, the Census Bureau's revised 7/1/2007 population estimate for San Francisco stood at 799,185—an increase of approximately 34,000 over the prior estimate. The most recent Census estimates (for July 1, 2009) show San Francisco's population at 813,358.

⁴ These estimates of employment by place of work count part-time and full-time jobs equally. People who hold more than one job may be counted more than once.

and part-time wage and salary employment, as well as the self-employed.⁵ Wage and salary jobs in San Francisco totaled about 524,000 in 2009. The self-employed (and a relatively small number of unpaid family workers) account for about 9 percent of total jobs in the city. Although the city's role as a place of work in the region has diminished over time, San Francisco is unique in the region as a place of highly concentrated, high-density business activity. Other counties may claim more total employment, but that employment is dispersed among smaller downtowns, BART station areas, larger educational institutions and medical centers, and suburban business parks.

There have been substantial fluctuations in the level of employment in San Francisco and elsewhere in the Bay Area over the past decade. The Bay Area and San Francisco economies experienced strong growth through 2000. The subsequent job loss in San Francisco that occurred as a result of the economic downturn that began in 2008 was more severe than the job loss in most other parts of the region, with the exception of Santa Clara County.

The economic downturn of 2008, referred to by some as the Great Recession, has resulted in persistent high unemployment in the San Francisco—annual rates of 9 and 10 percent through 2009 and 2010, although both federal and state data show the rate dropping below 9 percent more recently, and the California Employment Development Department reports a rate of 8.1 percent in March 2012. The unemployment rate measures people who do not have jobs as a percentage of people actively looking for work. Additional evidence of the drop in economic activity in the city is the decrease in the labor force—the number of people actively looking for work.

Housing Market Conditions and Housing Affordability

Housing prices in San Francisco are among the highest in the Bay Area region and consistently rank among the highest in the nation. In 2010, the median price for houses sold in San Francisco was approximately \$661,000, about \$248,500 (60 percent) higher than the regional median price of about \$412,000. Median house prices in San Francisco had been consistently about 20 to 30 percent higher than the regional median until 2008 when median prices plummeted elsewhere.

The rental housing market is the largest component of San Francisco's housing market; for most existing residents and newcomers, rents are the most important housing market indicator. After falling from the year 2000 peak (\$2,750 average monthly rent for a two-bedroom apartment), average rents citywide returned to those 2000 levels in 2007 and have held steady since then.⁶ With prices and rents this high, many people share housing and/or look for second jobs, and households take on substantial housing cost

⁵ The estimate of total employment by place of work including the self-employed is based on data from the U.S. Census Bureau American Community Survey (ACS). That data source provides estimates of the percentage of workers, by place of work, who are private and non-profit wage and salary workers (including the self-employed in their own incorporated businesses), government workers (local, state, and federal), self-employed workers, and unpaid family workers. The latter two categories are not covered in employment estimates from the State of California Employment Development Department (EDD). The state data measure wage and salary employment by place of work and do not include the self-employed, a significant number in San Francisco, or unpaid family workers or private household workers. The more complete estimate of jobs by place of work combines the EDD data with estimates derived from the percentages in the ACS for San Francisco (2007-2009 3-year estimates and 2009 1-year estimates).

⁶ San Francisco Planning Department, *San Francisco Housing Inventory 2010*, April 2011. Available on the internet at: http://www.sf-planning.org/ftp/files/publications_reports/2010_Housing_Inventory_Report.pdf; reviewed April 23, 2012.

burdens to live in San Francisco. Housing cost burdens in San Francisco are particularly high for lower-income newcomers and new households, such as immigrants, young entry-level workers, students, and artists, as well as for existing residents who become unemployed or find themselves in the housing market not by choice but because they are displaced from their household and former housing unit.

Housing Needs

In the face of persistent strong demand from the many different types of people who want to live in San Francisco, increasing the housing supply and making housing more affordable have been key concerns of the City's policy-makers for decades. Affordable housing production in San Francisco is supported by funding from the Inclusionary Affordable Housing Program, the Jobs-Housing Linkage Program, and the commitment of a robust non-profit housing development sector. Just under 30 percent of the new housing units added in San Francisco from 2006 to 2010 were affordable units, meaning the units are rented or owned at prices affordable to households with low or moderate incomes (as defined by income limits determined by United States Department of Housing and Urban Development for the San Francisco Market Area). Almost 60 percent of these units were built for the lowest ends of the affordability spectrum—households at or below 50 percent of median household income (or less than 50 percent of Area Mean Income, or AMI). As of December 2010, another 1,100 affordable units were under construction. In addition to this supply of newly constructed affordable units, 443 units of permanently affordable housing were added to the city's supply during the 2006 to 2010 period through acquisition and rehabilitation of existing housing by non-profit housing organizations to create housing for low- and very-low income persons.⁷

In spite of this production record, San Francisco has not met the quantified housing goals established by the California Department of Housing and Community Development (HCD) and the Association of Bay Area Governments (ABAG) as part of its Regional Housing Needs Allocation (RHNA).⁸ **Table 4.C-1**, below, shows how affordable housing production in San Francisco over the 1999 to 2006 period tracked with the housing need goals set for the city for that period by HCD and ABAG.⁹ As a consequence of relatively high rates of housing production in the city over this period, San Francisco was close to meeting the *overall* housing production goal. However, the under-production of housing affordable to moderate-income households (at around 100 percent of median income—just below the threshold where market-rate housing is affordable) stands out as a key gap in recent production statistics.

⁷ San Francisco Planning Department, *San Francisco Housing Inventory 2010*, April 2011. Available on the internet at: http://www.sf-planning.org/ftp/files/publications_reports/2010_Housing_Inventory_Report.pdf; reviewed April 23, 2012.

⁸ The RHNA process is a state mandate, devised to address the need for and planning of housing across a range of affordability and in all communities throughout the state. Available online at: <http://www.abag.ca.gov/planning/pdfs/SFHousingNeedsPlan.pdf>, accessed April 19, 2012.

⁹ Current housing goals for the 2007 to June 2014 period are described in the discussion of the *San Francisco General Plan* Housing Element under "Regulatory Setting," below.

TABLE 4.C-1
HOUSING PRODUCTION TARGETS, 1999-JUNE 2006 AND ACTUAL PRODUCTION, 1999-2006

Income Category	ABAG/HCD Regional Housing Needs Allocation (RHNA) Production Goals 1999-June 2006		Actual Housing Production 1999-2006	
	No. of Units	% of Total	No. of Units	% of RHND Goal
Very Low (< 50% AMI)	5,244	25.7%	4,342	82.8%
Low (50-79% AMI)	2,126	10.4%	1,113	52.4%
Moderate (80-120% AMI)	5,639	27.7%	725	12.9%
Market (over 120% AMI)	7,363	36.1%	11,293	153.4%
Totals	20,372	100.0%	17,473	85.8%

AMI = Area Mean Income; ABAG = Association of Bay Area Governments; HCD = California Department of Housing and Community Development; RHNA = Regional Housing Needs Allocation

SOURCE: San Francisco Planning Department, *Draft Housing Element Part I: Data and Needs Analysis*, Draft for Adoption, Revised February 2011.

Project Area Setting

Population and Housing

The Project Area contained approximately 3,175 households and 7,000 persons in 2008, according to the San Francisco Planning Department estimates (see **Table 4.C-2**, below). This accounts for less than one percent of the city's household population.

TABLE 4.C-2
EXISTING POPULATION AND EMPLOYMENT IN THE PROJECT AREA ^a

	2008 ^b
Number of Households^c	3,176
Household Population	7,000
Number of Jobs by Land Use Category	
Management/ Information/Professional Services	6,485
Retail/Entertainment	2,695
Visitor Lodging	270
Medical and Health Services	95
Cultural/Institutional/Educational	1,810
Production/Distribution/Repair (PDR)	6,305
Total Number of Jobs	17,655

^a As explained in Chapter 1, Introduction, of this EIR, the "Project Area" includes both the *Western SoMa Community Plan* Area and the Adjacent Parcels. Separate population and employment estimates are not provided for the Adjacent Parcels because (1) accurate estimates cannot be provided for an area as small as the Adjacent Parcels, and (2) the Adjacent Parcels are within the same Traffic Analysis Zones (TAZs) as the Draft Plan Area, and the TAZ is the forecasting unit.

^b The household population listed in the table does not include about 1,800 people living in group quarters. This population—largely consisting of inmates of the County Jail—is not expected to change as a result of the Proposed Project.

^c The 2008 residential vacancy is estimated at 6 percent. The San Francisco Planning Department's Western SoMa forecasting methodology assumes a 4-percent residential vacancy factor applied to the estimated increase in housing units.

SOURCE: San Francisco Planning Department, 2012.

Characteristics of the Population

According to the 2000 Census, the Project Area population exhibits the following characteristics:

- In 2000, most of the people living in Project Area were working aged adults. Compared to citywide averages, the percentages of children under 18 and the percentage of older people—people aged 65 and older—were low.
- The proportion of the Project Area resident population that was foreign-born is similar to that for the city as a whole. The foreign-born in the Project Area were less likely than the foreign-born elsewhere in the city to have attained citizenship status, however.
- Residents of the Project Area were somewhat more likely than residents elsewhere in the city to be native English speakers, and, as in the rest of the city, about 25 percent of the population was linguistically isolated (living in households where the primary language is not English and no person aged 14 or over speaks English at least “very well”). Compared to conditions in the rest of the city, there was a bit more of a mix of languages other than English in the Project Area — proportionally more speakers of Spanish and other languages and proportionally fewer speaking Asian and Pacific Island languages.
- The full spectrum of education levels was represented among adults living in the Project Area. Compared to citywide averages, Project Area residents were less likely to have finished college or have an advanced degree, however.

Because the Adjacent Parcels contain very little residential use and no residents occupy the 350 Eighth Street project site, the above characteristics apply mainly to the *Western SoMa Community Plan Area*.

Characteristics of Households and Housing

According to the 2000 Census, the Project Area households and housing exhibit the following characteristics:

- Housing in the Project Area represented less than 1 percent of the city’s housing stock. The residential enclaves in the *Western SoMa Community Plan Area* were home to households that were not typical of the overall mix of household types in the city.
- Single-person households were by far the predominant household type in the Project Area, accounting for approximately 60 percent of all households. Citywide, only 40 percent of households were single-person households.
- Families with children (both married-couple families and single-parent families) were the smallest household group in the Project Area, with each group representing only about 5 percent of all households. Other families without children were also a proportionally lower share of the total in the Project Area compared to citywide patterns.
- Other non-family households (two or more unrelated people living together) were well-represented in the Project Area.
- Most of San Francisco’s households were renters, and the proportion of renter-occupied housing was even higher in the Project Area, where, in 2000, almost 80 percent of occupied units were rental units.

Because the Adjacent Parcels contain very few households and because no households exist on the 350 Eighth Street project site, the above characteristics apply mainly to the Draft Plan Area.

Growth Anticipated in Local and Regional Plans

The population and employment growth accommodated by the Proposed Project is incorporated in ABAG's regional projections, which, since 2003, have been based on policy assumptions that include more infill in the region's central cities. Together with the other Eastern Neighborhoods, nearby Downtown/Van Ness/Geary, Market & Octavia, and nine other planning areas, San Francisco designated Draft Plan Area, which makes up the majority of the Project Area, as a Priority Development Area (PDA)—an infill location served by transit and recognized by ABAG, the Metropolitan Transportation Commission (MTC), and the Bay Area Air Quality Management District (BAAQMD)—where compact land development is promoted and supported by investments in community improvements and infrastructure. According to ABAG's *Projections 2009*, the Bay Area is expected to gain nearly 1.4 million residents by 2030, reaching a total population of 8.7 million, and gain about 1.25 million jobs, for total employment of 4.74 million.

Business and Employment

Considerably more people work in the Project Area than live there.¹⁰ In 2008, about 17,660 jobs existed in the Project Area—just under 3 percent of total employment in San Francisco.

The mix of types of businesses and jobs in the Project Area reflects its specialized function in San Francisco economic geography in addition to its location on the edge of the large downtown area. In fact, until rezoning under the *Downtown Plan* in the mid-1980s, much of the Project Area had been included in the downtown C-3 zoning districts. Office employment, represented by the Management, Information, and Professional Services category, is the dominant type of business activity in the Project Area, as it is in the city overall. Office jobs accounted for approximately 37 percent of all jobs within the Project Area in 2008. This category includes what are traditionally considered office jobs (law, architecture, engineering, accounting, management, marketing, advertising, financial, and real estate services, public administration), as well as businesses involved in research, communications, and information processing, including new technology, media, and internet-related companies.

Notably for the Project Area, production, distribution, and repair (PDR) businesses and jobs are the next largest components of Project Area economic activity. PDR jobs accounted for approximately 36 percent of all jobs within the Project Area in 2008. PDR includes a variety of businesses engaged in manufacturing, arts and design, construction, wholesale trade, distribution, transportation, storage, repair, and maintenance. It includes traditional "industrial" activities and repair shops, as well as high-value-added production and distribution activities. Examples of the latter may include custom consumer-goods production, digital media and audio-visual production, internet services, and the production and distribution functions of telecommunications, wireless communications, health care, and biomedical technology firms.

¹⁰ This subsection describes business activity and jobs by place of work. Some of the businesses in the Project Area employ people living in San Francisco and living in the Project Area. The labor pool of workers by place of residence is described in the preceding subsection.

Retail activity also claims a relatively high share of total employment in the Project Area (15 percent of all jobs in 2008). In addition, the Project Area is home to numerous clubs, entertainment venues, and restaurants that serve citywide and visitor markets. There is a sizable component of cultural and institutional economic activity in the Project Area. This category accounts for 10 percent of total employment, about the same share found in the rest of the city. This diverse classification includes education, health care, social services, visual and performing arts, and advocacy organizations, including much of the non-profit sector. The establishments located in the Project Area include schools, as well as smaller performance and exhibit venues, and social services and other non-profit entities. (The San Francisco Department of Human Services is located within the Adjacent Parcels.)

Regulatory Setting

San Francisco General Plan

Several of the priority policies of the *San Francisco General Plan* establish the city's interest in affordable housing, economic diversity, and a broad range of employment opportunities for residents. In addition, the *San Francisco General Plan* Commerce and Industry Element sets forth goals for evaluating land use and other public policy directions that guide economic development. Economic vitality, social equity, and environmental quality are the three lenses offered. The element acknowledges that many objectives for commerce and industry are largely beyond the realm of local control—particularly land use control—but puts forth generalized objectives as a framework for guiding public and private decisions related to economic development.

In addition, the Housing Element of the *San Francisco General Plan* describes housing needs and identifies the capacity for new housing in the city based on land supply and development capacity. This element focuses on the city's critical need for affordable housing. The Housing Element establishes goals for housing production as well as policies related to mitigating the impacts of growth on the housing market that are relevant to evaluation of the Proposed Project.

Housing Needs Allocation

As noted above, San Francisco's official quantified targets for addressing housing needs are provided by ABAG, in coordination with the HCD, as part of the Regional Housing Needs Allocation. The RHNA is required by state law to promote the state interest in increasing housing supply, increasing the mix of housing types and affordability in all jurisdictions, facilitating infill development and efficient development patterns, protecting environmental resources, and reducing inter-regional commuting. The needs are defined in terms of housing market factors: accommodating projected demand (due to household growth, employment growth, and the need to turn commuters into residents); increasing the vacancy rate to provide more choice and less upward pressure on prices and rents; and increasing the supply of affordable housing options. ABAG allocates regional total housing needs among jurisdictions based on factors that consider existing employment, employment growth, household growth, and the availability of transit. Regionwide income distributions complete the allocation by household income category.

San Francisco's Housing Needs Allocation Goal

The RHNP for the 2007-2014 period was published in June 2008, and San Francisco's allocation is incorporated in the *San Francisco General Plan Housing Element 2009* (adopted March 2011). The housing allocation is expressed not only as an overall housing production target to alleviate tight housing market conditions and reduce long-distance commuting, but, more importantly, as separate targets for production of housing affordable to various household income categories.

San Francisco's 2007-2014 goal is just over 31,000 units—almost 15 percent of the regional total. This amounts to housing production of about 4,160 units per year. This overall production goal is almost two times what was actually achieved over the last decade of strong housing production in the city. Furthermore, a substantial component of the housing need is for affordable housing production. ABAG estimates that 60 percent of the production should be affordable to moderate-, low-, and very-low-income households.

Housing Development Capacity

Analysis presented in the *Housing Element 2009* identifies capacity (under existing zoning) for 63,600 new housing units on vacant or underdeveloped sites throughout the city. Almost 60 percent of this capacity is in neighborhood commercial and mixed-use districts, including housing potential under recently adopted area plans: Eastern Neighborhoods, Market & Octavia, Balboa Park, Visitacion Valley, and Rincon Hill. In the downtown C-3 districts, the residential development capacity under existing zoning totals 1,100 units. In addition, there is remaining capacity for another 11,000 units in programmed redevelopment areas: Mission Bay, Hunters Point Shipyard Phase I, and Treasure Island.¹¹ This estimate of development capacity for a total of 75,700 units of housing under existing zoning does not include the parcels in the proposed residential development pipeline. Including 6,800 units under construction, proposed residential development amounted to another 50,200 units as of the fourth quarter of 2008.¹²

Ongoing community planning efforts in San Francisco aim to expand this residential development potential, and some of the pipeline projects under review are in anticipation of such planning efforts. The *Housing Element 2009* estimates another 28,800 units could be provided under rezoning proposed in such areas as Executive Park, Park Merced, India Basin, the Transit Center District, Hunters Point Shipyard, Candlestick Point, and Treasure Island. The *Housing Element 2009* identifies potential for about 1,500 additional units in the Project Area under the Proposed Project.¹³

Finally, housing could be added on some surplus sites owned by public agencies, amounting to only about 57 acres of land in total. The *Housing Element 2009* describes planning efforts that could add another 4,000 units to the city's residential development capacity. These units would be on sites owned by the San Francisco Municipal Transportation Agency, the San Francisco Community College District, and the San Francisco Public Utilities Commission, in addition to the Central Freeway parcels.¹⁴

¹¹ San Francisco Planning Department, *Housing Element 2009 Part I: Data and Needs Analysis*, March 2011, pp. 1.62 – 1.67.

¹² This is the estimate presented in the *Housing Element 2009* (March 2011), Table I-65, page 1.94.

¹³ San Francisco Planning Department, *Housing Element 2009 Part I: Data and Needs Analysis*, March 2011, Table I-66, page 1.95.

¹⁴ San Francisco Planning Department, *Housing Element 2009 Part I: Data and Needs Analysis*, March 2011, pp. 1.96 – 1.98. Available online at: http://housingelement2009.sfplanning.org/docs/Housing_Element_Part_I_Data_Needs_Assmt_CPC_Adopted.pdf, accessed April 19, 2012.

Jobs-Housing Linkage Program

Policy 1.9 of the *Housing Element 2009* calls for enforcement and monitoring of the Jobs-Housing Linkage Program requiring that new commercial development in the city provide affordable housing or pay an in-lieu fee to meet the housing need attributable to employment growth and new commercial development, particularly the demand for new housing affordable to low- and moderate- income households.¹⁵ The Jobs-Housing Linkage Program is codified in Section 413 *et seq.* of the San Francisco Planning Code.

The current Jobs-Housing Linkage Program applies to the following types of non-residential development: office, research and development, retail, entertainment; hotel, PDR, and small enterprise workspace. Across all uses, the program does not apply to the first 25,000 square feet of net additional development.

Inclusionary Affordable Housing Program / Affordable Housing Fee

Contributing to the production of housing affordable to low- and moderate-income households as a function of producing new market-rate housing is a zoning requirement in San Francisco. The Inclusionary Affordable Housing Program is one of several local resources applied in San Francisco to increase the supply of affordable housing, as called for in the *Housing Element 2009* (Policy 7.1, “Expand the financial resources available for permanently affordable housing, especially permanent sources”¹⁶). The Inclusionary Affordable Housing Program is codified in Section 415 *et seq.* of the San Francisco Planning Code.

The year 2006 saw a substantial review and expansion of the City’s Inclusionary Affordable Housing Program, and the program was clarified in 2010 to primarily require developers of market-rate housing to pay an affordable housing fee to mitigate the impacts of demand for affordable housing. The program applies to projects that develop five or more units of market-rate housing. The fee amount is the difference between the affordable sales price and the cost of developing a comparable housing unit (the “affordability gap” established annually by the Mayor’s Office of Housing) multiplied by (generally) 20 percent of the number of market-rate units proposed.

Recent changes to the Inclusionary Affordable Housing Program limit the ability of project applicants to satisfy the requirement by providing on- or off-site affordable units. To qualify for compliance through the construction of on- or off-site units, developers must develop permanently affordable ownership units, or show direct public financial contribution, zoning changes or density bonus assistance, or the provisions of a development agreement.¹⁷

¹⁵ San Francisco Planning Department, *Housing Element 2009 Part II: Objectives and Policies*, March 2011, pp. 11-12. Available online at: http://housingelement2009.sfplanning.org/docs/Housing_Element_Part_I_Data_Needs_Assmt_CPC_Adopted.pdf, accessed April 19, 2012.

¹⁶ San Francisco Planning Department, *Housing Element 2009 Part II: Objectives and Policies*, March 2011, page 28.

¹⁷ San Francisco Planning Department, Memorandum to Applicants Subject to Planning Code Section 415: Inclusionary Affordable Housing Program, January 24, 2011.

Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR, the Proposed Project would result in a significant impact with respect to population and housing if it would:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
- Displace substantial numbers of existing housing units or create demand for additional housing, necessitating the construction of replacement housing; or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

Approach to Analysis

The impact analysis for population and housing evaluates the changes anticipated in population, housing and employment growth in the Project Area, as compared to the baseline (2008) conditions. Both the baseline and projection numbers were developed by the San Francisco Planning Department. The anticipated growth is based on development capacity and development policy represented by the Proposed Project in the context of Project Area and citywide growth expectations.

Approach to Analysis of Project Components

It is important to note that, throughout the impact discussion, existing and projected numbers for the Draft Plan and Rezoning of Adjacent Parcels are combined. Separate population and employment estimates are not provided for the Adjacent Parcels because (1) accurate estimates cannot be provided for an area as small as the Adjacent Parcels, which cannot be easily isolated and (2) the Adjacent Parcels are within the same Traffic Analysis Zones (TAZs) as the Draft Plan Area, and the TAZ is the forecasting unit for population, housing, and jobs.

For the 350 Eighth Street project, the analysis focuses on increases in population, housing, and jobs that would occur as a result of this project. However, the 350 Eighth Street project is also analyzed as part of the Draft Plan and Rezoning of Adjacent Parcels. This is because the population projections prepared for the Draft Plan and Rezoning of Adjacent Parcels also account for the growth assumed on the 350 Eighth Street project site.

Environmental Effects Resulting from Economic and Social Changes

CEQA *Guidelines* Section 15064(e) states: “Economic and social changes resulting from a project shall not be treated as significant effects on the environment. Economic or social changes may be used, however, to determine that a physical change shall be regarded as a significant effect on the environment.”

Adoption of the Draft Plan and Rezoning of Adjacent Parcels would not, in themselves, result in direct physical changes. New development encouraged by the Draft Plan and Rezoning of Adjacent Parcels would be an indirect physical change that would accommodate population and employment and thereby increase economic activity in the city. The impact analysis in this section addresses the question of whether the physical change indirectly brought about by the Draft Plan and Rezoning of Adjacent Parcels would result in social or economic changes that would be considered substantial, such that the physical changes would be considered significant effects on the environment.

Population and employment growth are considered substantial when they are not anticipated in local plans. The population and employment growth accommodated in the Project Area under the Proposed Project would result in physical changes related to transportation, air quality, noise, and public services and utilities. These types of impacts are analyzed under the other environmental topics in this chapter.

It is also noted that transportation and street network improvements that would be implemented as part of the Draft Plan would not have any impacts on population and housing, as they would not induce substantial population growth in the Project Area nor displace existing housing units or people. For this reason, they are not discussed any further in this section.

Impacts of the Western SoMa Community Plan and Rezoning of Adjacent Parcels (Program-Level Analysis)

Impact PH-1: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would induce substantial population growth, either directly or indirectly. (Less than Significant)

The Draft Plan and the Rezoning of Adjacent Parcels are regulatory programs, not physical development projects; thus, neither would be expected to directly induce substantial population growth. However, both of these components of the Proposed Project could create incentives for new development within the Project Area and could, thus, result in indirect impacts with respect to population growth. Most of the population growth would be attributable to the Draft Plan, since the Draft Plan Area makes up the majority of the Project Area. However, some growth would also be expected to occur on the Adjacent Parcels. It is noted that population and employment estimates are provided for the entire Project Area.

The goals of the Draft Plan relevant to population, housing and employment are to stabilize the neighborhood, meet the needs of existing neighborhood residents and businesses, maintain diversity of uses and the existing scale and density of the neighborhood, limit infill housing opportunities and non-residential development opportunities to selected locations, and mitigate neighborhood impacts of new development. The Rezoning of Adjacent Parcels would rezone 46 parcels proximate to the Draft Plan Area boundary in order to reconcile their use districts with those of the neighboring properties but does not contain any policies or objectives specifically related to population, housing, or employment. Although the Draft Plan as well as the Rezoning of Adjacent Parcels would indirectly result in population growth, this impact would be less than significant for the reasons discussed below.

Population and Housing Growth Projections

Compared to what is allowed under existing zoning, housing development potential would be increased north of Harrison Street with increases in height limits and allowable housing densities along selected streets. In other places north of Harrison, existing Residential Enclave Districts (REDs) would be expanded and new REDs created and, south of Harrison, newly designated REDs would be the only locations where new housing would be allowed. Zoning limitations on large-scale retail development are proposed; no retail development over 25,000 square feet would be allowed in the Draft Plan Area, and new retail use between 10,000 and 25,000 square feet would be limited to areas south of Harrison Street and the few parcels greater than one acre in size north of Harrison Street. Expanded development opportunities for larger office uses are proposed along Townsend Street, and existing limits on office use throughout the Draft Plan Area are proposed to be lifted to encourage smaller office uses as part of the more fine-grained land use mix north of Harrison Street. Several proposed policies would discourage displacement of existing businesses and of existing affordable housing. The Draft Plan would accommodate modest amounts of growth in the Draft Plan Area and would result in retention of uses that might otherwise be displaced.

The Rezoning of Adjacent Parcels would convert Heavy Commercial (C-M)- and Service/Light Industrial/Residential (SLR)-zoned areas to downtown General Commercial (C-3-G) and Eastern Neighborhoods Mixed Use Office (MUO), respectively. The C-3-G district would permit a variety of uses, including retail, offices, hotels, entertainment, clubs and institutions, and high-density residential, while the proposed MUO district would encourage office uses and housing, as well as small-scale light industrial and arts activities, with nighttime entertainment permitted as a conditional use. As noted under “Approach to Analysis,” above, the growth projections attributable to the Rezoning of Adjacent Parcels are included in the overall growth projections for the entire Proposed Project.

Table 4.C-3, below, presents the estimates of households, population, and employment for the Project Area as a whole, inclusive of the Draft Plan, Rezoning of Adjacent Parcels, and 350 Eighth Street project.

Household and Population Projections

New Project Area housing (both in the Draft Plan Area and on the Adjacent Parcels) would accommodate about 2,770 additional households and about 6,336 additional residents. This would almost double the housing and residential population in the Project Area. However, over the 22-year period (2008-2030), the average annual pace of new housing production would be less than the pace that occurred between 2000 and 2008. The projection translates to about 130 units per year; between 2000 and 2008, the pace of new housing development in the area was almost 200 units per year.

Job Projections

Less change is expected under the Proposed Project for business activity and employment in the Project Area. Non-residential development (new construction and reuse) would accommodate a total of about 6,354 additional jobs, a 36 percent increase over 2008 employment levels. Office and retail/entertainment activity would account for 96 percent of the total job growth, with office growth representing nearly 60 percent of the total increase.

**TABLE 4.C-3
EXISTING AND ANTICIPATED HOUSEHOLDS, POPULATION,
AND EMPLOYMENT IN THE PROJECT AREA^a**

	Baseline (2008^b)	Growth over Baseline Due To Proposed Project (2008-2030^c)	Proposed Project Total (2030)	Percent Change from 2008
Households^d	3,176	2,767	5,944	87%
Household Population^e	7,000	6,336	13,336	91%
Housing Units	3,364	2,883	6,247	86%
Jobs by Land Use Category				
Management/ Information/Professional Services	6,485	3,590	10,075	55%
Retail/Entertainment	2,695	2,490	5,185	92%
Visitor Lodging	270	130	400	48%
Medical and Health Services	95	30	125	32%
Cultural/Institutional/Educational	1,805	(45)	1,765	(2%)
Production/Distribution/Repair (PDR)	6,305	150	6,455	2%
Total Jobs	17,655	6,354	24,009	36%

^a As explained in Chapter 1, Introduction, of this EIR, the “Project Area” includes both the *Western SoMa Community Plan* Area and the Adjacent Parcels. Separate population and employment estimates are not provided for the Adjacent Parcels because (1) accurate estimates cannot be provided for an area as small as the Adjacent Parcels, and (2) the Adjacent Parcels are within the same Traffic Analysis Zones (TAZs) as the Draft Plan Area, and the TAZ is the forecasting unit.

^b The household population does not include about 1,800 people living in group quarters. This population—largely consisting of inmates of the County Jail—is not expected to change as a result of the Proposed Project.

^c San Francisco Planning Department estimates.

^d The 2008 residential vacancy is estimated at 6 percent. The San Francisco Planning Department’s *Western SoMa Community Plan* Area forecasting methodology assumes a 4-percent residential vacancy factor applied to the estimated increase in housing units.

^e The San Francisco Planning Department’s forecasting methodology assumes the citywide average household size of 2.29 persons per household for the increase in households in the Project Area. Because *Western SoMa Community Plan* Area households tend to be smaller than the citywide average, this results in a conservative estimate for EIR purposes—in other words, an estimate larger than what would be expected based on the characteristics of typical Project Area households.

SOURCE: San Francisco Planning Department, 2012

New and expanding office businesses are expected to be attracted to the office district proposed along Townsend Street, while smaller office businesses would be attracted to the mixed-use environment north of Harrison Street, including on the Adjacent Parcels. Overall, office business activity would be the source of most of the increase in Project Area jobs.

The increase in residential population and in employment would support new local-serving retail businesses, and the Project Area is expected to retain its role as a hub for entertainment activity in San Francisco, supported by citywide and regional growth. The retail/entertainment sector would see the most change in terms of share of total Project Area employment, increasing from 15 percent of the total in 2008 to 22 percent of the total in 2030, while office employment as a share of Project Area jobs would increase from 37 percent to 42 percent.

PDR business activity would be maintained in the Project Area with modest expansion expected, although the PDR share of total employment would decline as a consequence of the stronger job growth projected for office and retail/entertainment and activities.

Population Growth Impact

The Proposed Project would increase housing development potential in the Project Area as compared to existing conditions. The number of households in the Project Area would increase by approximately 2,770, resulting in a population increase of approximately 6,340. The 2,770 additional households and 6,340 additional residents projected under the Proposed Project constitute growth of approximately 87 percent and 91 percent, respectively, over existing conditions. However, these amounts would be modest in comparison to growth that is already expected in the Project Area, and would not be considered substantial or unanticipated.¹⁸

The population growth in Project Area is about 5 percent of the population growth projected for San Francisco through 2030. While the Proposed Project would result in population growth above existing conditions, and beyond what would be expected under existing zoning, the net addition is not substantial and is not beyond what is targeted in important regional and local policy documents or is assumed in ABAG's regional projections. The Draft Plan and the Rezoning of Adjacent Parcels would focus growth in an area where such growth would be considered appropriate (i.e., in an area that is already fairly densely developed, is well-served by public transit, and is in close proximity to the Downtown). Furthermore, the difference between the housing and population growth expected under the Proposed Project and what would be expected under existing zoning is not large enough to make a difference in total housing and population in San Francisco.¹⁹

Employment Growth and Job Opportunities

The population increase and the concentration of population in the Project Area would increase demand for neighborhood-serving retail and personal services. There would be more retail spending supporting local-serving retail activity in the Project Area and support for higher occupancies of existing space and new neighborhood commercial space. There would be new business opportunities, and some existing businesses would benefit from higher levels of sales. Other existing businesses might be displaced by operations that better serve the new markets. Given the moderate scale of the projected housing and population growth under the Proposed Project, effects of this type are expected to be limited but nevertheless represent positive impacts of housing development and population growth for the Project Area.

The Proposed Project would accommodate an additional 6,354 jobs in the Project Area, including in the Draft Plan Area and on the Adjacent Parcels. The Proposed Project would allow for more office employment growth in this area and less retail employment than is currently accommodated within the

¹⁸ San Francisco Planning Department projections for the existing zoning scenario show increases of 2,566 households and 5,900 residents for the Project Area. The Proposed Project would result in 15 percent more growth, both in terms of households and population, than would be expected under existing zoning.

¹⁹ The net difference in the Project Area housing units under the Proposed Project, as compared to existing zoning, over the 22-year forecast period is approximately 300 units, a number that is immaterial in the context of San Francisco's projected housing and population growth.

Project Area. The Draft Plan's controls would also result in stabilization and expansion of PDR business activity and jobs. Overall, there would be about 36 percent more employment in the Project Area by 2030 as compared to existing conditions, and about 16 percent more employment than would be expected under existing zoning.²⁰ The employment growth in the Project Area under the Proposed Project would represent less than 5 percent of the total employment growth projected for San Francisco through 2030. Thus, while the Proposed Project would result in employment growth as compared to existing conditions, the net addition would not be substantial in light of growth that is already expected to occur in the area, and is not beyond what is targeted in important regional and local policy documents, as described in more detail below. Furthermore, the difference between the employment growth expected under the Proposed Project and existing conditions is not large enough to make a difference in total employment in San Francisco.²¹

The Draft Plan, in particular, would also encourage more office development in the Draft Plan Area by expanding the development potential for larger-scale office and technology-related businesses along Townsend Street near the Caltrain station. More office employment on these blocks, combined with the removal of restrictions on smaller-scale office activity elsewhere in the Draft Plan Area, would encourage economic activity not expected under existing zoning. This additional economic activity would have indirect effects supporting neighborhood-serving retail and entertainment business growth and jobs in the Draft Plan Area. Because the changes in employment over the next 20 years are expected to be relatively small, these effects are likely to be modest at the Draft Plan Area level, though of more importance for the character of development and business activity near the proposed office node along Townsend Street.

Other aspects of the Draft Plan, specifically, would have offsetting impacts for retail business activity and employment. The Draft Plan would prohibit new large-scale retail development throughout the Draft Plan Area and would strictly limit the development of moderate-scale retail uses, in the interests of retaining smaller establishments that are more likely to be non-formula and locally owned. As a result, compared to the projections of employment for the Draft Plan Area under existing zoning, there would be less retail job growth expected with the Draft Plan. The differences are relative small, however—a net difference of about 500 retail jobs by 2030. It is likely that those moderate and larger-scale retail developments would find other location options in San Francisco, subject to the provisions of any restrictions on formula-retail. Alternative location options in the City include Mid-Market, Bayshore Boulevard, Third Street, Mission Bay, and Candlestick Point.

On the Adjacent Parcels, an increase in office, retail, arts-related and entertainment-related jobs would be anticipated over time, based on the types of uses that the proposed rezoning would permit. However, the numbers associated with growth anticipated on Adjacent Parcels are incorporated into the projections of the Project Area as a whole.

²⁰ Planning Department projections for the existing zoning scenario show an overall increase of 4,950 jobs for Western SoMa under existing zoning. Compared to the Proposed Projectless growth of office employment and more growth of retail/entertainment employment. Under existing zoning, there would be more losses of PDR business activity and less opportunity for offsetting PDR growth. Other sectors would see small declines in employment due to competition from housing and larger-scale retail development.

²¹ The net difference in the Project Area jobs under the Proposed Project, as compared to existing zoning, over the 22-year forecast period is about 800 more jobs, a number that is immaterial in the context of San Francisco's projected employment growth.

Growth Anticipated in Local and Regional Plans

As noted above, the population and employment growth accommodated by the Proposed Project (including that related to the Draft Plan and the Rezoning of Adjacent Parcels) is incorporated into ABAG's regional projections, which, since 2003, have been based on policy assumptions that include more infill in the region's central cities. The Draft Plan Area, which makes up the majority of the Project Area, is designated as a PDA—an infill location served by transit and recognized by ABAG, MTC, and the BAAQMD—where compact land development is promoted and supported by investments in community improvements and infrastructure.

The Draft Plan aims for modest growth and moderate intensities of new urban development in the Draft Plan Area, while at the same time trying to satisfy some of the goals articulated in the Commerce & Industry Element of the *San Francisco General Plan*, namely to maintain a diverse economic base, retain viable industrial activity and job opportunities, and maintain a supply of incubator space for new and emerging businesses. At the same time, to meet state and regional goals for a sustainable long-term development pattern, the City has identified locations in other PDAs more suitable for significantly increasing housing supply potential and providing options for more dense office, retail, and visitor-oriented development.

Based on the above, the growth in population, housing, and jobs that would result with the implementation of the Proposed Project is anticipated and accommodated by local and regional plans for the Project Area and would be considered appropriate in this part of the city. Therefore, neither the Draft Plan nor the Rezoning of Adjacent Parcels would be expected induce substantial population growth, either directly or indirectly and this impact would be less than significant.

Mitigation: None required.

Impact PH-2: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would displace a large number of housing units or people or necessitate the construction of replacement housing. (Less than Significant)

The city's Eastern Neighborhoods planning area, of which most of the Project Area was originally a part, includes neighborhoods that recently experienced some of the most extreme increases in housing prices/rents for existing housing. Overcrowding of multi-generational households including families with children and displacement of these and other types of existing households have been among the costs of high demand for housing from people who can afford to pay more for housing and are attracted to these neighborhoods. By adding housing supply potential in these neighborhoods, the Proposed Project would provide a relief valve reducing these housing market pressures. The result would be less residential displacement than otherwise expected.

Displacement impacts for existing residents are not solely a function of housing supply, however. The characteristics of the Proposed Project's zoning districts would influence the mix of uses and the ultimate neighborhood character. That neighborhood character influences housing market orientation and the

desirability of neighborhoods as residential locations. Therefore, separate from the absolute magnitude of new housing supply, there might be spillover impacts of the Proposed Project that influence residential displacement from existing housing.

There are at least two ways to frame potential outcomes of the Proposed Project with respect to population and housing displacement. The proposed policies favoring retention of the existing building stock, including one-for-one replacement of affordable housing lost due to new development (in addition to inclusionary requirements), would be likely to offset wholesale gentrification of existing residential enclaves and displacement of lower income households. On the other hand, improvements to transportation systems, the neighborhood pedestrian environment, and neighborhood open space and cultural amenities would increase the desirability of the Project Area, beyond what would otherwise be expected. If neighborhood housing supply were constrained, this could add housing demand that would result in higher prices and market rents than would be the case assuming no Project Area-wide improvements. In general, however, the displacement impact would be less than significant, as discussed below.

Retention of PDR Business Activity

The Draft Plan and the Rezoning of Adjacent Parcels would reduce the land supply otherwise available under existing zoning for PDR uses. This has the potential to result in eventual displacement of existing PDR business activity and employment from those areas proposed to be rezoned from industrial and service/light industrial districts (M-1, C-M, SLR, SLI zoning) to residential enclave, mixed-use residential, downtown commercial, or mixed-use office districts. Some of the PDR businesses on land not proposed to be zoned for PDR are “adaptive” and would continue to operate as they have, while development patterns would be expected to change around them. Some of these businesses own their facilities. Others are compatible with a mix of uses and are willing to pay to retain their current location because the nature of their operations makes alternatives less desirable. These businesses are willing to pay more because they can pass on the higher costs of a more valuable location to their customers.

Over time, however, most existing PDR businesses that are located on land not zoned for PDR or mixed use (i.e., not in proposed SALI or MUG districts) would be expected to leave those areas as the real estate market would favor residential, retail, office, and other higher-value uses in those areas. Some PDR businesses would find suitable locations elsewhere in the city; others would relocate outside of San Francisco. Still others would go out of business. Under existing zoning, this has been the trend in the Project Area and in some of the adjacent Eastern Neighborhoods areas. The extent of displacement would depend primarily on how sensitive the business was to moving and other relocation costs. Furthermore, proposed policies under the Draft Plan would require one-for-one replacement of existing viable commercial uses, thereby offsetting the displacement impact and/or discouraging the new development responsible for the displacement in the first place.

In any one sector such as manufacturing, wholesale trade, construction, repair, distribution, or transportation, the diversity of PDR activity in San Francisco includes businesses that cover a large tolerance range with respect to space and location preferences and sensitivity to space costs. Therefore, it is not possible to make definitive conclusions about displacement and particular sectors. Generally, however, high-value-added businesses (businesses that can charge a premium for their product or

service, that customize their work to short product life-cycles) and businesses that have strong linkages to other sectors of the San Francisco economy, including labor force needs, would be most likely to relocate within the city, either within the Project Area, to other Eastern Neighborhoods, or to other similar locations. Business having the following characteristics would be most likely to relocate outside of San Francisco rather than take on higher costs of a San Francisco location: operations that require large single-story warehouses or open yards; production and/or distribution of commodity products or services that have numerous low-cost substitutes, relatively low transportation costs, and for which proximity to customers and suppliers is not as important as other aspects of operations; and clients/customers primarily from the regional market area.

The Draft Plan proposes anti-displacement programs to offset displacement impacts. Proposals include taking advantage of existing technical assistance, financing, marketing resources, and tax incentives promulgated through the Mayor's Office of Economic and Workforce Development and other existing entities; establishing a clearinghouse for locating affordable building space, navigating the permit process, and understanding environmental regulations; establishing incubator programs that include provision of subsidized building space; and establishing an impact fee to support business relocation assistance.

Displacement of PDR businesses would mean some San Franciscans who have limited formal education or who are immigrants who do not speak English well would lose opportunities for local, higher-wage jobs that offer good opportunities for advancement. Some workers would lose their jobs; others would face a longer commute. San Francisco residents and businesses that rely on PDR services would experience longer delivery times or higher costs for PDR products and services. San Francisco residents and businesses would have fewer local options for PDR products and services and would either pay more for the local option or find an alternative provider elsewhere.

The Draft Plan proposes a workforce development initiative targeted to people who work and live in the Draft Plan Area and who are in need of job training, apprenticeship, and job placement support. The Draft Plan proposes that funding for this effort come in part from the Plan Area Community Benefits program.²² This would offset any significant displacement of PDR business activity within the Draft Plan Area, and therefore the Draft Plan would result in a less-than-significant impact.

Although the Rezoning of Adjacent Parcels is anticipated to result in some new uses, including office development, the number of PDR jobs lost is not projected to be substantial, and therefore the impact of the Rezoning of Adjacent Parcels would also be less than significant.

²² The Planning Department is developing a program for the provision of benefits and improvements to provide services for current and new residents in the Eastern Neighborhood plan areas, where there is currently limited infrastructure. A key component of the program is the Needs Assessment, for which the department has engaged a consultant to provide an analysis on existing and future conditions. The Needs Assessment evaluates the categories of open space and recreational facilities and services, including schools, libraries, public art, police and fire needs, health care and child care, neighborhood serving business, public infrastructure, transit, transportation and public realm improvements, affordable housing and historic preservation.

Housing Demand

The Proposed Project would not create a substantial demand for housing in San Francisco. Ultimately, housing demand in the city is a function of regional economic and employment growth, the relative attraction of San Francisco as a residential location to various segments of the market, and the preferences and ability to pay of existing residents and of those who move to the region. The Proposed Project would not increase economic growth potential in San Francisco and would not result in more employment growth than otherwise expected in the city or the region. As described above, only a modest amount of employment growth is expected in the Project Area and most of this business activity is located in Project Area because that is the best and most affordable location from which to reach a citywide and, in some cases, regional market.

Under the Proposed Project, employment in the Project Area would increase by about 6,354 by 2030. The housing demand associated with that employment growth is estimated using factors about commuting and household size. **Table 4.C-4**, below, presents the estimates.

TABLE 4.C-4
HOUSING DEMAND ASSOCIATED WITH PROPOSED PROJECT EMPLOYMENT GROWTH

Estimated Number of Additional Jobs Accommodated by Proposed Project^a	6,350
Estimated Number of Proposed Project Workers Living in San Francisco^b	3,550
Resulting Demand for Housing in San Francisco^c	2,120
Total Housing Units Needed in San Francisco, Including 5-Percent Vacancy^e	2,220
Estimated Number of Proposed Project Workers Living Outside San Francisco^b	2,800
Resulting Demand for Housing outside San Francisco^d	1,750
Total Housing Units Needed outside San Francisco, Including 5-Percent Vacancy^e	1,830

^a See Table 4.C-3, p. 4.C-13. The estimate of 6,354 jobs has been rounded down to 6,350.

^b Based on 2000 Census commute patterns data: 56 percent of the people working in San Francisco live in the city and 44 percent commute from outside the city.

^c Demand for housing in San Francisco is based on the average number of workers per household in households that have workers (worker-households), thereby removing the influence of households consisting entirely of students, the elderly, or the unemployed. This factor is estimated using data from the U.S. Census Bureau, 2007-2009 American Community Survey (ACS), 3-Year Estimates for San Francisco. The survey results indicate that 25 percent of San Francisco households do not house workers. While, given the structure of the ACS questions and data presentation, there is not a direct means of measuring the number of workers per worker-household, the range can be bracketed. At the low end, the number of workers in households with one, two, and three or more workers is 1.53. At the high end, the total number of employed residents in the city (including workers living in group quarters, not in households) divided by the number of households with workers results in an estimate of 1.83 workers per worker household. The mid-point of this range, 1.68 workers per worker-household, is used in this analysis. The overall average—employed residents divided by number of households—equals 1.37.

^d Demand for housing outside San Francisco is based on an analysis similar to that described in note 3 (above) for San Francisco. The number of workers per worker-household is derived from analysis of the results of the 2007-2009 American Community Survey for the eight other Bay Area counties. Outside of San Francisco, 22 percent of households do not house workers. At 1.6, the average number of workers per worker-household for these eight counties is somewhat lower than the average for San Francisco.

^e Increases the household demand by 5 percent to account for housing units needed to maintain a market average vacancy rate.

The 6,350 additional jobs accommodated in Draft Plan Area and on the Adjacent Parcels represent demand for about 2,220 housing units in San Francisco, assuming continuation of the commute patterns evident in the 2000 Census. This is less than the approximately 2,883 units of additional housing projected to be created in the Project Area through 2030 by the Proposed Project. Therefore, it can be concluded that the Proposed Project, including the Draft Plan and the Rezoning of Adjacent Parcels, would not create a substantial housing demand that would result in adverse housing market or physical impacts. The total demand represents less than 5 percent of the 54,100-unit increase in housing units projected for the City through 2030 (applying a 5-percent vacancy factor to the estimated increase of 51,500 households).²³

Furthermore, larger-scale development in the Project Area, such as might be accommodated in the proposed Western SoMa MUO district along Townsend Street, would be required to participate in the Jobs-Housing Linkage Program, which would contribute to offsetting any residual impact of increased demand on housing prices and rents and the need for affordable housing in San Francisco. Because the Jobs-Housing Linkage Program requirement does not apply to the first 25,000 square feet of net additional development, and the Draft Plan and Rezoning of Adjacent Parcels would favor small-scale new development, it is likely that much of the growth and new development anticipated under the Proposed Project would be exempt from this requirement. Any Jobs-Housing Linkage Fee Program revenue generated by development projects in the Project Area would be deposited in the Citywide Affordable Housing Fund to be used to increase the supply of affordable housing in San Francisco.

As indicated above in Table 4.C-4, p. 4.C-19, about 44 percent of the demand for housing associated with Project Area employment growth under the Proposed Project would be for units outside San Francisco, assuming continuation of commute patterns evident in the 2000 Census. This translates to demand for 1,830 housing units. This demand represents less than one-half of one percent of the number of housing units projected for the rest of the Bay Area region through 2030 (applying a 5-percent vacancy factor to the estimated increase of 546,600 households). This demand would therefore be accommodated in the regional housing market without putting upward pressure on housing prices and rents.

Housing Supply

The Draft Plan and Rezoning of Adjacent Parcels would increase the development potential for housing in the Project Area and vicinity beyond what currently exists in the Project Area. With changes to height and bulk limits and development densities allowed under the Proposed Project, the San Francisco Planning Department estimates a total additional development potential of about 2,883 housing units in Project Area. This would increase the total housing unit potential in this part of San Francisco from 3,364 units to 6,247 units.

This increase in housing development potential would improve San Francisco's ability to accommodate housing demand, thereby reducing the number of people who would otherwise be commuters living outside the city and therefore more likely to drive to work. Furthermore, the additional housing supply in

²³ Neither ABAG nor the City's Land Use Allocation, which projects distribution and intensity of trip-generating activities based on forecasted land uses, explicitly project the increase in housing units in San Francisco. The Land Use Allocation uses a 5-percent housing vacancy factor to compare the projected increase in households to housing supply. See *Land Use Allocation 2007*, "Draft Summary Documentation," memorandum from Aksel Olsen, San Francisco Planning Department to Jesse Koehler, San Francisco County Transportation Authority (SFCTA), June 18, 2008, note 7, page 8.

the Project Area would reduce demand pressure from employment growth on the existing, older housing stock in the city. Because the additional housing development potential is small relative to San Francisco's overall housing market, however, these effects are likely to be modest at best.

In addition, the developers of new housing (in development projects of five or more units) in the Project Area would be required to participate in San Francisco's Inclusionary Affordable Housing Program. The affordable housing fees required of these developers would generate revenue for the Citywide Affordable Housing Fund to be used to increase the supply of affordable housing in San Francisco. Payment of these fees would satisfy the City's current land use regulatory requirement to offset the documented impact of market-rate housing development on the demand for affordable housing in San Francisco.

Based on the above discussion, the Draft Plan and the Rezoning of Adjacent Parcels would not be expected to displace a large number of housing units or people or necessitate the construction of replacement housing, either due to the anticipated changes in land uses or changes to population and employment projections. Therefore, this impact would be less than significant.

Mitigation: None required.

Impacts of the 350 Eighth Street Project (Project-Level Analysis)

Impact PH-3: The proposed 350 Eighth Street project would not induce substantial population growth, either directly or indirectly. (Less than Significant)

The 350 Eighth Street project site does not contain any residential population as it is currently used as a Golden Gate Bridge, Highway, and Transportation District as a bus parking and inspection yard. The 350 Eighth Street project would contain a total of approximately 444 residential, 33,644 square feet of ground-floor commercial space, 8,148 square feet of arts space, and 1,333 square feet of community space. The San Francisco Planning Department's forecasting methodology assumes the citywide average household size of 2.29 persons per household to estimate households population in the Project Area. Based on this, the proposed 350 Eighth Street project would introduce approximately 1,017 residents on the 350 Eighth Street project site.

The San Francisco Planning Department's forecasting methodology assumes 276 square feet per employee for office uses and 350 square feet per employee is used for retail uses. Assuming that the 350 Eighth Street project would have a combination of office-related and retail uses that would total approximately 33,644 square feet, it would generate between 96 and 122 jobs associated with the commercial component. Employing the same rates as used above for the proposed 8,148 square feet of arts space, the 350 Eighth Street project would generate up to approximately 30 jobs associated with this component.

The population and employment that would be generated by the 350 Eighth Street project would make up approximately 15 percent of the existing household population and less than 1 percent of existing jobs

in the Project Area. If the Draft Plan and Rezoning of Adjacent Parcels were to be implemented, by 2030, the 350 Eighth Street project would make up approximately 8 percent of the total household population and less than 1 percent of the jobs in the Project Area. Because this growth is already accounted for in the Draft Plan and there would not be a significant effect with respect to Draft Plan growth, the 350 Eighth Street project would not result in any significant impacts with respect to inducing substantial population growth.

Mitigation: None required.

Impact PH-4: The proposed 350 Eighth Street project would not displace a large number of housing units or people or necessitate the construction of replacement housing. (Less than Significant)

The 350 Eighth Street project site is used by Golden Gate Bridge, Highway, and Transportation District as a bus parking and inspection yard. No housing units exist on the 350 Eighth Street project site and the site is occupied by three one-and-a-half-story sheds and large expanses of surface parking areas. Thus, the implementation of the 350 Eighth Street project would not displace any housing units or people or necessitate the construction of replacement housing, and this impact would be less than significant.

Mitigation: None required.

Cumulative Impacts

Impact C-PH: The implementation of the Proposed Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute considerably to a cumulative impact on population and housing. (Less than Significant)

The analysis above is based on San Francisco Planning Department projections, which take into account cumulative growth in San Francisco through the year 2030. Of the four individual cumulative projects that are anticipated in the Project Area vicinity (which are discussed in Chapter 4 Overview, under “Cumulative Impacts”), the 2030 population projections already account for the growth that would be generated by the *Central Corridor Plan*, the 5M Project, and the Moscone East project, as these projects were specifically overlaid on top of the Planning Department forecasts.

The growth that would result from implementation of the 801 Brannan Street/One Henry Adams Street Project is not explicitly included in the projections because at the time when they were prepared, this project had been inactive for an extended period of time. However, the Department’s base growth forecasts assume a large amount of growth in the vicinity of this project, such that the 801 Brannan Street/One Henry Adams Street Project would not result in impacts beyond those encompassed by the forecasts. As discussed on page 4-7 (in Chapter 4 Overview), the 801 Brannan Street/One Henry Adams Street Project would construct a total of five buildings containing approximately 825 dwelling units,

about 50,000 square feet of ground-floor retail space, and about 800 parking spaces, introducing potentially over 1,500 new residents and close to 200 employees to an area adjacent to the Draft Plan Area boundary. The Planning Department growth forecasts assume less residential growth, but considerably more employment growth and, while localized cumulative impacts proximate to the 801 Brannan Street/One Henry Adams Street Project (such as traffic) could vary somewhat, cumulative impacts within the Project Area would be very similar to those described elsewhere in this EIR because the overall growth in the Showplace Square vicinity, southwest of the Plan Area, would not vary substantially, even with the inclusion of the 801 Brannan Street/One Henry Adams Street Project. This project, in combination with the three other large projects discussed in Chapter 4 Overview, and other typical growth that is expected in the Project Area vicinity, would therefore not result in an overall increase in the number of residents and housing units as well as employees in San Francisco as a whole beyond the increase already assumed in the cumulative growth forecasts incorporated into the analyses in this EIR. Moreover, all of the above projects would be implemented in an area that is already served by existing utilities and would not be expected to induce substantial growth in the Project Area vicinity, either directly or indirectly. Furthermore, these projects would not generate housing units, residents, and employees in numbers that are atypical for the area as a whole, nor would they be developed in locations inappropriate for such uses.

As stated above, each of the Proposed Project components, including the Draft Plan, Rezoning of Adjacent Parcels, and the 350 Eighth Street project, would result in less-than-significant impacts, or no impacts, to population and housing. When considered in combination with the *Central Corridor Plan*, the 5M Project, the Moscone East project, and the 801 Brannan Street/One Henry Adams Street Project, as well as other projects anticipated in the Project Area vicinity, each of the Proposed Project component's incremental contribution to any potentially significant cumulative impacts would not be cumulatively considerable and this impact would therefore be considered less than significant.

Mitigation: None required.

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4.D. Cultural and Paleontological Resources

This section includes information about the cultural and paleontological resources in the Draft Plan Area, the Adjacent Parcels, and the 350 Eighth Street project site. Cultural resources include historic-period resources of the built environment, historic-period and prehistoric archeological resources, paleontological resources, and human remains. This section provides a prehistoric and historic context of the overall Project Area, information on recorded architectural resources including historic districts, and an analysis of known and anticipated archeological resources in the Project Area. The section also provides an assessment of the potential environmental impacts on cultural and paleontological resources associated with the implementation of the Proposed Project (consisting of the *Western SoMa Community Plan*, Rezoning of Adjacent Parcels, and 350 Eighth Street project), as well as mitigation measures to reduce impacts (some to a less-than-significant level).

Primary sources of information for the context and setting discussion include the following: (1) *SoMa Historic Context Statement*, *SoMa San Francisco*, prepared by Page & Turnbull¹; (2) *Preservation, A Strategic Analysis Memo*, prepared by the Western SoMa Citizens Planning Task Force²; (3) the *Market and Octavia Neighborhood Plan EIR*, prepared by the San Francisco Planning Department³; (4) the *Western SoMa Community Plan Draft EIR Historic Resource Technical Report*, prepared by Page & Turnbull⁴; (5) the *Archeological Technical Memorandum for the San Francisco General Plan Housing Element EIR*, prepared by William Self Associates and Randall Dean⁵; (6) the *Final Draft Archaeological Research Design and Testing Plan for the 350 Eighth Street Project*, prepared by William Self Associates,⁶ and (7) the Soma Historic Resource Survey, prepared by the San Francisco Planning Department.

Page & Turnbull based its preparation of the Western SoMa Community Plan Draft EIR Historical Resources Technical Report on an extensive library of information, including DPR523D forms for Lafayette-Natoma Residential District and New Montgomery and Mission Historic District, prepared by Anne Bloomfield, and DRP523A and B forms for 111-117 8th Street, prepared by Architectural Resources Group. In addition, the Page & Turnbull report also referenced other surveys, such as DPR523A and B forms for 112 7th Street (Billat, Loma of Earthtouch LLC) and DPR523A and B forms for 111-117 8th Street (Architectural Resources Group).

¹ Page & Turnbull, *SoMa Historic Context Statement*, *SoMa San Francisco*, prepared for San Francisco Planning Department, December 2009. Available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2008.0877, and online at: <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=372>. Accessed April 19, 2012.

² Western SoMa Citizens Planning Task Force, *Preservation, A Strategic Analysis Memo prepared by the Western SoMa Citizens Planning Task Force for the Western SoMa Community Plan*, April 2008. Available online at: <http://www.sfplanning.org/Modules/ShowDocument.aspx?documentid=7007>, accessed April 19, 2012.

³ San Francisco Planning Department, *Market and Octavia Neighborhood Plan EIR*. Case No. 2003.0347E; Final EIR certified April 5, 2007. Available online at: <http://www.sf-planning.org/index.aspx?page=1893>. Accessed April 19, 2012.

⁴ Page & Turnbull, *Western SoMa Community Plan Draft EIR, Historic Resource Technical Report*, prepared for Environmental Science Associates, 2011. Available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2008.0877.

⁵ 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 online at: http://www.sf-planning.org/ftp/files/MEA/2007.1275E_SFHE_DEIR_AppxC.pdf, Accessed April 19, 2012.

⁶ William Self Associates, *Final Draft Archaeological Research Design and Testing Plan for the 350 Eighth Street Project*, September 2011.

^{6B} San Francisco Planning Department, *SoMa Historic Resource Survey*. Available online at: <http://sfplanning.org/index.aspx?page=2530>. Accessed August 20, 2012.

Environmental Setting

Natural Setting

The Project Area is located on the northeast side of the San Francisco peninsula, immediately west of the Mission Bay neighborhood. Elevations range from approximately 12 to 42 feet above SF City Datum with a very gentle slope toward the east. According to mapping compiled by the United States Geological Survey (USGS), the underlying surficial sediments in the Project Area consist of Quaternary alluvial

sediments, artificial fill, and beach/dune sands.⁷ Depending on the age of construction and site conditions, additional areas of engineered fill may be present throughout the Project Area. Prior to leveling and filling beginning in the early-American period (c. 1850), the Project Area was located adjacent to or in the marshland that formed part of an extended drainage into Mission Bay.^{8,9} The marshland and mudflats stretched north to Market Street and west to Mission Street with sandy ridges interspersed between drainages.

Defining Cultural Resources

Generally, an archeological resource is determined to be an “historical resource” due to its eligibility for listing on the California Register because of the potential scientific value of the resource, that is, the resource “has yielded, or may be likely to yield, information important in prehistory or history” (CEQA *Guidelines* Section 15064.5 (a)(3)). An archeological resource may also be California Register-eligible under other evaluation criteria, such as Criterion 1, association with events that have made a significant contribution to the broad patterns of history; Criterion 2, association with the lives of historically important persons; or Criterion 3, association with the distinctive characteristics of a type, period, region, or method of construction. Appropriate treatment for 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 a “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.

Integrity is an essential criterion in determining if a potential resource, including an archeological 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. In archeology, 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. The integrity test for an archeological resource is whether the resource can yield sufficient data (in type, quantity, quality, diagnosticity) to address significant research questions. 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.

⁷ United States Department of Agriculture, Natural Resources Conservation Service, formerly the United States Geological Survey (USGS), *Geologic Map of the San Francisco Bay Region*, W. Graymer¹, B.C. Moring¹, G.J. Saucedo², C.M. Wentworth¹, E.E. Brabb¹, and K.L. Knudsen, also available at http://pubs.usgs.gov/sim/2006/2918/sim2918_geolposter-hires.pdf, 2006.

⁸ United States Coast Survey, *City of San Francisco & Vicinity, California. Survey completed in February 1852*; maps published 1853.

⁹ United States Coast Survey, *City of San Francisco & Vicinity, California. Topography completed in 1857-1858; hydrography completed in 1857*; maps published 1859.

Overview of San Francisco Archeology

This subsection has been adapted from the *Archeological Technical Memorandum for the San Francisco General Plan Housing Element EIR*.¹⁰

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 storeships, 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 cemetery sites involving the removal of a large number of burials. However, with one exception,¹¹ 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 significant research focus in recent archeological work in San Francisco and in Oakland, across the Bay, has been comparative studies of domestic and commercial deposits after 1860 and before the 1906 earthquake and fire. Freeway projects conducted by Caltrans, stimulated by the damage caused during the 1989 Loma Prieta earthquake, made possible several in-depth archeological studies of this period.^{12,13,14,15} Such studies have shown that archeological deposits of the late 19th century or early 20th century may have significant 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 Project Area and Vicinity

The following discussion outlines the prehistoric context of the project area, including the most recent chronology for prehistoric archaeological sites on the San Francisco peninsula and the San Francisco Bay Area.

¹⁰ William Self Associates and Randall Dean, 2009.

¹¹ 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

¹² Praetzellis, Mary (editor), *West Oakland – A Place to Start From. Research Design and Treatment Plan, Cypress I-880 Replacement Project*. Prepared for Caltrans District 4, Oakland, CA, 1994.

¹³ Praetzellis, Mary and Adrian Praetzellis (editors), *Tar Flat, Rincon Hill, and the Shore of Mission Bay: Archaeological Research Design and Treatment Plan for SF-480 Terminal Separation Rebuild*, 1992.

¹⁴ Praetzellis, 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.

¹⁵ 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.

Since the late Pleistocene, when indigenous peoples may have first arrived in the Bay Area, the region has undergone significant environmental changes. The oldest evidence of humans in San Francisco was found 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). The majority of known prehistoric-era sites in San Francisco are no more than 2,000 years old and are found buried at depths of from approximately 10 to 20 feet below ground surface. They were originally deposited 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 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 or adjacent to the Bay waters. He recorded 425 shellmounds, and yet his survey occurred well after the Yerba Buena Cove had been filled and the area heavily developed and covered by the built environment.¹⁶ It is likely that the filling of the cove and subsequent development obscured any prehistoric occupations that may have existed there. The majority of western San Francisco has not yet yielded archeological resources from prehistory, but it is not clear whether this is a reflection of past settlement preferences, lack of systematic archeological investigation, or a combination of changes of landscape over time that have buried or otherwise obscured resources, together with a lack of construction to depths likely to reveal any such buried resources.

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). Assumedly, populations were small and highly mobile. The archeological signature of such groups would be faint and 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 and milling slabs. Human burials from this period have also been investigated. There are no documented Early Holocene sites in San Francisco.

¹⁶ 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.

Middle Holocene (5700 - 1800 B.C.)

Middle Holocene sites are more widespread in the San Francisco 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 one Middle Holocene site (CA-SFR-28), the remains of a young woman found in marsh deposits 75 foot below the current ground surface.

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 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 1909.¹⁷ Nelson pursued his interest in San Francisco prehistory with excavations at CA-SFR-7 (the Crocker Mound) on the Bay's southeastern shoreline,¹⁸ 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.¹⁹ 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. Approximately 50 prehistoric archeological sites have been documented within the northern San Francisco peninsula and Yerba Buena Island; the majority of these were 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 neighborhood (SoMa) and the Hunters Point-Bayview-Candlestick Point-Visitacion Valley area. 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 SoMa sites have, on the other hand, largely only come to light since the 1980s and have been subject to various analytical and absolute dating

¹⁷ Nelson, 1909.

¹⁸ Moratto, M. J., *California Archaeology*. Academic Press, Orlando, FL., 1984:233.

¹⁹ Ziesing, 2000:32.

techniques. The SoMa 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.

A third area of apparent intense prehistoric occupation was on the terraces of Islais and Precita Creeks 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 Lake Merced Site) have not been well investigated. One of the well-researched shellmounds in San Francisco is CA-SFR-4 on Yerba Buena Island, which has been determined to have been first used exclusively as a cemetery site for around three hundred years by possibly Hoka-speaking populations. 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 CA-SFR-112 in SoMa.

Cultural Affiliation and Ethnohistorical Overview

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.²⁰ 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 the Miwok-Costanoan, which belonged to the Utian family within the Penutian language stock.²¹ 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.²² The two terms (Costanoan and *Ohlone*) are used interchangeably in much of the ethnographic literature.

The Costanoan 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. The *Yelamu* were composed of 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 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

²⁰ Kroeber, Alfred, Handbook of the Indians of California. *Bureau of American Ethnology Bulletin* 78. Washington, DC, 1925:462-473.

²¹ Shipley, William F. “Native Languages of California”. *Handbook of North Americans*. Vo.8 California. Smithsonian Institution Press. 1978:82-84.

²² Bocek, Barbara, *Hunter-Gatherer Ecology and Settlement Mobility along San Francisquito Creek*. Doctoral Dissertation, Stanford University, Stanford, CA, 1986:8.

(which are currently experiencing resurgence among *Ohlone* descendants). Brought into the missions (the *Yelamu* inhabitants joined Mission San Francisco from 1777 to 1787²³), the surviving *Ohlone*, along with the *Esselen*, *Yokuts*, and *Miwok*, were transformed from hunters and gatherers into agricultural laborers.^{24,25} With Mexican independence in 1821 and the subsequent abandonment of the mission system, numerous ranchos were established. Generally, the few Indians who remained were then forced by necessity to work on the ranchos.

In the 1990s, some *Ohlone* groups (e.g., the *Muwekma*, *Amah*, and *Esselen* farther south) submitted petitions for federal recognition.^{26,27} Many *Ohlone* are active in preserving and reviving elements of their traditional culture and actively consult on archeological investigations.

Historic Context of the Project Area

This subsection has been adapted from the *SoMa Historic Context Statement* and the *Western SoMa Community Plan Draft EIR, Historic Resource Technical Report*, both prepared by Page & Turnbull.²⁸

Early Settlements, 1846-1850

Throughout the Spanish, Mexican and early American periods, SoMa, including the Project Area (which includes the Draft Plan Area and Adjacent Parcels), had few settlers, in part because one-third of it lay underwater and much of the rest was occupied by sand dunes. The first recorded structure in the South of Market was on Rincon Hill and was erected in 1846, the year that the American government first occupied California.

Jasper O'Farrell's 1846 street survey for San Francisco anticipated the need for a direct route from Yerba Buena to Mission Dolores. O'Farrell laid out a 100-foot-wide thoroughfare southwest from Yerba Buena Cove to the vicinity of Mission Dolores. Due to the relative position of both settlements, combined with the need to avoid the marshlands in what is now SoMa, O'Farrell laid out the new street (Market Street) on a diagonal. Departing from earlier surveys, O'Farrell laid out the blocks south of Market Street to be four times larger than the "50-vara blocks" north of Market Street.²⁹ Known as the "100-vara blocks" in reference to their unit of measurement, the blocks south of Market Street were also laid out at a 45-degree angle to the blocks north of Market. Initially, the grid ended at Fifth Street due to the presence of tidal marshes west of what is now Fifth Street.

The discovery of Gold at Sutter's Mill in January 1848 brought on an unprecedented population explosion in San Francisco and the SoMa area. Despite the physical impediments to growth, it did not take long for

²³ 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.

²⁴ Levy, Richard, Costanoan. In *Handbook of North American Indians*, Volume 8, California, Robert F. Heizer, ed. Smithsonian Institution, Washington D.C., 1978.

²⁵ 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.

²⁶ Esselen Nation, *The Ohlone/Costanoan Esselen Nation Today*, 2007.

²⁷ Muwekma Ohlone Tribe, *The Muwekma Ohlone Tribe: A Brief History and the Recognition Process*, 2007.

²⁸ Page & Turnbull, 2011 and Page & Turnbull, 2009.

²⁹ A vara was a Spanish unit of length used in early California; it measured approximately 33 inches (i.e., almost one yard). One hundred varas equals 275 feet, and thus two 100-vara lots back-to-back measure 550 feet, which is the north-south length of South-of-Market blocks (i.e., the distance between major east-west streets, such as Mission and Howard).

the “forty-niners” to take possession of habitable sections of SoMa. Protected from the harsh onshore winds, SoMa enjoyed some of the sunniest weather in San Francisco.

The transformation of SoMa from a temporary camp of gold miners into a permanent residential neighborhood integrated with the rest of the city required removal of the sand dunes that divided SoMa from the more developed parts to the north. The clearing of the last major sand dunes occurred by the end of 1858, although sand removal continued into the 1870s. Due to the sandy and sometimes swampy nature of the ground, many of the early streets were paved with thick wood planks laid on the ground. In November 1850, the City awarded Charles Wilson a franchise to construct a plank road between downtown San Francisco and Mission Dolores along Mission Street. This 2.5-mile toll road was completed in 1851 and resulted in the evolution of a functioning resort community between Eighth and 14th Streets in the 1850s and facilitated the transport of farm goods from Mission District farmlands occupied by squatter farmers.

As early as 1850, SoMa was well on its way to becoming San Francisco’s primary industrial district. During the Gold Rush era, this compact industrial district served as the most productive industrial zone on the West Coast, manufacturing mining equipment and machinery, steam engines and boilers, water wheels, gearing and mill work, and steamboat repairing. In addition to being an industrial district, the relatively flat SoMa, including the Project Area, became a burgeoning residential area for the working classes. Much of the area was developed with prefabricated wood houses from New England and even a few from China.

Important for the SoMa’s industrial future were the large 100-vara survey blocks laid out by O’Farrell. The streets were also flatter and wider (30 varas wide) than streets north of Market Street (where they were 25 varas wide), making the transportation of goods via wagon and eventually train and truck much easier. The wide streets and proximity to the Bay also provided a means of fire protection in a city that experienced major fires every year or two. Beyond the primary streets such as Mission, Howard, and Folsom, the large 100-vara blocks south of Market Street were interlaced by a network of smaller back streets and alleys, which assisted in the industrial development of the area by providing light traffic areas in which to load and unload goods. In large part, these streets also were lined with single-family dwellings and residential flats for industrial workers. Saloons occupied most street corners.

The SoMa grid was extended in a southwesterly direction from Fifth Street in 1850. Surveyed by City Surveyor William Eddy, the 1854 map shows O’Farrell’s 100-Vara Block Survey extended in a southwesterly direction from Fifth Street to what is now Ninth Street. Southwest of Eighth Street, the large 100-vara blocks were reduced in size to accommodate the shift of the numbered streets around Mission Bay to achieve prevalent east-west orientation south of 13th Street. This change in street alignment, although necessary, was not accomplished without some awkwardness; what is now 13th Street terminated at a wedge-shaped plaza located between Mission and Otis Streets.

Continued Growth, 1850-1906

Boarding houses and lodging houses grew up simultaneously with the industrial plants and commercial buildings in the latter half of the 19th century, and most were located west of Third Street and the original warehouse district. Typically of wood-frame construction, these hotels were destroyed in the 1906 earthquake and fire.

Much of San Francisco's growth during the latter quarter of the 19th century can be attributed to the massive number of Irish immigrants who made their way to the Bay Area after the Civil War. By 1880, one in eight San Franciscans had been born in Ireland, but a third of all city residents were of Irish descent. In SoMa, this figure was much higher, with Irish comprising roughly half the population.

During the 19th century, the western part of SoMa was also home to a Swedish enclave, as evidenced by several Swedish churches that existed prior to the 1906 earthquake. Other religious institutions supported the German, Greek, Japanese, and Jewish ethnic groups that were located in the western part of SoMa.

Earthquake and Reconstruction, 1906-1913

On April 18, 1906, San Francisco was devastated by the Great Earthquake and Fire. SoMa was especially hard hit by both the temblor and the 11 fires that started in the area due to broken gas mains. The earthquake's most striking structural failures occurred in the least affluent neighborhoods, where poor workmanship contributed to a loss of property and life. Foundation failures were common in the marshy land south of Market Street. The earthquake's movement left areas such as Dore Street and Brannan Street with ripples in the street pavement and wood-frame houses tossed from their minimal foundations.

Following the earthquake, fires broke out from a variety of sources, including fallen lanterns and chimneys, damaged boilers, broken gas mains, and flammable industrial materials that were knocked to the ground. The fires quickly grew out of control as they ignited the densely packed wood-frame boarding houses, hotels, and rows of aging houses in SoMa. The water mains were mostly broken and fire fighters were powerless to stop the flames from rapidly consuming virtually the entire neighborhood within six hours of the actual earthquake. The death toll in SoMa was much higher than in the rest of the city. The numbers were greatly undercounted because hotels and boarding houses collapsed on their inhabitants and the people were never accounted for. Additionally, many of these residents were lone immigrants or single male transients without local ties. A good number of these people on the margins of mainstream society were never reported as missing.

Unlike certain parts of the city, such as North Beach, which were reconstructed quite rapidly after the 1906 earthquake, SoMa took two decades to fully recover. Temporary structures were erected so that people could be housed and businesses in the burned section could continue operating. However, permanent wood-frame buildings were banned until the fire codes were updated. In many ways, SoMa was uniquely affected by the earthquake, and lingering uncertainty over its historical patterns of development delayed reconstruction longer than in many other areas. Uncertainty over the fate of the neighborhood following the disaster led many homeowners who had lived there before the earthquake to sell out to the industrialists. Investors and industrialists were more than willing to acquire these lots and gradually assembled them into larger parcels on which to build larger industrial buildings.

During the first five or so years following the earthquake and fire, large sections of the western portion of SoMa were used for staging of the post-quake cleanup and reconstruction functions, including junk yards, lumber yards, iron and steel works, wrecking companies, wood working, and machine shops. The area functioned as the salvage yard for the city's ruins. Consequently, it continued to be used as the location for services and support business for downtown San Francisco and the rest of the city, though the nature of the businesses changed somewhat because of the city's shift in needs. Many of the earliest

buildings were livery stables, storage yards, or other lightweight wood-frame buildings that housed lumber and construction materials, coal yards, junk stores, laundries, plumbing supply stores, and second-hand stores, as well as more permanent buildings such as breweries and factories. Corners were often redeveloped with three- and four-story residential hotels and lodging houses, while mid-block alleys were occupied by cottages and multi-family flats.

One large post-earthquake industrial complex, located at 11th and Folsom Streets, housed the Jackson Brewing Company. Built from 1906 to 1907 and 1912 to 1913, the Romanesque Revival buildings are constructed of brick with concrete foundations and wood and stone ornament. The complex is one of the last remaining turn-of-20th-century brewing complexes of this type, composed of a series of low-rise brick buildings, each with its own purpose and use. As a result of its historic and architectural significance, the former Jackson Brewing Company buildings were listed on the National Register of Historic Places in 1993. It is also listed as San Francisco City Landmark No. 199.

The James Lick Baths building was constructed at 165 10th Street in 1890 to serve the working-class population in the South of Market. It was rebuilt in 1906 following the earthquake and fire, using as much of the original structure as possible in order to remain in operation. The façade was redesigned from the heavy and outmoded Richardsonian Romanesque style to the lighter Renaissance Revival style. The baths finally closed in 1919 due to financial difficulties. The building was converted to the People's Laundry, which operated at that location from 1920 to 1973.³⁰ The building is San Francisco City Landmark No. 246.

Although much of the SoMa, including the Project Area, was redeveloped for industrial and commercial use, small residential enclaves were rebuilt on the side streets and alleys for those workers who remained. At least six general groupings of residential buildings developed in the seven years following the earthquake. Relatively few residential buildings were constructed after the initial period of construction from 1906 to about 1913, so these groupings remain today. During reconstruction, buildings were constructed without setbacks and were designed in Edwardian-era styles with angled bay windows.

Located between Folsom and Harrison Streets, Columbia Square (located outside of the Project Area boundaries) was the only prominent recreational park in the SoMa area. The 1854 Map of San Francisco shows a public square reserved on a portion of the block bounded by Folsom, Sixth, Harrison, and Seventh Streets. A smaller portion of this reservation eventually became Columbia Square. Used as an earthquake refugee camp after the 1906 earthquake, Columbia Square was converted into a surface parking lot and school site in 1953. Not used as a park for almost half a century, Columbia Square was recently redesigned and reopened as the Victoria Manalo Draves Park.

The population that remained in SoMa was largely composed of working-class residents, including many single, European-American males who came to San Francisco in search of work. The characteristics of the district's residential population did not change much until World War II. The buildings that were constructed between 1906 and 1936 reflect the nature of the area's lower economic class and ethnic associations. This includes a few religious buildings that grounded the ethnic groups and residential

³⁰ Moses Corrette, Planning Department, City and County of San Francisco, James Lick Baths DPR 523 A and DPR 523 B forms (8 March 2004).

hotels and small residential flats buildings that were constructed amidst the growing number of industrial buildings.

After the 1906 earthquake and fire, many of the lots that had contained residential properties were purchased by businesses and redeveloped for industrial uses. New building codes requiring fire-resistant construction also accelerated the post-earthquake shift from residential to commercial and industrial uses in the Project Area. Consequently, the ethnic groups that once resided in the western part of SoMa moved elsewhere. For example, the Swedish Evangelical Lutheran Ebenezer Church followed its constituents to the Mission District. The other Swedish churches, the Japanese mission, and the Jewish synagogue closed. Presumably, the members of their congregations moved to other areas of the city and joined new parishes there.

St. Joseph's Catholic Church, a large complex consisting of two churches, a school, a convent, and rectory at the southwest corner of 10th and Howard Streets (within the Project Area), was rebuilt in 1913 and rededicated in 1914. At the time the church was rebuilt, the parish was largely Irish Catholic. However, many Irish residents in the SoMa neighborhood chose to move to other neighborhoods after the earthquake. By the late 1950s and early 1960s, the membership of St. Joseph's Church was composed largely of Latino and Filipino immigrants. St. Joseph's Church still exists, although it was closed by the San Francisco Archdiocese in 1994; it is City Landmark No. 120 and a National Register-listed property.

World War I and 1920s

The initial flurry of post-quake reconstruction was followed by a brief recession, which coincided with World War I. Most of the buildings that were constructed during this time were placed on unoccupied lots along the primary thoroughfares, including the numbered streets and Folsom Street. However, many lots remained undeveloped.

During the first decades of the 20th century, fewer women and children were visible on SoMa streets than in any other residential or commercial district of the city. A 1914 survey estimated that 40,000 single men lived in SoMa at the peak of the winter, as half of the city's cheap residential hotels were in the area. About one-third of the men were permanent city residents, and the rest were migrant farm or agricultural workers. Many struggled to find work because manufacturing employment decreased in San Francisco industries by 4,000, down almost 10 percent, between 1918 and 1921. Consequently, housing investors did not build any more lodging houses or residential hotels after World War I. The unemployed men or out of season farm workers who remained in the western part of SoMa often loitered in front of the residential hotels, as well as saloons, labor agencies, card rooms, and other commercial establishments.

The ethnic demographics of SoMa remained largely European-American until World War II. Greek Town continued to flourish in the 1910s. The inexpensive Greek coffeehouses and restaurants catered to many of the single male workers in the neighborhood.

By the end of World War I and the coinciding recession, construction picked up again. By the 1920s, concrete had become the predominant building material due to its strength and durability, resistance to earthquake damage, and ability to provide large and unobstructed workspaces within structures. These leased buildings were designed to be easily transformed to new light industrial occupants. Concrete was

also better adapted to the architectural styles popular during the 1920s, including the Spanish Colonial Revival and Art Deco styles. Other concrete industrial buildings were generally simple, with ribbons of upper-story steel-sash industrial windows, but featured Classical Revival details including pilasters, friezes, and cornices.

Warehouses and light industrial uses dominated the western part of SoMa in the 1920s. Some new buildings stretched the entire width of a block. For example, the Holt Brothers Company Wagon Supplies occupied a large building on a through-lot at 914 Folsom Street (outside of the Project Area boundaries), and the California Casket Company occupied a through-lot on Mission Street between Mary and Sixth Streets (also outside of the Project Area boundaries). Although not occupying a through lot, the 1930 Eng-Skell Company building at 1035 Howard Street, within the Project Area, extends half-way to Folsom Street.

Of the western SoMa light industrial buildings that were constructed during the 1920s, the Rothschild Building at 465-475 10th Street (within the Project Area boundaries) is recognized as a nationally significant property in San Francisco. It is listed on the National Register of Historic Places as a Classical Revival style building that was constructed for Herbert L. Rothschild Entertainment, Inc. as a workshop for theatrical scenery. Typical of other light industrial buildings that were constructed in SoMa during the mid-1920s, the building was constructed of reinforced concrete and stucco. However, the massing and function are unique within SoMa. The building's 68-foot fly loft was used in the scenery painting business.

Very few residences were constructed during the 1920s. Those that were built were often of wood-frame construction with stucco cladding, designed in the Mediterranean Revival style or other revival styles. A few buildings showed a late persistence of the Edwardian style, featuring the familiar angled bay windows, but most often were characterized by a minimum of architectural ornament and smooth stucco rather than wood cladding. Residential hotels continued to be used by single male laborers.

By 1923, a Greek community some 11,500 strong lived in San Francisco, many in SoMa (and in the Project Area). Scattered residents of other ethnicities remained on streets such as Natoma and Minna as well. Businesses such as the People's Laundry, located at the former James Lick Baths at 165 10th Street and operated by a Japanese family, are representative of the scattered businesses within the Project Area that were owned or operated by San Francisco's minority populations.

Great Depression and World War II, 1930s and 1940s

Coinciding with the Great Depression, most construction in SoMa came to a halt in the 1930s. In 1936, however, the San Francisco-Oakland Bay Bridge was completed. As part of the bridge construction, an on-ramp and overpass were constructed that effectively sliced through SoMa, cutting the neighborhood into a north section and a south section. This and other public works projects, including construction of South Van Ness Avenue, altered the character and cohesiveness of the overall neighborhood by changing the circulation patterns in SoMa. These changes occurred in areas outside of the Project Area but did have an effect upon the wide automobile-based circulation systems within the Project Area, which include wide, one-way streets merging into freeway on-ramps. Infrastructure projects, coupled with the slow economic climate, virtually brought an end to construction in the SoMa by 1936.

SoMa went through a change of inhabitants after the 1930s. The 1940s witnessed an influx of white Dust Bowl refugees from Oklahoma, Texas, and Arkansas, as well as a parallel migration of rural African Americans from agricultural regions of Texas and the Mississippi Delta. By the end of World War II, African Americans made up 10 percent of the SoMa's population. In the 1950s, additional influxes of Filipinos and Latin Americans from El Salvador, Nicaragua and Mexico further changed to composition of the neighborhood's population.

Redevelopment and New Residents, 1950s to Present

By the 1950s, citing economic stagnation, poverty, and increasing crime, the San Francisco Redevelopment Agency declared a large portion of SoMa an urban renewal zone. The centerpiece of these "slum clearance" efforts involved the demolition of several entire blocks east of the Project Area, bounded by Third, Mission, Fourth, and Folsom Streets and the ensuing construction of today's Moscone Convention Center.

Although the Project Area was largely unaffected by the urban renewal plans of the 1950s, new waves of immigrants in the 1960s and 1970s repopulated the larger SoMa neighborhood. Groups on the margins of what was then mainstream society, such as artists, gays and lesbians, and radicals began to lay claim to SoMa. Filipinos, outgrowing their traditional Manilatown neighborhood, began to move to SoMa during the 1960s and 1970s. One outcome of the stalled redevelopment process was a long period of uncertainty about the future direction of the area. Developers disliked the uncertainty and, without their interests in property, rents remained very low during the 1970s and 1980s. Cheap rents attracted artists and not-for-profit groups, as well as other opportunists, to underused industrial loft buildings. The lack of a significant residential population encouraged nighttime bars and clubs.

By the 1970s, the western part of SoMa, specifically, was also home to the gay "leather" community, so named because of their distinctive dress consisting of biker outfits and other accoutrements of overtly masculine outlaw American subcultures. Today, the "leather" community remains centered at Folsom Street between Eighth and 12th Streets.

Although portions of the old residential hotel sector survived west of Fifth Street, toward the 1980s and 1990s many of them had become inhabited by many of San Francisco's hardest cases, including drug and alcohol addicts and the chronically unemployed. The dichotomy of a large population of society's poorest and neediest living next to some of the city's wealthier residents intensified in the 1990s as the booming Internet economy unleashed a real estate boom in SoMa that has not yet subsided. Changes associated with the influx of Internet companies and "dotcomers" included the conversion of former industrial and warehousing spaces into office space and housing. More significant is the rapid construction of pseudo-industrial "live-work" loft buildings on vacant lots and on the sites of demolished structures, or shoehorned into narrow, historic railroad rights-of-way that bisect some SoMa blocks. The infusion of moneyed Internet workers has helped to revive sections of SoMa that were once underused.

Historic Context of the 350 Eighth Street Project Site

A project-specific *Archaeological Research Design and Testing Plan for the 350 Eighth Street Project* has been developed for the 350 Eighth Street project site by William Self Associates (WSA). The following historical information regarding the 350 Eighth Street project site has been adapted from that document.

During the Gold Rush period, the Project Area, including the 350 Eighth Street project site, was isolated from the activity that was concentrated around the Bay shoreline to the east. In 1853, the 350 Eighth Street project site was located approximately halfway between the shoreline of Mission Bay and the plank road linking the city to the mission. It was situated within an area of undulating sand dunes covered with native vegetation, and between two stretches of tidal marsh flanking Mission Bay. Some structures had been built along the plank road and near the marshy areas to the north and south of the 350 Eighth Street project site, although no construction had been undertaken within the immediate vicinity at that time.

By 1859, new streets had been laid out throughout SoMa and the vicinity of the 350 Eighth Street project site was becoming populated. Folsom Street had been extended to 16th Street, while Harrison Street terminated just west of Seventh Street. The 1859 U.S. Coast Survey Map shows that the northern portion of the 350 Eighth Street project site had been leveled, and a series of small buildings arranged around a large building fronting Eighth Street (then Price Street) had been constructed on the leveled area. This complex of buildings represented the San Francisco Sugar Refinery, founded by George Gordon in 1857.

George Gordon was a “forty-niner” who led the first group of travelers from New York to California via the Nicaragua transit route. Once in San Francisco, he became directly involved in the city’s physical and mercantile development. In 1850, he constructed Howison’s Pier, one of the first wharves in the city, and two years later developed the first block of iron buildings, located on Front Street between Clay and Washington Streets. In 1851, he established the third iron foundry in the city in partnership with Mr. Steen, and not long after laid out South Park in the block bounded by Second, Third, Bryant, and Brannan Streets.

Gordon established the San Francisco Sugar Refinery at the corner of Eighth and Harrison Streets to process raw sugar imported from the Pacific into a household product. The refinery was unable to meet the demands of the West Coast palate, and refined sugar continued to be imported from the East Coast. This caused the market to fluctuate, resulting in oversupply and decreased market value. In response, the Pacific Sugar Refinery was constructed in an adjoining building between 1863 and 1864. The Pacific Sugar Refinery came under the same management as the San Francisco Sugar Refinery, and the two companies merged to form the San Francisco and Pacific Sugar Refinery Company, incorporated in 1862. Half of the stock in the company was owned by San Francisco merchants and the other half was owned by New York merchants.

In 1857, a visitor to the original sugar refinery on the 350 Eighth Street project site described the establishment in the following terms:

The buildings are of brick, built in a massive style, 76 feet front, 120 feet deep, part four stories and basement, and part two stories and basement, with an engine house 20 by 30 feet; a Bone black [used for filtering] factory 22 by 40 feet, and two stories high; a steam cooperage 20 by 100 feet, and boarding house for hands detached.

Raw material was obtained from Manila, Batavia (now Jakarta), and other Pacific islands, and several clipper barks were employed in transporting the materials to the refinery for processing. In 1859, the refinery had the capacity to process 400 tons of sugar and 20,000 gallons of syrup per month. Roughly 150 workers were employed by the San Francisco Sugar Refinery, consisting of approximately 60 men indirectly involved, getting staves, hoops, making barrels, freighting, teaming etc., and 75 to 80 men involved in the refining process and preparation of a finished product.

An examination of the 1858 City Directory and the 1860 Census provides details of the names and positions of several of the men who worked at the refinery, some of whom also lived on the premises at a boarding house run by Owen Casey. Just over half of the occupants of the boarding house were born in Ireland, with the remainder from southern and eastern states within the U.S. A detailed list of the names of the individuals and their roles at the refinery, as well as additional census information, can be found in the ARDTP prepared for the 350 Eighth Street project site.

In 1863, the new Pacific Sugar Refinery was touted as the largest building in California. It was seven stories high and covered an area of 13,000 square feet. In the mid-1860s, the buildings at the San Francisco and Pacific Sugar Refinery were the largest structures in the state devoted to private use. The refinery was one of the leading manufacturing interests in the state and claimed to be the largest sugar refining establishment in the country. The buildings were described as “one of the features of the city of which all San Franciscans were proud.” Bird’s eye views of the city dating to the 1860s depict the refinery as a prominent landmark, dwarfing surrounding buildings. By the mid-1860s, employment at the refinery had risen from 150 men to 250 men, and at this time the refinery was processing over 1,000 tons of raw sugar per month, which produced 5,000 barrels of white sugar, 2,500 barrels of yellow or crushed sugar, and 35,000 gallons of syrup.

George Gordon remained a principal owner and manager of the San Francisco and Pacific Sugar Refinery until his death in May 1869. The company ceased operations in about 1880. (The refinery appears in the 1880 City Directory, but not the 1881 or following directories.) The buildings and equipment remained in place into the 1890s, but by that time the machinery was considered out of date.

By 1869, the general vicinity of the 350 Eighth Street project site was much more densely settled. New streets had been established throughout the neighborhood, and the city’s spread westward can be clearly seen on the 1869 U.S. Coast Survey Map.

By the time the 1889 Sanborn Map was produced, the San Francisco and Pacific Sugar Refinery on the 350 Eighth Street project site was abandoned and in disrepair. Tenements were located on the second floor of a building at what was then 320 Eighth Street, which may have been the original location of Casey’s boarding house. The first floor was vacant at that time. A row of two-story dwellings had been constructed in the western corner of this block, fronting Ringold Street.

By the turn of the 20th century, the buildings of the San Francisco and Pacific Sugar Refinery and the tenements at 320 Eighth Street had been replaced by Recreation Park, a playing grounds for football and baseball. The park was established in about 1897, with the entrance to the park at the corner of Eighth and Harrison Streets and bleachers lining the two streets. In 1897, the University of California, Berkeley football team moved its games from the grounds at Central and Haight Streets to Recreation Park. The California Baseball League also played games at the park.

Between 1903 and 1906 the park was home to the San Francisco Seals, members of the Pacific Coast Baseball League (PCL). Recreation Park had also been the site of several of the PCL Oakland Oaks’ home games during the previous years. After the park burned down in 1906, a new Recreation Park was built at Valencia and 15th Streets in 1907.

In 1899, the dwellings along Ringold Street remained largely as they were 10 years earlier. According to the 1900 U.S. Census, residents of the 350 Eighth Street project site vicinity were exclusively Caucasian and were largely working class families. About half were California-born, mostly to immigrant parents; the largest number of foreign-born residents was from the British Isles, with others from Austria and Germany.

No buildings in the vicinity of the 350 Eighth Street project site, including buildings on the site itself, survived the 1906 conflagration. By 1913, the 350 Eighth Street project site was home to the Union Transfer Company (UTC). The complex of standing structures associated with the UTC was constructed on the fill layer that currently covers the 350 Eighth Street project site, just below the modern surface. The complex consisted of two blacksmiths shops, storage sheds, wagon sheds, stables, an auto truck garage, and a contractor's storage yard. There were a small number of buildings of unknown use, and a small dwelling fronting Harrison Street. A mattress factory had also been established at the corner of Eighth and Harrison Streets.

Around 1936, the Standard Oil Company purchased the property. That year, the remaining existing buildings were removed, and a steel truck maintenance building was constructed. The 1950 Sanborn Fire Insurance Map also reveals an adjacent gas and oil pump, and a small restaurant at the corner of Harrison and Gordon Streets.³¹ By 1950, all UTC buildings were removed. According to building permits, the present structures on the 350 Eighth Street project site were constructed in 1956 and after, and were used most recently by the Golden Gate Bridge, Highway, and Transportation District as a bus parking and inspection yard.³² Please see the discussion under "Architectural Resources on and Surrounding the 350 Eighth Street Project Site" on p. 4.D-25 for additional information about these buildings.

Paleontological Setting

Paleontological resources are the fossilized remains of plants and animals, including vertebrates (animals with backbones), invertebrates (e.g., starfish, clams, ammonites, and coral marine), 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. 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 significant amount of time. 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 Project 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

³¹ Page & Turnbull, 2011.

³² *Ibid.*

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 contains marine and terrestrial fossils including bones and teeth of mammoth and extinct bison and ground sloth, 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 Bay Bridge San Francisco Anchorage. No fossils have been reported from artificial fill in the San Francisco Bay area. Therefore, the potential for paleontological resources to exist in the Project Area is low.

Architectural Resources in the Project Area

Architectural Resources in the Western SoMa Community Draft Plan Area

In 2010, the San Francisco Planning Department completed the SoMa Community Plan Historic Resource Survey (SoMa Survey), which began in 2007. The purpose of the survey is to identify buildings and structures that appear to be eligible for listing on the National Register of Historic Places (National Register), the California Register of Historical Resources (California Register), and those that appear to be locally significant. The Planning Department received funding from the Historic Preservation Fund Committee and was assisted in the survey work by the architecture firm of Page & Turnbull, Inc. This subsection has been adapted from the historic resources technical report prepared for the Draft Plan Area by Page & Turnbull in 2011; this report summarizes survey work done by Page & Turnbull and by Planning Department staff. The SoMa Survey was adopted by the Historic Preservation commission in February 2011 and subsequently was submitted to the California Office of Historic Preservation for inclusion into the California Historical Resources Information System, which is the statewide database of historical resources in California. Accordingly, buildings and districts identified in the SoMa Survey as being eligible for the National and/or California Registers "appear eligible" for the National/California Register(s) "through survey evaluation" (California Historical Resources Status Code 3).³³

The Adjacent Parcels were not included in the SoMa Survey and were also not included in the Page & Turnbull reports; thus, this discussion focuses primarily on the Draft Plan Area. Limited information regarding the Adjacent Parcels was obtained from prior historic surveys conducted in the Adjacent Parcels vicinity; that discussion is provided below following the discussion of the Draft Plan Area.

³³ Formal assignment of California Register Status Codes is done by the State Office of Historic Preservation (OHP) upon submittal to OHP by the Planning Department of the HPC-approved documentation.

Historic Status

Architectural resources within the Draft Plan Area are listed on federal and state historic registers, including the National Register, the California Register, and California Historical Landmarks. The National Register is the official federal list of historic properties that have architectural, historic, or cultural significance at the national, state, or local level. The National Register is administered by the National Park Service, an agency of the United States Department of the Interior. Listing of a property on 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. Within the Draft Plan Area, there are two buildings individually listed in the National Register: the Jackson Brewery Company complex and a portion of the St. Joseph's Church complex (also Landmarks Nos. 199 and 120, respectively).

The State Office of Historic Preservation administers and maintains the California Register. The California Register includes resources listed on, or formally determined eligible for, the National Register and many California Historical Landmarks. The California Register can also include properties designated under local ordinances or identified through local historic resource surveys. The two designated San Francisco Landmarks in the Draft Plan Area, the Jackson Brewery Company complex and the St. Joseph's Church complex, are also listed in the California Register. No California Historical Landmarks are located within the Draft Plan Area.

National Register of Historic Places Listings

Two properties in the Draft Plan Area are listed on the National Register as individual resources: St. Joseph's Church complex at 10th and Howard Streets and the Herbert L. Rothschild Building at 465-475 10th Street. (The garage at 240 10th Street is located within the boundary of the St. Joseph's Church complex but does not contribute to its historic significance.) Two other buildings, both on Townsend Street, have been formally determined eligible for listing in the National Register: the Holbrook, Merrill, and Stetson Company Warehouse (472 Townsend; now the Academy of Art University), and the Paul Wood Warehouse (350 Townsend).

The buildings that make up the Jackson Brewing Company complex form the only historic district listed on the National Register in the Draft Plan Area.

The Western SoMa Light Industrial and Residential Historic District was adopted by the San Francisco Historic Preservation Commission as eligible for listing on the National Register as part of the SoMa Survey in February 2011. Accordingly, this district is also deemed eligible for listing in the California Register and is therefore a historical resource for the purposes of CEQA. The Western SoMa Light Industrial and Residential Historic District (Historic District) contains a total of 721 properties, 478 (66 percent) of which are contributing resources. The Historic District has a period of significance from 1906 to 1936 and consists of a group of resources that are cohesive in scale, building typology, materials, architectural style, and relationship to the street. Contributors to the Western SoMa Light Industrial and Residential Historic District are mostly light industrial and residential properties, with some commercial properties. The Historic District has been identified as significant under Criterion A (Events) as a representation of a noteworthy trend in development patterns—the reconstruction of post-1906 San Francisco—and the establishment of ethnic groups in San Francisco—most notably, the Greek immigrant community but also other working-class immigrants, both families and single men. It is also significant under National Register

Criterion C (Design/ Construction) as a representation of a group of properties that embody the distinctive characteristics of a type, period, or method of construction, and as a representation of a significant and distinguishable entity whose components may lack individual distinction, relative to the reconstruction of the South of Market neighborhood following the 1906 earthquake and fire.

Of the 478 contributing resources in the Historic District, 450 are within the Draft Plan Area. **Figure 4.D-1**, below, identifies the contributors and non-contributors to the Historic District.

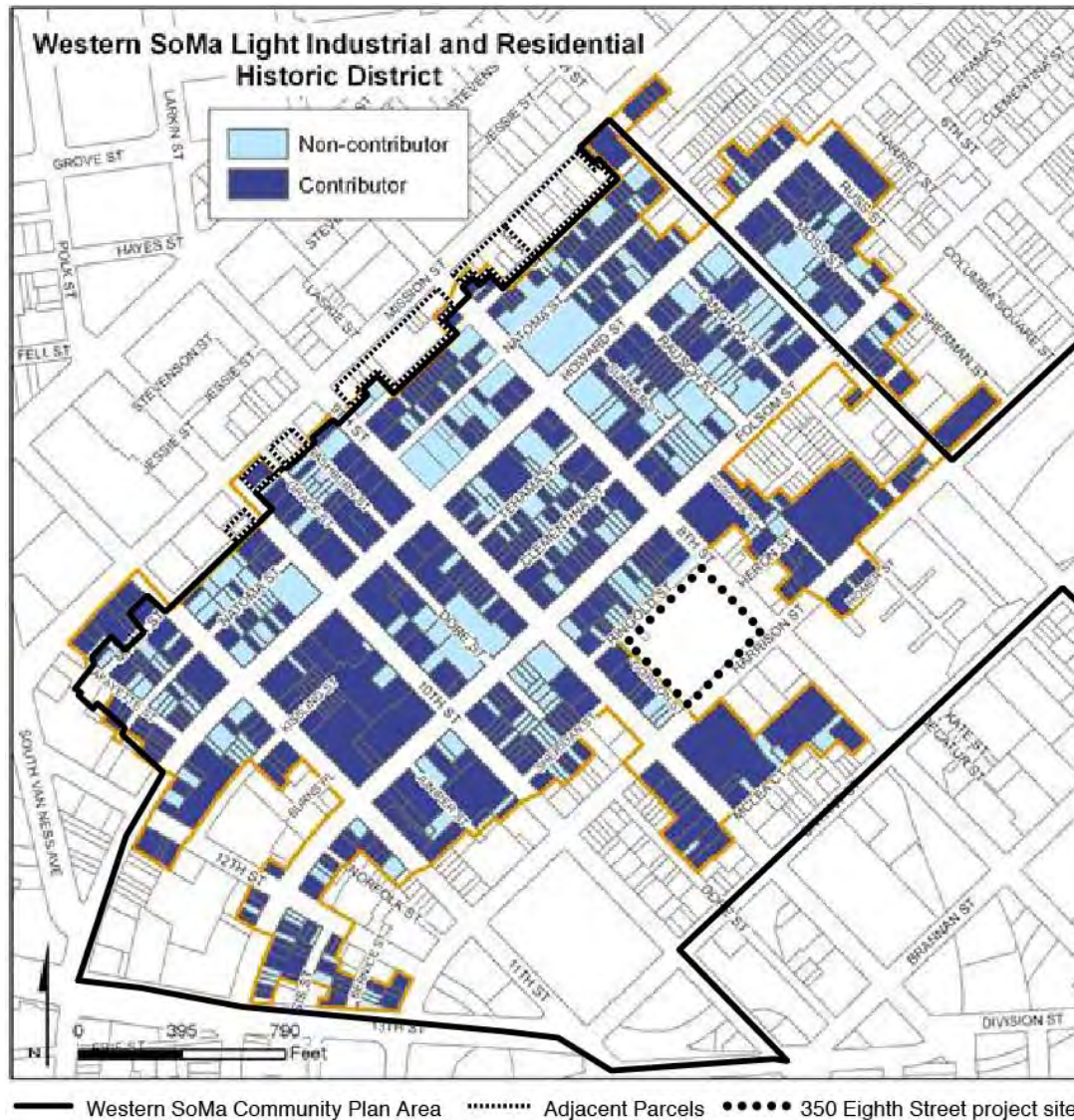


Figure 4.D-1
Western SoMa Light Industrial
and Residential Historic District

As part of the SoMa Survey prepared by the San Francisco Planning Department, and earlier studies, 28 other properties were found eligible for individual listing on the National Register; each of these properties is also a contributor to the Western SoMa Light Industrial and Residential Historic District.

California Register of Historical Resources Listings

The Jackson Brewery, St. Joseph's Church, and the Herbert L. Rothschild Building (all within the Draft Plan Area boundaries) are listed on the National Register and are statutorily listed on the California Register, in accordance with Public Resources Code Section 5024.1. The two buildings at 350 and 472 Townsend Street that have been determined eligible for the National Register are also individually listed on the California Register. Because the Western SoMa Light Industrial and Residential Historic District was found eligible for listing on the National Register, it is statutorily listed on the California Register.

Each of the 28 properties in the Western SoMa Light Industrial and Residential Historic District noted above as having been found eligible in the SoMa Survey for listing in the National Register is thereby also eligible for listing in the California Register. An additional 13 properties were found eligible for individual listing on the California Register. Of these, five are also contributing resources to the Western SoMa Light Industrial and Residential Historic District and one is a contributor to the locally eligible Bluxome and Townsend Warehouse Historic District identified in the SoMa Survey (see further discussion below), while seven are outside an identified historic district.

San Francisco Landmarks and Locally Significant Properties

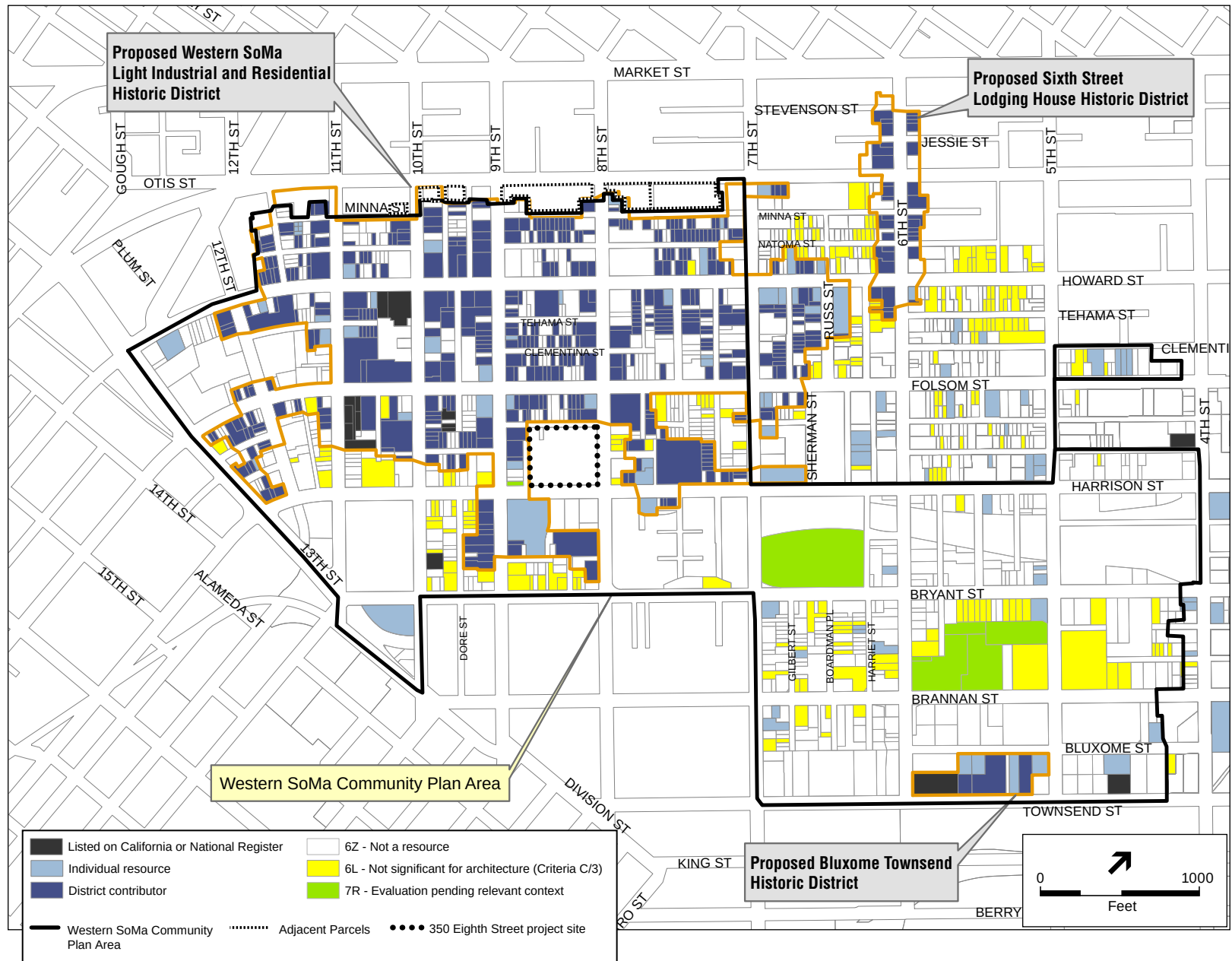
As noted previously, the Jackson Brewing Company complex, the St. Joseph's Church complex, and the James Lick Baths are all designated City Landmarks, under Article 10 of the San Francisco Planning Code.

Article 11 of the Planning Code classifies buildings in the C-3 Downtown Commercial districts and in the South of Market Extended Preservation District³⁴ in five categories reflecting their architectural, historical, and aesthetic value, as established in the Downtown Plan. Category I and II buildings are identified as Significant Buildings and, in general, may not be demolished unless it can be demonstrated that they have no substantial market value or reasonable use, after taking into account costs of rehabilitation and any development rights transferred to another site. Category III and IV buildings are identified as Contributory Buildings, and their retention is encouraged, but not required. Category V buildings are Unrated.

One building within the Draft Plan Area, at 201 Ninth Street, is a Category I structure, while 1235 Mission Street, on one of the Adjacent Parcels, is a Category II building. The building at 149 Ninth Street, also within the Draft Plan Area, is a Category IV building. **Figure 4.D-2**, p. 4.D-21, presents historical resources in and near the Draft Plan Area.

As noted above, the SoMa Survey identified a locally eligible historic district in the Draft Plan Area, the Bluxome and Townsend Warehouse Historic District. The district, located between Fifth and Sixth Streets, contains nine contributing resources with one non-contributing lot; it has a period of significance

³⁴ The South of Market Extended Preservation District (Planning Code Section 819) includes portions of the South of Market district formerly zoned C-3-S, in which Article 11 continues to be in effect, as do the Transfer of Development Rights provisions of Section 128.



SOURCE: San Francisco Planning Department

2008.0877E and 2007.1035E: Western SoMa Community Plan, Rezoning of Adjacent Parcels, and 350 Eighth Street Project

Figure 4.D-2
Western SoMa Historic Architectural Resources and Districts

from 1912 to 1936 and consists of a group of resources that are cohesive in scale, building typology, materials, architectural style, and relationship to the street. Contributors to the district are all industrial warehouse buildings that were constructed in brick or reinforced concrete. Figure 4.D-2 shows the location of this district.

In connection with the SoMa Survey, approximately 20 properties were identified as eligible for individual listing at the local level, in addition to those resources previously identified and noted above as being local landmarks or listed in Article 11 of the Planning Code.

Proximate Resources

One property, the United States Post Office and Courthouse, located at Seventh and Mission Streets and built in 1893-1905, is listed on the National Register of Historic Places (No. 71000188) and is located outside of, but adjacent to, the Draft Plan Area.

Eleven other properties just beyond the Draft Plan Area boundaries were identified as historically significant in the SoMa Survey. They are not located within boundaries of the Draft Plan Area, but are within a block of the Draft Plan Area boundaries, and thus, may be indirectly affected by the Proposed Project. Such effects can include increases in noise, physical changes to the setting, visual changes, including changes to the appearance of nearby buildings, structures, objects, districts, or view sheds (to and from), and changes in land use.

Previous Architectural Surveys

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.

Here Today identified the James Lick Baths at 165 10th Street (p. 297), within the Draft Plan Area, as a local resource.

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 and County of San Francisco to identify and rate what was thought to be the top 10 percent of architecturally significant buildings and structures. Several individual 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 building stock in terms of architectural significance. Summary ratings of 0 or 1 are generally interpreted to mean that the property has some contextual importance.

The properties in this survey were assessed for architectural merit, but other elements of historic significance might not have been considered. Inclusion in the 1976 survey rating is an indication that the San Francisco Planning Department has additional information on the building but not that the building is a “historical resource” under CEQA. Additional research will be required to determine whether a property identified solely as having been included in the 1976 survey qualifies as a “historical resource.” In the Draft Plan Area, 129 properties were included in the 1976 survey. These properties are listed in the Page & Turnbull *Historical Resources Technical Report*, which is available for review at the Planning Department in Case File No. 2008.0877E.

San Francisco Architectural Heritage Surveys

San Francisco Architectural Heritage (Heritage) is the city’s oldest not-for-profit organization dedicated to increasing awareness and advocating 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 *Splendid Survivors*, this survey serves as the intellectual foundation for much of San Francisco’s 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).

As part of the SoMa Survey, which examined and surveyed the properties in the Draft Plan Area, the Heritage Downtown Survey was re-examined and resources were re-evaluated as part of this effort. In the Draft Plan Area, 153 properties were included previously in the Heritage survey. These properties are listed in the Page & Turnbull *Historical Resources Technical Report*, which is available for review at the Planning Department in Case File No. 2008.0877E.

Unreinforced Masonry Building Survey, 1990

In response to the 1989 Loma Prieta earthquake, the San Francisco Landmarks Preservation Board 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 Landmarks Preservation Board 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 1990.³⁵ The Draft Plan Area contains approximately 168 properties included in the UMB survey. Of those, 51 are historical resources, consisting of 44 contributors to the Western SOMA Light Industrial and Residential Historic District and 7 contributors to the Bluxome

³⁵ San Francisco Planning Department, San Francisco Preservation Bulletin No. 11: Historical Resource Surveys (San Francisco: n.d.) 3. Available online at: <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=5085>, accessed April 19, 2012.

and Townsend Warehouse Historic District. These properties are listed in the Page & Turnbull *Historical Resources Technical Report*, which is available for review at the Planning Department in Case File No. 2008.0877E.

Identified Socio-Cultural Resources

The Western SoMa Citizens Planning Task Force has proposed two areas, the Filipino Social Heritage District and the Lesbian Gay Bisexual Transgender Queer (LGBTQ) Social Heritage District, which represent the important social/cultural heritage in the SoMa area (partially but not entirely within the Draft Plan Area). For the purposes of CEQA, many of these resources are not currently considered to be historical resources, since they have not been evaluated according to national, state, or local historic resource guidelines for significance in their associations. Those properties evaluated for other purposes are discussed under “Historic Status” above.

Filipino Social Heritage District

The proposed Filipino Social Heritage Special Use District (SUD) encompasses the Filipino community within SoMa and displays the value of social heritage as an important part of local, regional, and world history. Filipino assets have therefore been identified and mapped according to grassroots methodologies for identification and analysis. The community has also provided recommendations for celebrating these past and present neighborhood resources.

Although some of the Filipino assets fall outside of the Draft Plan Area boundary, the Draft Plan supports the creation of SoMa Philippines, the Filipino Social Heritage SUD, as part of a broader recognition of cultural resources embedded in the history and urban landscape of the Draft Plan Area.

LGBTQ Social Heritage District

The second area of cultural heritage that the Western SoMa Citizens Task Force has recognized is the proposed Lesbian Gay Bisexual Transgender Queer (LGBTQ) Social Heritage SUD. For the LGBTQ community within the Draft Plan Area, social heritage is valuable and an important part of local, regional, and world history. Therefore, LGBTQ assets have been identified and mapped according to grassroots methodologies for identification and analysis. The Task Force has also provided recommendations for celebrating these past and present neighborhood resources, such as plaques or other markers indicating their historical importance.

Architectural Resources on the Adjacent Parcels

A review of the California Historical Resources Inventory System database identified only one previously recorded historical resource on one of the Adjacent Parcels: 1235 Mission Street, a commercial building constructed in 1928 and designed by architects Bliss and Fairweather in a Moorish Revival style with an elaborate polychromed tile cladding. This building was given a San Francisco Architectural Heritage Rating of A (highest importance) and a Category II within Article 11 (significant, possible alterations).

As noted above, the Adjacent Parcels were not included in the SoMa Survey, nor were they discussed in either the 2009 or the 2011 reports prepared by Page & Turnbull.

Architectural Resources on and Surrounding the 350 Eighth Street Project Site

As noted above, the 350 Eighth Street project site is occupied by a large paved lot and three single-story administration and maintenance structures, which would be demolished to accommodate the 350 Eighth Street project.

Current Historic Status

Although the 350 Eighth Street project site had not been previously evaluated for historic significance, it was evaluated for this project by Page & Turnbull.³⁶ The buildings on the project site were found ineligible for individual listing on the National Register or California Register or as local landmarks. The 350 Eighth Street project site was not surveyed as part of the 1976 San Francisco Department of City Planning Architectural Survey, the unreinforced masonry building survey, or the Junior League's *Here Today* survey. It is also not located within an existing or eligible historic district.

In addition, the 350 Eighth Street project site is located outside the boundaries of the National Register-eligible Western SoMa Light Industrial and Residential Historic District, though a handful of contributors to the Historic District are located across the street from the 350 Eighth Street project site, on Ringold and Gordon Streets, and one across Harrison Street. The 350 Eighth Street project site is outside the Period of Significance for the Historic District, and the district boundary was drawn to exclude this parcel, as it would have been non-contributing. The 350 Eighth Street project site is, therefore, not considered to contain historical resources as defined by CEQA.

Description

The 350 Eighth Street project site is located on a 144,000 square-foot lot bounded by Eighth Street to the northeast, Ringold Street to the northwest, Gordon Street to the southwest, and Harrison Street to the southeast. The site is occupied by a large paved lot and three one-story buildings that abut each other to form a "T" shape at the northwest corner/edge. A metal chain-link fence surrounds the property. According to building permits, the present buildings were constructed in 1956 and after.

The two buildings bordering Ringold Street (the top of the "T") feature concrete floors, corrugated metal siding on steel frames, and gable roofs. The northeast façade facing Eighth Street is clad in concrete and horizontal wood siding. Fenestration consists of a ribbon of multi-light steel-sash awning windows on the northwest façade facing Ringold Street, and plate glass replacement windows on the northeast and southeast façades. Entrances consist of paneled wood replacement doors and roll-up metal garage doors. The northern building is used for bus parts storage, while the southern building contains bus parts storage, spray painting, and a locker room for maintenance.

The perpendicular building, which projects into the center of the property, features a concrete foundation, reinforced concrete block walls, and a gable roof with seven projecting metal exhaust pipes on the roof ridge. The southeast end façade terminates in a parapet and features two rows of multi-light steel-sash windows separated by five concrete buttresses. Entrances consist of five bays of roll-up metal garage doors on both the northeast and southwest façades. This building is used as a bus maintenance,

³⁶ Page & Turnbull, 2011.

inspection, and repair garage. The property has most recently been used by the Golden Gate Bridge, Highway, and Transportation District as a bus parking and inspection yard.

Evaluation

This subsection provides an evaluation of 350 Eighth Street project site as a historical resource under the California Register of Historical Resources.³⁷

Criterion 1 (Events)

350 Eighth Street project site does not appear to be associated with events that have made a significant contribution to broad patterns of our history, such that it would be eligible for listing under the California Register Criterion 1. The buildings on this site were constructed after 1956. In previous years, numerous sheds and smaller buildings for the UTC had occupied the lot. The property was redeveloped into its current configuration after the major building booms were complete in the western portion of SoMa, so the property is not representative of the important development trends in the vicinity.

The Standard Oil Company redeveloped the lot beginning in 1936 and leased the property to several transportation-related entities. The Golden Gate Bridge, Highway, and Transportation District, which occupied the property most recently, operates the Golden Gate Bridge, Golden Gate Transit, and Golden Gate Ferry. Both of these companies have operated primarily out of offices elsewhere and own other maintenance facilities. The maintenance buildings on the 350 Eighth Street project site do not appear to be associated with significant historic events relating to the companies. Therefore, 350 Eighth Street project site is not eligible for listing under Criterion 1.

Criterion 2 (Persons)

The 350 Eighth Street project site does not appear to be associated with any persons significant to the history of California or San Francisco, such that it would be eligible under California Register Criterion 2. Preliminary research failed to uncover any individuals who were important in the development of the 1950s-era shed buildings or the operation of the facility. Names on the building permits, such as A.L. Learner, were employees of the companies that owned or leased the property. No identifying information could be found for these people that would indicate significance. Therefore, the 350 Eighth Street project site is not eligible for listing under Criterion 2.

Criterion 3 (Architecture/Design)

The 350 Eighth Street project site does not appear eligible for designation under California Register Criterion 3 as an example of an industrial complex in the Draft Plan Area. The buildings were constructed in and after 1956 and are not remarkable in terms of design, materials, or workmanship for that period. They are not important representatives of a type, period, or method of construction, nor are the designs the work of a master or considered of high artistic value. Considered individually, the 350 Eighth Street project site is not eligible for listing under Criterion 3.

³⁷ Page & Turnbull, 2011.

Criterion 4 (Information Potential)

This criterion is typically reserved for archeological resources. The archaeological sensitivity of this property, including its information potential, is provided below on p. 4.D-36.

Archeological Resources in the Project Area

Potential Archeological Property Types in the Project Area

This subsection has been adapted from the *Archeological Technical Memorandum for the San Francisco General Plan Housing Element EIR*³⁸ and includes revisions and additions specific to the Project Area.

Significance of San Francisco's Archeological Record

Archeological resources typically attain legal 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 legal 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 legal 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 of 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.

On the assumption that prehistoric resources are one of the most vulnerable components of the city's heritage, the draft Preservation Element of the *San Francisco General Plan* states that all indigenous archeological sites, including re-deposited or disturbed prehistoric deposits, shall be presumed to have *prima facie* significant archeological research value. Disturbed or secondary prehistoric archeological deposits, under this policy, would be presumed to have potential information value, in the absence of a convincing demonstration to the contrary.

Archeological Resources from the Prehistoric Period

One known prehistoric archeological resource is located in the Draft Plan Area. This site (CA-SFR-136/H) is a buried shell midden located near the intersection of Eighth and Howard Streets. The site was uncovered during preconstruction archeological investigation in 2002.^{39,40} Historic-period artifacts were mixed with the prehistoric deposit. The site was located between 180 centimeters (cm) (approximately

³⁸ William Self Associates and Randall Dean, 2009.

³⁹ Archeo-Tec, *Pre-construction Archaeological Testing Program*. October 7, 2002.

⁴⁰ Archeo-Tec, *From Bullfights to Baseball Archaeological Research Design and Treatment Plan for the Valencia Gardens Hope VI Project*, 2002.

6 feet) to 275 cm (approximately 9 feet) below grade. Three chert cores, one obsidian core, and small obsidian flakes; clam, mussel, and oyster shells; and faunal bone fragments were located in a dark midden soil. It was determined that the site likely extends into the adjacent lot and under Natoma Street between Seventh and Eighth Streets. Two additional sites (CA-SFR-28 and CA-SFR-148/H) are located just outside of the Draft Plan Area. In the eastern portion of SoMa, seven sites have recently been recognized by the State Historic Preservation Officer as an archeological district eligible for listing in the National Register.⁴¹

Based on previous research, the geo-environmental analysis, and the location and constituents of other prehistoric sites in the greater SoMa vicinity, the Project Area, as a whole, is likely to contain legally significant prehistoric archeological resources.

San Francisco prehistoric-period archeological research has identified two general categories of archeological resources: residential and non-residential sites. 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. Middens are accumulations or concentrations of objects crafted by people, as well as 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. Shell middens 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 midden, or shellmounds. Even among shellmounds, there were varying sizes and perhaps, varying functions.

The simplest division of archeological resources is into residential and non-residential sites.⁴² These are general enough that they encompass evidence from the entire prehistoric period and allow for the study of change through time. Shellmounds are included because they are a site type characteristic of San Francisco and the Bay Area.

Residential sites contain evidence of permanent or semi-permanent occupation. In addition to the midden, 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

⁴¹ Dean, Randall, personnel communication, 2011.

⁴² Ziesing, 2000:131-132.

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 artifactual 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 SOMA is the fact that they have remarkable integrity having been buried under later sand dune deposits. Examples of village sites in the SoMa neighborhood, which includes the Project 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-112⁴³ and CA-SFR-135^{44,45} are characterized by shell midden deposits. The sites were found a little over 16 feet (5 meters) below present day ground surface, and averaged about 1 foot (40 centimeters) in thickness. They appear to have been covered by drifting dune sands prior to the historic period.⁴⁶ Walsh⁴⁷ 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.

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. Pastron suggests that CA-SFR-112 was a sizeable village that had been occupied for a substantial period of time.^{48,49,50} 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.

⁴³ 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.

⁴⁴ 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.

⁴⁵ 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.

⁴⁶ 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.

⁴⁷ Walsh, 1986.

⁴⁸ Pastron, 1999:20, 21.

⁴⁹ Walsh, 1986.

⁵⁰ Ziesing, 2000:43.

Archeological testing conducted by WSA at the nearby 40 Jessie Street 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.⁵¹ 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 Pastron⁵² 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 from nearly 10 feet (3 meters) to over 20 feet (6.3 meters) below street level. 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. 950.⁵³

Recently, a series of five midden deposits was discovered during archeological monitoring of trenching on Fourth Street to relocate utilities from the path of the new Central Subway construction.⁵⁴ 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 determine if they are the same occupation episode, the thickness of the deposits indicate they could be contemporaneous.

Occupation 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

⁵¹ 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.

⁵² Pastron, 1999:21.

⁵³ 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, 2006:18.

⁵⁴ 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.

(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.⁵⁵

Non-residential sites are varied but all lack indications of long-term occupation. They 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 40-centimeter (16-inch) thick deposit of intact remnant shell midden⁵⁶ 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. A shell was dated by radiocarbon 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 Emergent Period of the Augustine Pattern and may have extended into the historic Mission era.⁵⁷ Martin⁵⁸ observed that the site appeared “geographically, functionally, and temporally distinct” from surrounding prehistoric sites. He 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.^{59,60} 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

⁵⁵ Martin 2006:18-19.

⁵⁶ 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.

⁵⁷ Martin, 2006.

⁵⁸ *Ibid.*: iii.

⁵⁹ *Ibid.*: 19.

⁶⁰ Pastron, 1999: 20, 21.

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. 100.⁶¹

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."⁶² 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.⁶³

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.^{64,65} 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 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.⁶⁶

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

⁶¹ *Ibid.*: 20-21.

⁶² 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.

⁶³ Richard Ambro, personal communication, 2007.

⁶⁴ 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.

⁶⁵ 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.

⁶⁶ *Ibid.*

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 Emeryville⁶⁷; and CA-ALA-17, which was first identified in 1876 and more recently rediscovered in West Oakland.^{68,69} 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-604.⁷⁰ 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 and serves as a caution against the search for a facile explanation of shellmound function in prehistory.

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 on-site, 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 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' descendents lived and worked on the island. They worked as laborers in the goat herding and wood cutting enterprise that provisioned ships

⁶⁷ 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.

⁶⁸ 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.

⁶⁹ 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.

⁷⁰ 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.

with meat and wood for their journeys.⁷¹ Missions typically dedicated a cemetery or a small area of a cemetery to indigenous peoples, and there is a cemetery associated with Mission Dolores.^{72,73}

Isolated human remains are occasionally found with no apparent associations. These are important and protected resources. The one example known in San Francisco to date 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.^{74,75,76}

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.

Archeological Resources from the Historic Period

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 Project Area could contain legally 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 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,^{77,78,79} 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,

⁷¹ Boyes, Marcia, *The Legend of Yerba Buena Island*. The Professional Press, Berkeley, CA, 1936.

⁷² Pastron and Ambro, 2008: 31-32.

⁷³ Saunders, Charles Francis, and Joseph Smeaton Chase, *The California Padres and Their Missions*. Houghton Mifflin Company, Boston, MA, 1915:383.

⁷⁴ Martin, 2006: 20.

⁷⁵ Pastron, 1999: 18.

⁷⁶ Ziesing, 2000: 42.

⁷⁷ Praetzelis, 1994.

⁷⁸ Praetzelis and Praetzelis, 1992.

⁷⁹ Ziesing, 2000.

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, 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 legal 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 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 legal 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.

350 Eighth Street Project Site

An archeological research design and treatment plan (ARDTP)⁸⁰ was prepared for the 350 Eighth Street project site that incorporated a record search at the Northwest Information Center (File No. 09-1644), a record search of the sacred land file by the Native American Heritage Commission (July 8, 2010), and attempted consultation by correspondence (August 11, 2010) with Native American contacts for San Francisco. Much of the following discussion and analysis is based on the 350 Eighth Street project site ARDTP.

⁸⁰ William Self Associates, Inc., *Final Archaeological Research Design and Treatment Plan for the 350 Eighth Street Project*. September 2011.

Prehistoric Archeological Sensitivity

The natural and cultural formation of the 350 Eighth Street project site was interpreted in the geotechnical study⁸¹ prepared for the project as having the following geologic profile: artificial fill generally to a depth of 5 to 6.5 feet below ground surface (bgs) but to a depth of 10.5 to 12 feet in the southeast corner dating from 1906 or after; native. Native sand dune deposits underlie the fill to a depth of 35 to 40 feet bgs. Below the native sand dune deposits, clay and silts associated with Middle to Late Holocene Bay Mud deposits are present at least in a portion of the 350 Eighth Street project site within a depth of 41.5 to 50 feet bgs. No dating of the sediments within the 350 Eighth Street project site has occurred, so any conjecture of the temporal context of sand dune deposition within the site, for example, if the deposit dates before or after the period of relative sand dune stability in SoMa (50 B.C. – A.D. 950), is at this time interpretive.

If the geoarcheological study undertaken for the adjoining block to the east conducted for the SF-80 Bayshore Viaduct Seismic Retrofit Project represents geological conditions comparable to those of the 350 Eighth Street project site,⁸² it is likely that soils encountered approximately 37 to 38 feet bgs in one boring are Middle to Late Holocene bay and marsh deposits. These deposits were formed when sea levels rose into the area and are often referred to as Bay Mud in other parts of the Bay area.⁸³ The upper surface of the Colma Formation sands, which represents a stable living surface (paleosol) available for human occupation from the end of the Pleistocene to the Holocene era, is locally regarded as, in effect, a cultural basement level below which evidence of human occupation is expected. Corings undertaken for the 2007 geotechnical study did not indicate the presence of the Colma Formation within the project site to depth explored (51 feet bgs).

No prehistoric archeological materials were indicated within the fill layer, dune sand, or underlying bay mud. However, “construction and building materials” were observed in the fill layer between 0 and 4 feet bgs. It is not known at this time if the materials described are legally significant historical archeological resources. Additionally, wood and brick debris associated with the 1906 earthquake and fire were encountered within the fill layer (between 5 to 10 feet bgs). Additionally, several of the bores indicated that the fill layer was composed of silty and sandy clays that were yellow-brown to red in color with black mottling. This coloration may be an indicator of post-1906 earthquake fill.

The Lower and Upper Middle periods (500 B.C. to A.D. 1000) were a period of relative sand dune stability. Sand dune deposits in SoMa from this period are considered to be highly archeologically sensitive since the majority of prehistoric sites in SoMa documented to date have been discovered in these geologic contexts. Since sand dune deposits from this period were determined to be absent in the adjoining block to the east, this highly archeologically sensitive geologic formations may be absent in the 350 Eighth Street project site as well. The archeological period known as the Late Period (A.D. 1000 to 1500) was a time of active sand dune formation in SoMa, thus making the area, according to

⁸¹ Treadwell and Rollo, *Preliminary Geotechnical Investigation 8th and Harrison Streets, San Francisco California. Project No. 4595.01.* May 23, 2007.

⁸² Praetzellis, Mary (editor), *SF-80 Bayshore Viaduct Seismic Retrofit Projects Report on Construction Monitoring, Geoarchaeology, and Technical and Interpretive Studies for Historical Archaeology*, 2004; pp. 28 – 29. Unpublished report available online at <http://www.sonoma.edu/asc/publications/sf80bayshore/>, accessed April 19, 2012.

⁸³ Schlocker, Julius, *Geology of the San Francisco North Quadrangle, California: US Geological Survey Professional Paper 782*, 1974:83-84.

geoarcheologists, comparatively unwelcoming for human occupation or use. The archeological record bears this out, since most prehistoric sites in SoMa date from before A.D. 1000. However, there are some exceptions, such as CA-SFR-1544/H, which was located on an ancient alluvial fan associated with the Colma Formation buried beneath historic fill and is a Late Period site occupied from approximately 1000 to 1800 A.D. So even if the native sand dune deposits within the 350 Eighth Street project site date from Late Period characterized by active sand dune deposition, this ecological factor does not alone preclude the potential for prehistoric deposits to be present. Bay Mud deposits, which are present below the sand dune sediments in at least a portion of the 350 Eighth Street project site, are archeologically more equivocal. Having been subject to, at least, periodic tidal inundation, Bay Mud sediments did not represent an occupiable surface for prehistoric populations. However, where Bay Mud is associated with a low energy depositional marsh environment, it facilitates the preservation of archeological materials. In addition, where Bay Mud sediments were near a paleoshoreline, there is an increased potential for the presence of prehistoric archeological deposits. Since it is known that the ancestral Yerba Buena Cove was much larger than represented on historical maps, there is a potential that prehistorically archeologically sensitive nearshore Bay Mud deposits are present within the 350 Eighth Street project site.

Historic Period Archeological Sensitivity

There is potential for encountering historic-period archeological features and deposits in the 350 Eighth Street project site. Although the 350 Eighth Street project site was subject to significant ground disturbance during the 1800s, it does not appear to have been altered to any great extent after the construction of the Pacific Sugar Refinery, aside from the deposition of fill related to the 1906 earthquake and fire. In addition to the refinery complex, the seven dwellings lining Ringold Street that are shown on the 1889 Sanborn Map had rear yard structures that likely included privies and wells. Other household debris may have also been discarded in these rear yards, representing sheet refuse. Likewise, the areas between the refinery buildings may have also housed privies and refuse deposits. It is likely that residual historic deposits such as privies, wells, and sheet refuse deposits exist under the fill layer where these structures once existed on the 350 Eighth Street project site.

It is also likely that privies and sheet refuse areas were located under the Recreation Park bleachers near the entrance to the park, near the corner of Eighth and Harrison Streets. If present, it is likely that these resources underlie the fill layer that currently covers the 350 Eighth Street project site. It is assumed that this fill was deposited following the 1906 earthquake and fire, and likely contains rubble from the disaster. The structures associated with the Union Transfer Company were likely built upon this fill layer, and it is likely that evidence of the company's presence is evident within the fill. Additionally, two blacksmith shops were located in the northern portion of the property, one located at the corner of Eighth and Ringold Streets and the other located mid-block on Eighth Street.

The 350 Eighth Street project site was likely, at least partially, connected to the San Francisco sewer system by 1870.⁸⁴ According to this source, a brick sewer had been installed at Eighth and Harrison Streets between 1869 and 1870. It cannot be ascertained exactly when dwellings and structures depicted on the 1889, 1899, and even the 1913 Sanborn maps were using the sewer system, so it should be assumed for the purposes of this analysis that privies were being used into the early 20th century. By 1949, it is

⁸⁴ San Francisco Public Utilities Commission website: <http://sfwater.org/index.aspx>.

assumed that the 350 Eighth Street project site was fully connected to the sewer system, and the likelihood of encountering privies associated with structures seen on the 1949 Sanborn map is very low.

Regulatory Setting

Applicable federal, state, and local regulations and planning efforts are discussed where relevant under “Environmental Setting” above. In addition, Chapter 3, Plans and Policies, provides information on other plans and policies that address cultural resources issues and are applicable to the Draft Plan Area and the Adjacent Parcels.

Impacts and Mitigation Measures

Significance Criteria

For purposes of this EIR, the Proposed Project would result in 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; or
- Disturb any human remains, including those interred outside of formal cemeteries.

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 an historical resource would be materially impaired.” The significance of an historical resource is “materially impaired,” according to CEQA *Guidelines* Section 15064(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 an 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) 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 resources will not mitigate the effects to a point where clearly no significant effect on the environment would occur."⁸⁵ 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.

Significance of Archeological Resources

An archeological resource can be significant as both or either a "unique" archeological resource and as a "historical resource," but the process by which the resource is identified, under CEQA, as either one or the other is distinct (CEQA Section 21083.2(g) and CEQA *Guidelines* Section 15064.5(a)(2)).

An archeological resource is a "historical resource" under CEQA if the resource is:

- 1) Listed on or determined eligible for listing on the California Register of Historical Resources (CEQA *Guidelines* Section 15064.5). This includes National Register-listed or -eligible archeological properties;
- 2) Listed in a "local register of historical resources;"⁸⁶ or
- 3) Listed in a "historical resource survey" (CEQA *Guidelines* Section 15064.5(a)(2)).

Generally, an archeological resource is determined to be a "historical resource" due to its eligibility for listing on the California Register or National Register because of the potential scientific value of the resource, that is, the resource "has yielded, or may be likely to yield, information important in prehistory or history" (CEQA *Guidelines* Section 15064.5 (a)(3)). An archeological resource may be California Register-eligible under other evaluation criteria, such as Criterion 1, association with events that have made a significant contribution to the broad patterns of history; Criterion 2, association with the lives of historically important persons; or Criterion 3, association with the distinctive characteristics of a type, period, region, or method of construction. Appropriate treatment for 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.

Failure of an archeological resource to be listed in any of these historical inventories is not sufficient to conclude that the archeological resource is not a "historical resource." When the Lead Agency believes there may be grounds for a determination that an archeological resource is a "historical resource," then

⁸⁵ Case law has held that, at least in the instance of a major historical resource, commemoration of the resource cannot mitigate, to a less-than-significant level, the impact of demolition of the resource. ("A large historical structure, once demolished, normally cannot be adequately replaced by reports and commemorative markers." *League for Protection of Oakland's Architectural and Historic Resources v. City of Oakland*, 52 Cal. App. 4th 896. 1997.)

⁸⁶ A "local register of historical resources" is a list of historical or archeological properties officially adopted by ordinance or resolution by a local government (Public Resources Code Section 5020.1 (k)).

the Lead Agency should evaluate the resource for eligibility for listing on the California Register (CEQA *Guidelines* Section 15064.5(a)(4)).

A “unique archeological resource” is a category of archeological resources created by the CEQA statutes (CEQA *Guidelines* Section 21083.2(g)). An archeological resource is a unique archeological resource if it meets any of one of three criteria:

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

Under CEQA, evaluation of an archeological resource as a “historical resource” is privileged over the evaluation of the resource as a “unique archaeological resource,” in that CEQA requires that “when a project will impact an archaeological site, a Lead Agency shall first determine whether the site is an historical resource” (CEQA *Guidelines* Section 15064.5 (c)(1)).

Evaluation of an Archeological Resource as Scientifically Significant

In requiring that a potentially affected archeological resource be evaluated as a historical resource, that is as 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) for CEQA providers is to serve as the methodological standard by which the scientific significance, and thus, the California Register eligibility, of an archeological resource is to be evaluated. As guidance for the evaluation of the scientific value of an archeological resource, the OHP has issued two guidelines: *Archaeological Resource Management Reports* (1989) and the *Guidelines for Archaeological Research Designs* (1991).

Integrity of an Archeological Resource

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

For an archeological resource that, as evaluated for California Register eligibility under Evaluation Criterion 4, “has yielded or may be likely to yield information important to prehistory or history,” integrity is conceptually different from integrity as the term 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. In archeology, 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. The integrity test for an archeological resource is whether the resource can yield sufficient data (in type, quantity, quality, and diagnosticity) to address significant research questions. 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.

Approach to Analysis

The analysis considers direct and indirect impacts on both known cultural and paleontological resources as well as inadvertent discoveries within the Draft Plan Area, the Adjacent Parcels, and the 350 Eighth Street project site. For the purposes of this analysis, cultural resources of the built environment (including historic-period architectural and structural resources) are analyzed as potential historical resources as defined in CEQA *Guidelines* Section 15064.5. Archeological resources, including those considered historical resources (eligible for listing on the California Register) as well as those considered unique archeological resources (meeting the criteria listed in Public Resources Code Section 21083.2), are analyzed as archeological resources.

Approach to Analysis of Architectural Resources

Potential impacts on architectural resources are assessed by determining whether the Proposed Project would affect any such resources that have been identified as historical resources for the purposes of CEQA. While most historic buildings and many historic-period archeological resources are significant because of their association with important events, people, or styles (California Register Criteria A, B, and C), the significance of most prehistoric and historic-period archeological resources is usually assessed under Criterion D. This criterion stresses the potential for discovering important historical information within the site rather than the resource’s significance as a surviving example of a type of construction or its association with an important person or event.

Once a resource has been identified as significant, it must be determined whether the project would “cause a substantial adverse change in the significance” of the resource (CEQA *Guidelines* 15064.5(b)). A substantial adverse change in the significance of a historical resource means “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired” (CEQA *Guidelines* Section 15064.5(b)(1)). A historical resource is materially impaired through the demolition or alteration of the resource’s physical characteristics that convey its historical significance and that justify its inclusion in the California Register (CEQA *Guidelines* Section 15064.5(b)(2)(A)).

Approach to Analysis of Archeological Resources

The determination of whether an effect on an archeological resource is significant depends on the effect of a particular project on those characteristics of the archeological resource that make the archeological resource important. For an archeological resource that is an historical resource because of its prehistoric or historical information value, that is, its scientific data, a significant effect is impairment of the potential information value of the resource. 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, for an archeological resource eligible for the California Register under

Criterion 4, a significant adverse effect on its significance 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 of an archeological resource is not feasible, data recovery, in accord with a data recovery plan prepared and adopted by the Lead Agency prior to any soils disturbance, is the appropriate mitigation. 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. Final studies reporting the interpretation, results, and analysis of data recovered from the archeological site are deposited in the California Historical Resources Regional Information Center (CEQA *Guidelines* Section 15126.4(b)(3)(C)).

Approach to Analysis of Human Remains

Under state law, human remains and associated burial items may be significant resources in two ways: they may be significant to descendent communities for patrimonial, cultural, lineage, and religious reasons, and they may also be important to the scientific community, such as prehistorians, epidemiologists, and physical anthropologists. The specific stake of some descendent groups in ancestral burials is a matter of law for some groups, such as Native Americans (CEQA *Guidelines* Section 15064.5(d), Public Resources Code Section 5097.98). In other cases, the concerns of the associated descendent group regarding appropriate treatment and disposition of discovered human burials may become known only through outreach. Beliefs concerning appropriate treatment, study, and disposition of human remains and associated burial items may be inconsistent or in conflict between descendent and scientific communities. CEQA and other state regulations concerning Native American human remains provide the following procedural requirements to assist in avoiding potential adverse effects on human remains within the contexts of their value to both descendents 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 24 hours of notification or the project applicant rejects the recommendations of the MLD, the Native American human remains and associated burial items must be reburied in a location not subject to future disturbance within the project site (Public Resources Code Section 5097.98).
- If potentially affected human remains/burial may have scientific significance, whether or not having significance to Native Americans or other descendent communities, then under CEQA, the appropriate mitigation of effect may require the recovery of the scientific information of the

remains/burial through identification, evaluation, data recovery, analysis, and interpretation (CEQA *Guidelines* Section 15064.5(c)(2)).

The impact analysis for paleontological resources is based on the paleontological potential of the rock units to be disturbed by project-related excavations.

Approach to Analysis of Paleontological Resources

As discussed under Paleontological Setting, on page 4.D-16, no fossils have been reported from artificial fill in the San Francisco Bay area and the potential for paleontological resources to exist in the Project Area is low. Therefore, no additional discussion of this topic is provided below.

Impacts of the Western SoMa Community Plan and Rezoning of Adjacent Parcels (Program-Level Analysis)

Impact CP-1: The implementation of the Draft Plan and Rezoning of Adjacent Parcels (individually and in combination) could indirectly result in the demolition of individual historic architectural resources or contributing resources to a historic district located in the Project Area, causing a substantial adverse change in the significance of a historical resource as defined in CEQA *Guidelines* Section 15064.5. (Significant and Unavoidable with Mitigation)

Neither the Draft Plan nor the Rezoning of Adjacent Parcels would directly result in demolition or alteration of historical resources. However, neither would the Draft Plan nor the proposed Rezoning, if implemented, preclude the loss of historical resources. Accordingly, the potential for demolition is analyzed here.

One of the main goals of the Draft Plan is to preserve and adaptively reuse historical and cultural resources within the Draft Plan Area, and policies within the “Preservation” section of the Draft Plan protect City Landmarks and other designated resources. However, the proposed rezoning, with its increase in allowable building heights and changes in permitted uses, may nevertheless create greater development pressure than under current land use controls. This could encourage the demolition of some of these resources, including those that contribute to the California Register-eligible historic districts. For example, these development pressures include up-zoning height, density, and floor area ratios (FARs), and changing allowable uses to increase value and profitability.

Areas particularly vulnerable are those where the greatest height limit increases would be allowable, such as the properties facing south on Townsend Street within the Bluxome and Townsend Warehouse Historic District and the mixed-use (primarily light industrial) contributors on major arteries in the Western SoMa Light Industrial and Residential Historic District. As such, the Draft Plan may result in a significant adverse impact on historical resources.

Those areas that would be particularly affected by an allowable increase in height include the Folsom Street corridor, where height limits would change from 50 to 65 feet; sections on primary thoroughfares north of Harrison Street, where height limits would change from 50 to 55/65 feet; the industrial blocks between Harrison and Bryant Streets, where height limits would change from 40 to 40/55 feet; the mixed-

use block bounded by 12th, 13th, Howard, and Folsom Streets, where height limits would change from 40 to 55/65 feet; the parcel at the east corner of Eighth and Folsom Streets, where height limits would change from 40/50 to 65/75 feet; and Townsend Street from two parcels west of Fourth Street to Seventh Street, where height limits would change from 65 to 85 feet. The prevailing height of contributory buildings is about 30 to 40 feet.

When an environmental evaluation application is filed with the Environmental Planning Division of the San Francisco Planning Department for a project that would result in demolition of a known or potential historical resource, the supporting Historic Resource Evaluation (HRE) is generally required to be prepared 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 is typically forwarded to a Historic Preservation Technical Specialist within the Current Planning Division for review. Through this process, alternatives and mitigation measures may be identified that may preserve or rehabilitate historical resources.

It is noted that some potential effects on historical resources would likely be ameliorated by the application of Planning Code Section 803.9, Commercial Uses in Mixed Use Districts, which, with implementation of the Draft Plan, would be applied to designated City Landmarks and contributors to City Landmark Districts, in both cases listed in Planning Code Article 10.⁸⁷ The application of Section 803.9 is intended to advance historic preservation by allowing historical resources to be converted to other uses, provided that any changes to these buildings are consistent with the Secretary of the Interior's Standards for Rehabilitation. Only the three existing City Landmark buildings, as well as buildings designated as landmarks in the future would be permitted these type of use changes.

Despite the City and County of San Francisco's CEQA review process and the application of Planning Code Section 803.9 to designated City Landmarks and contributors to City Landmark Districts, it is likely that the implementation of the Draft Plan may result in a significant adverse impact on historical resources. To further reduce this indirect impact, **Mitigation Measures M-CP-1a to M-CP-1c**, as outlined below, would be required within the Draft Plan Area. Although this would reduce impacts on the historical resources, this impact would not be reduced to a less-than-significant level and would remain significant and unavoidable.

The Rezoning of Adjacent Parcels would also not directly affect historical resources in the Project Area. As noted under "Environmental Setting," above, only 1235 Mission Street is identified as a previously recorded historical resource among the Adjacent Parcels buildings. The Rezoning of Adjacent Parcels could create greater development pressures over time, not only on the 1235 Mission building, but also on other potential resources on the Adjacent Parcels that may not have been identified yet. To reduce potential indirect impacts on historical resources on the Adjacent Parcels, any future development on the Adjacent Parcels would be required to incorporate Mitigation Measures M-CP-1a to M-CP-1c, as outlined below. According to Section 15126.4 (b)(2) of the Public Resources Code (CEQA *Guidelines*), documentation of a historical resource, by way of historic narrative, photographs, and/or architectural

⁸⁷ As part of the Proposed Project, application of Section 803.9 would be more limited in the Western SoMa Plan Area than elsewhere in Eastern Neighborhoods Mixed-Use Districts, where this section currently applies to all historical resources determined eligible for the California Register.

drawings (often Historic American Buildings Survey- or HABS-level), as mitigation for the effects of demolition, as defined by Article 10, will typically not mitigate the effects to less-than-significant levels because the resource is permanently lost and the recordation documents are not readily accessible to the public. Therefore, although this measure would reduce impacts on the historical resources within the Adjacent Parcels, as with the Draft Plan, this impact would not be reduced to a less-than-significant level and would remain significant and unavoidable.

- Mitigation Measures M-CP-1a to M-CP-1c, below, would apply in circumstances when a determination is made by the Environmental Review Officer during the environmental review process that a specific property is a historical resource for the purposes of CEQA and would apply only to those structures that would be demolished.

Mitigation Measures

- **M-CP-1a: Documentation of a Historical Resource.** To document the buildings more effectively, sponsors of individual projects that would cause a substantial adverse change in the significance of a historical resource through demolition shall prepare Historic American Buildings Survey (HABS)-level photographs and an accompanying HABS Historical Report, which shall be maintained onsite, 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 Historical Report Standards. 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 in consultation with Planning Department's Preservation staff.

The report shall be reviewed by the San Francisco Planning Department's Preservation staff for completeness. In addition, copies of the photographs and report shall be made available to the following repositories, at minimum: San Francisco History Center at the San Francisco Public Library, San Francisco History Center at the San Francisco Public Library, San Francisco Architectural Heritage, and the San Francisco Planning Department. 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 lessen the effects to a less-than-significant level.

- **M-CP-1b: Oral Histories.** For projects that would demolish a historical resource 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 or other interested historical institution. Although implementation of this mitigation measure may reduce impacts on historical resources, it is not expected to lessen the effects to less-than-significant levels.

M-CP-1c: Interpretive Program. For projects that would demolish a historical resource for which Planning Department preservation staff determined that such a measure would be effective and feasible, the project sponsor shall work with a Historic Preservation Technical Specialist 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 may be 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. Although implementation of this mitigation measure may reduce impacts on historical resources, it is not expected to lessen the effects to less-than-significant levels.

Significance after Mitigation: Significant and Unavoidable.

Impact CP-2: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would lead to the construction of incompatible new buildings adjacent to, or major alterations of, historic architectural resources in the Project Area, or those immediately adjacent to it, and no substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5 would occur. (Less than Significant)

The Draft Plan and the Rezoning of Adjacent Parcels could encourage infill development throughout the Project Area, some of which could differ in scale, design, or materials compared to nearby historical resources and potentially alter their historic context. This would be particularly true within the Draft Plan Area, on Folsom, Ninth, 10th, and Townsend Streets, where height limits would be increased. New construction within a historic district would add non-contributing resources inside the historic district's boundaries.

In general, absent the application of appropriate guidelines, the addition of new infill construction has the potential to add a number of non-contributing resources within the boundaries of the historic 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 integrity of setting or conveys the sense of a historic environment. Likewise, individual historical resources and contributing resources to historic districts that are located within the Draft Plan Area or on the Adjacent Parcels (i.e., the 1235 Mission building) 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 exterior and interior appearances of these resources such that their character-defining features would be altered.

However, under implementation of the Draft Plan, alterations to or near existing historic buildings within the Draft Plan Area would be guided by the principles provided in the proposed *Design Standards for Western SoMa Special Use District* (Design Standards), which identify standards for the adaptive reuse of

historic structures, as well as in-fill development in the National and California Register-eligible Western SoMa Light Industrial and Residential Historic District. The purpose of the Design Standards is to maintain the integrity of the eligible historic district and provide guidance for projects proposed within the Draft Plan Area boundaries. The guidelines contained therein are intended to accomplish the following: 1) provide guidance to Department staff, property owners, and design professionals for new buildings and remodeling existing structures, 2) ensure that new development is compatible with its surrounding neighborhood, 3) establish a high level of design quality, 4) reinforce the special qualities of the area's visual and aesthetic character, and 5) streamline the development review process by clearly communicating community expectations to property owners and developers.

The Design Standards identify standards for the adaptive reuse of historic structures, as well as in-fill development in the National and California Register-eligible Western SoMa Light Industrial and Residential Historic District and the California Register-eligible Bluxome-Townsend Warehouse Historic District. The purpose of the Design Standards is to maintain the integrity of the eligible historic district and provide guidance for projects proposed within the Draft Plan Area boundaries. With respect to historical resources, the Design Standards are divided into Design Standards for Additions to (and Near) Buildings of Historic Merit and Design Standards for In-fill Development in Historic Districts and Contiguous to Historic Buildings. These standards would apply to the individually significant and contributing resources within the eligible historic district, including California Register-eligible historic districts. The Guidelines for new construction include specific guidance with respect to Scale and Massing of Additions, Façade Treatment, Lot Development Patterns, Front Set Back, Window Frame Size and Shape, Glass Size and Divisions, Sash Elements Width and Depth, Materials and Finish, Glass Characteristics, Building Form and Materials, Parking, Loading and Garages and Open Space. The Design Standards are based on the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Secretary's Standards). The Secretary's Standards provide guidance for working with historic properties, and have been adopted by the Historic Preservation Commission to evaluate proposed rehabilitative work on historic properties.

As noted in CEQA Section 15064.5(b)(3), "Generally, a project that follows with the Secretary of the Interior's Standards for the Treatment of Historic Properties shall be considered as mitigated to a less-than-significant impact on the historical resource." With implementation of these Design Standards which are part of the Draft Plan, adaptive reuse of historic structures, as well as in-fill development in the eligible historic district in the Draft Plan Area, would not be expected to be out of scale or character with the historic districts that are within or adjacent to the Project Area, nor would it be expected to alter existing spatial relationships or introduce new design elements that are not compatible with the character-defining features of the historic districts. Therefore, alterations to existing buildings and new construction within the Plan Area would result in a less-than-significant impact to historical resources.

Although the Design Standards would not apply to the Adjacent Parcels, nearly all of the Adjacent Parcels are located outside of the National Register-eligible Western SoMa Light Industrial and Residential Historic District; thus the impact related to Rezoning of Adjacent Parcels would also be anticipated to be less than significant. Only 1235 Mission Street is identified as a previously recorded historical resource among the Adjacent Parcels buildings. However, this building, like most of the

Adjacent Parcels, is within the Extended Preservation District that, as described in the Setting, encompasses the portion of the 1990 South of Market Plan area formerly zoned C-3. As such, the building at 1235 Mission Street is a Category II (Significant) Building under *Planning Code* Article 11, which provides for additional controls with respect to alterations. Based on the above, neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would lead to the construction of incompatible new buildings adjacent to historical resources in the Project Area, or those immediately adjacent to it, and this impact would be less than significant.

Mitigation: None required.

Impact CP-3: The Draft Plan would result in streetscape improvements within a historic district, but would not affect the district's integrity of setting in a way that could result in a substantial adverse change in the significance of a historical resource as defined in CEQA *Guidelines* Section 15064.5. (Less than Significant)

Integrity of setting is an important facet of a historic district. The Draft 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.

As part of the Draft Plan, transportation and open spaces would be altered to improve circulation and increase the amount of green space. In order to guide these alterations, the Draft Plan includes alley treatments, designations of certain streets as limited truck access routes, installations of sidewalk bulb-outs, public realm greening, and parking management. The implementation of these aspects of the Draft Plan have the potential to affect the integrity of setting of historic districts within the Draft Plan Area. However, any potential impacts would be avoided through the Draft Plan's proposed Design Standards, described above under Impact CP-2; as noted there, the Design Standards would include specific standards with respect to projects in historic districts and adjacent to individual historic buildings. The standards would also guide large site development and streetscape improvements.

Mitigation: None required.

Impact CP-4: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels 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 geo-environmental analysis and the location and constituents of known prehistoric and historic-period archeological resources, shows that legally significant resources are present in the Draft Plan Area and on the Adjacent Parcels and that currently unknown resources are likely to be in the Draft Plan Area and on the Adjacent Parcels. These resources could be damaged or

destroyed through earthwork, ground stabilization, or other subsurface construction activities that would be undertaken pursuant to implementation of the Draft Plan and/or Rezoning of Adjacent Parcels.

Effects on 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. However, the implementation of the Draft Plan and/or Rezoning of Adjacent Parcels has the potential to result in significant impacts on archeological resources as new buildings are gradually constructed throughout the Project Area. The potential for a significant adverse effect on legally significant archeological resources resulting from the implementation of the Proposed Project are appropriately addressed at the project level, such as for the 350 Eighth Street project, where the site-specific characteristics of archeological resources can be evaluated with respect to a given project proposal. The City has well-established review criteria and procedures to evaluate impacts on archeological resources, and mitigate them, as necessary, at the project level.

Implementation of these procedures, as described below in **Mitigation Measure M-CP-4a**, would be applicable to both the Draft Plan and the Rezoning of Adjacent Parcels and would reduce impacts to less-than-significant levels for both of these components.

Mitigation Measure

M-CP-4a: Project-Specific Preliminary Archeological Assessment. Project sponsors wishing to obtain building permits from the City are required to undergo environmental review pursuant to CEQA. The San Francisco Planning Department, as the Lead Agency, requires an evaluation of the potential archeological effects of a proposed individual project. Pursuant to this evaluation, the San Francisco Planning Department has established a review procedure that may include the following actions, carried out by the Department archeologist or by a qualified archeological consultant, as retained by the project sponsor.

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 and located within properties within the Draft Plan Area or on the Adjacent Parcels 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, or a Preliminary Archeological Sensitivity Study (PASS) shall be prepared by an archeological consultant with from the pool of qualified archeological consultants maintained by the Planning Department archeologist. The PASS shall:

- Determine the historical uses of the project site based on any previous archeological documentation and Sanborn maps;

- Determine types of archeological resources/properties that may have been located within the project site and whether the archeological resources/property types would potentially be eligible for listing on the California Register;
- Determine if 19th or 20th century soils-disturbing activities may have adversely affected the identified potential archeological resources;
- Assess potential project effects in relation to the depth of any identified potential archeological resource;
- Provide a conclusion that assesses whether any California Register-eligible archeological resources could be adversely affected by the proposed project and recommends appropriate further action.

Based on the PAR or PASS, the Environmental Review Officer (ERO) shall determine if an Archeological Research Design Treatment Plan (ARDTP) shall be required to more definitively identify the potential for California Register-eligible archeological resources to be present within the project site and determine the appropriate action necessary to reduce the potential effect of the project on archeological resources to a less-than-significant level. The scope of the ARDTP 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).

Additionally, excavation, grading, and installation of building foundations as part of future construction activities within the Draft Plan Area or on the Adjacent Parcels could expose and cause impacts on unknown archeological resources, which would be a significant impact. Implementation of **Mitigation Measure M-CP-4b** would reduce those impacts to less-than-significant levels for both of these components.

Mitigation Measure

M-CP-4b: Procedures for Accidental Discovery of Archeological Resources. This mitigation measure is required to avoid any potential adverse effect on accidentally discovered buried or submerged historical resources as defined in *CEQA Guidelines* Section 15064.5(a)(c).

The project sponsor shall distribute the San Francisco Planning Department archeological resource “ALERT” sheet to the project prime contractor; to any project subcontractor (including demolition, excavation, grading, foundation, pile driving, etc. firms); and to utilities firms involved in soils-disturbing activities within the project site. Prior to any soils-disturbing activities being undertaken, each contractor is responsible for ensuring that the “ALERT” sheet is circulated to all field personnel, including machine operators, field crew, pile drivers, and supervisory personnel. The project sponsor shall provide the Environmental Review Officer (ERO) with a signed affidavit from the responsible parties (prime contractor, subcontractor(s), and utilities firms) to the ERO confirming that all field personnel have received copies of the “ALERT” sheet.

Should any indication of an archeological resource be encountered during any soils-disturbing activity of the project, the project head foreman and/or project sponsor shall

immediately notify the ERO and shall immediately suspend any soils-disturbing activities in the vicinity of the discovery until the ERO has determined what additional measures should be undertaken.

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

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 Archaeological 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: Less than Significant.

Impact CP-5: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would 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 Draft Plan Area or on the Adjacent Parcels. 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 impact related to direct or indirect effects on paleontological resources would be less than significant, and no mitigation would be required.

Mitigation: None required.

Impact CP-6: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would disturb human remains, including those interred outside of formal cemeteries. (Less than Significant)

Archeological materials, including human burials, have been found in the city. Human burials outside of formal cemeteries often occur in prehistoric archeological contexts. Excavation associated with new construction activities in the Project 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.

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. The Public Resources Code allows 48 hours to reach agreement on these matters. If the MLD and the other parties do not agree on the reburial method, the project sponsor must comply with Section 5097.98(b) 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.”

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 for both the Draft Plan and the Rezoning of Adjacent Parcels.

Mitigation: None required.

Impact CP-7: Construction activity in the Draft Plan Area and/or on the Adjacent Parcels would not result in substantial damage to historic architectural resources. (Less than Significant with Mitigation)

As described in Section 4.F, 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 threshold 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. Implementation of **Mitigation Measures M-CP-7a and M-CP-7b**, below, 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 Draft Plan Area and within the area covered by the Rezoning of Adjacent Parcels.

Mitigation Measures

M-CP-7a: Protect Historical Resources from Adjacent Construction Activities. The project sponsor of a development project in the Draft Plan Area and on the Adjacent Parcels 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 if pile driving would be used in a subsequent development project; otherwise, it shall include historic buildings within 25 feet if heavy equipment would be used on the subsequent development project. (No measures need be applied if no heavy equipment would be employed.) 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, appropriate excavation shoring methods to prevent movement of adjacent structures, and providing adequate security to minimize risks of vandalism and fire.

M-CP-7b: Construction Monitoring Program for Historical Resources. For those historical resources identified in Mitigation Measure M-CP-7a, 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 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: Less than Significant.

Impacts of the 350 Eighth Street Project (Project-Level Analysis)

Impact CP-8: The proposed 350 Eighth Street project may lead to the construction of incompatible new buildings adjacent to historic district contributors located in the vicinity of the 350 Eighth Street project site, but this would not cause a substantial adverse change in the significance of any historical resources as defined in CEQA Guidelines Section 15064.5. (Less than Significant)

Since no historical resources, as defined by CEQA, are present on the 350 Eighth Street project site, demolition of the existing buildings on site would not cause a significant adverse impact on historical resources.

The 350 Eighth Street project site is, however, located adjacent to the Western SoMa Light Industrial and Residential Historic District. The property is surrounded by 10 contributing resources and 10 non-contributing resources (5 contributing and 7 non-contributing properties across Ringold Street,

4 contributing and 3 non-contributing properties across Gordon Street, and 1 contributing building across Harrison Street).

The 350 Eighth Street project would include construction of seven buildings, ranging from four to six stories, which would contrast with the immediate scale, design, or materials of the nearby historic district. The building would be designed in a contemporary industrial loft style. Although the district's boundaries exclude the 350 Eighth Street project site, the historic district surrounds the properties on two and a half sides, and therefore new construction would indirectly affect the historic district's integrity of setting in this location by adding buildings that contrasts with the scale and massing of those in the historic district. However, the immediate vicinity contains a relatively low concentration of contributing resources (five), and the streets that surround the property (Ringold, Gordon, and Harrison) act as a buffer between the property and these resources. Given the relatively low number of nearby district contributors, and the roadway buffers, the alteration to the district's integrity of setting would not substantially affect the overall eligibility of the historic district. In addition, with implementation of the Plan Area Design Standards (discussed above under Impact CP-2), the design of the 350 Eighth Street project would be subject to review for compatibility with its immediate surroundings, including the Western SoMa Light Industrial and Residential Historic District. For these reasons, the implementation of the 350 Eighth Street project would not cause a substantial adverse change in the significance of any historical resources, and this impact would be less than significant.

Mitigation: None required.

Impact CP-9: The proposed 350 Eighth Street project would not cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5. (Less than Significant with Mitigation)

The ARDTP⁸⁸ prepared for the proposed 350 Eighth Street project identified the following archeological resources that may be adversely affected by the proposed project:

- Prehistoric deposits in native sand dune deposits and, with a lower probability, in Bay Mud deposits
- San Francisco and Pacific Sugar Refinery (1856 – c. 1878) – structural remnants, features related to mechanical processes, refuse deposits in trash pits, privies
- Recreation Park (1897 – 1906) – privies, trash pits, sheet refuse
- Domestic deposits (c. late 1880s – c. 1906) – artifact-filled hollow features such as wells, privies, cisterns, trash pits
- Post-1906 archeological deposits – blacksmith shops, Union Transfer Company, dwellings – trash pits, privies, sheet refuse

⁸⁸ William Self Associates, September 2011.

Although the 350 Eighth Street project site was subject to ground disturbance during the 1800s, it does not appear to have been altered after the construction of the Pacific Sugar Refinery, aside from the deposition of fill related to the 1906 earthquake and fire. In addition to the refinery complex, seven dwellings lining Ringold Street are depicted on the 1889 Sanborn Map. These had rear yards that likely included privies and wells. Prehistoric deposits dating to the Lower and Upper Middle periods are not expected within the 350 Eighth Street project site.

Archeological deposits/features present that have associations with the resources noted above and their data sets may significantly inform research issues and questions identified in the project ARDTP, thus making the resource California Register-eligible under Evaluation Criterion 4 (yielding information important in prehistory or history). The proposed 350 Eighth Street project requires mass excavation for one sub-grade level and a mat foundation to a depth of 12 feet below ground surface (bgs) and to a depth of 16 bgs for elevator shafts, potentially resulting in adverse effects on historical and prehistoric archeological resources. The 350 Eighth Street project may geotechnically require installation of deep foundations, such as piles, and/or use of soils improvement techniques that could result in adverse effects on more deeply buried prehistoric archeological resources present in native sand dune or Bay Mud deposits. The potential for an adverse effect is increased with the use of soils improvement techniques since soils improvement techniques may chemically alter the archeological deposit, and/or alter the stratigraphic integrity of the archeological deposit, and are less archeologically addressable since they require no excavation that could be archeologically monitored. Therefore, the proposed 350 Eighth Street project would have a significant impact on archeological resources.

Implementation of **Mitigation Measure M-CP-9**, below, would reduce potential adverse effects on legally significant archeological resources to less-than-significant levels.

Mitigation Measure

M-CP-9: **Archeological Testing Plan.** Based on a reasonable presumption that archeological resources may be present within the 350 Eighth Street project site, the following measures shall be undertaken to avoid any significant adverse effect from the 350 Eighth Street project on buried or submerged historical resources.

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 undertake an archeological testing program as specified herein. In addition, the consultant shall be available to conduct an archeological monitoring and/or data recovery program if required pursuant to this measure. The archeological consultant's work shall be conducted in accordance with this measure and with the requirements of the project archeological research design and treatment plan (William Self Associates, *Final Archaeological Research Design and Treatment Plan for the 350 Eighth Street Project*, September 2011) at the direction of the Environmental Review Officer (ERO). In instances of inconsistency between the requirements of the project archeological research design and treatment plan and requirements of this archeological mitigation measure, the requirements of this archeological mitigation measure shall prevail. All plans and reports prepared by the consultant as specified herein shall be submitted first and directly to the ERO for review

and comment, and shall be considered draft reports subject to revision until final approval by the ERO. Archeological monitoring and/or data recovery programs required by this measure could suspend construction of the project for up to a maximum of four weeks. At the direction of the ERO, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means to reduce to less-than-significant levels potential effects on a significant archeological resource as defined in CEQA *Guidelines* Section 15064.5 (a) through (c).

Consultation with Descendant Communities. On discovery of an archeological site⁸⁹ associated with descendant Native Americans or the Overseas Chinese, the ERO and an appropriate representative⁹⁰ of the descendant group shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archeological field investigations of the site and to consult with the ERO regarding appropriate archeological treatment of the site and recovered data from the site, and, if applicable, any interpretative treatment of the associated archeological site. A copy of the Final Archeological Resources Report shall be provided to the representative of the descendant group.

Archeological Testing Program. The archeological consultant shall prepare and submit to the ERO for review and approval an archeological testing plan (ATP). The archeological testing program shall be conducted in accordance with the approved ATP. The ATP shall identify the property types of the expected archeological resource(s) that could be adversely affected by the proposed project, the investigation method to be used, locations to be tested, and the justification for the selected investigation method(s) and locations. The purpose of the archeological testing program shall be to identify and, to the extent possible, evaluate the legal significance (California Register/National Register eligibility) of any archeological resource(s) that may be adversely affected the project.

At the completion of the archeological testing program, the archeological consultant shall submit a written report of the findings to the ERO. Based on the archeological testing program, the ERO shall determine what additional archeological investigation and mitigation measures are warranted. If the ATP that a legally significant archeological resource may be potentially affected by the project, the preferred mitigation shall be preservation in place consistent with the preservation strategies set forth in CEQA *Guidelines* Section 15126.4(b)(3)(A) and (B), including avoidance of the archeological site by project redesign; incorporation of the archeological site into open space; physical insulation of the archeological site, and deeding of the archeological site into a permanent conservation easement. If it has been satisfactorily demonstrated to the ERO that preservation in place of the archeological resource is infeasible through evaluation strategies including, but not necessarily limited to those noted in *Guidelines* Section 15126.6(b)(3)(B) and set forth above, an archeological data recovery program consistent with an ERO-approved archeological data recovery plan (ARDP) shall be

⁸⁹ The term “archeological site” is intended here to minimally include any archeological deposit, feature, burial, or evidence of burial.

⁹⁰ 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.

implemented. Where the ERO determines that the archeological resource is (also) of high public interpretive value, an interpretive use plan shall be submitted to the ERO for review and approval.

Archeological Monitoring Program. If the ERO in consultation with the archeological consultant determines that an archeological monitoring program (AMP) shall be implemented, the archeological monitoring program shall minimally include the following provisions:

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

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

Archeological Data Recovery Program. The archeological data recovery program shall be conducted in accord with an archeological data recovery plan (ADRP). The archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the ADRP

prior to preparation of a draft ADRP. The archeological consultant shall submit a draft ADRP to the ERO. The ADRP shall identify how the proposed data recovery program will preserve the significant information the archeological resource is expected to contain. That is, the ADRP shall identify what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, shall be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archeological resources if non-destructive methods are practical.

The scope of the ADRP shall include the following elements:

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

Human Remains and Associated or Unassociated Funerary Objects. The treatment of human remains and of associated or unassociated funerary objects discovered during any soils disturbing activity shall comply with applicable state and federal laws. This shall include immediate notification of the coroner of the City and County of San Francisco and in the event of the coroner's determination that the human remains are Native American remains, notification of the California State Native American Heritage Commission (NAHC) who shall appoint a Most Likely Descendant (MLD) (Public Resources Code Section 5097.98). The archeological consultant, project sponsor, and MLD shall make all reasonable efforts to develop an agreement for the treatment of, with appropriate dignity, human remains and associated or unassociated funerary objects (CEQA Guidelines Section 15064.5(d)). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects.

Final Archeological Resources Report. The archeological consultant shall submit a Draft Final Archeological Resources Report (FARR) to the ERO. The FARR shall evaluate the historical significance of any discovered archeological resource and describes the archeological and

historical research methods employed in the archeological testing/monitoring/data recovery program(s) undertaken. Information that may put at risk any archeological resource shall be provided in a separate removable insert within the final report.

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

Significance after Mitigation: Less than Significant.

Impact CP-10: The proposed 350 Eighth Street project 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 the 350 Eighth Street project activities to uncover unique or significant fossils within the 850 Eighth Street project site. 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 impact related to direct or indirect effects on paleontological resources would be less than significant, and no mitigation would be required.

Mitigation: None required.

Impact CP-11: The proposed 350 Eighth Street project would not likely disturb human remains, including those interred outside of formal cemeteries. (Less than Significant)

Human burials outside of formal cemeteries often occur in prehistoric archeological contexts. Like the Project Area as a whole, the 850 Eighth Street project site has the potential to contain prehistoric archeological materials; therefore, prehistoric human remains may exist in the project site. Excavation associated with new construction activities would have the potential to disturb these resources. However, as described under Impact CP-6, above, the potential impact of disturbance to human remains would be avoided through compliance with applicable state laws and regulations.

Mitigation: None required.

Cumulative Impacts

Impact C-CP-1: The implementation of the Draft Plan and Rezoning of Adjacent Parcels, in combination with past, present, and reasonably foreseeable future projects in the vicinity, could encourage a development trend of demolition and alteration of historical resources, contributing considerably to significant cumulative historical resources impacts. (Significant and Unavoidable with Mitigation)

The implementation Draft Plan and Rezoning of Adjacent Parcels may contribute to a cumulative impact on historical resources by encouraging a development trend of demolition and alteration of such resources in the Draft Plan Area and on the Adjacent Parcels. Since the overall Project Area encompasses a large area with a number of individually eligible historical resources and eligible historic districts, and SoMa is a district where high levels of infill development have occurred in the past and will continue to occur in the future, it is reasonable to assume that the Proposed Project could contribute to a trend of demolition and alteration of historical resources in the Project Area.

While no specific projects have been identified on sites that have historical resources, the greater heights and densities allowable under the Draft Plan could create greater development pressures on existing historical resources than under current land use controls, potentially replacing them with newer and larger buildings that are more economically viable for their location.

For example, demolition and/or substantial alteration of buildings in Western SoMa and/or East SoMa could affect the cohesiveness of historic districts. In the Western SoMa Light Industrial and Residential Historic District, 66 percent of the buildings are contributing resources. However, it is clear that a greater percentage of contributing resources is beneficial to the integrity of a historic district, and therefore a reduction in the proportion of contributors over time could diminish the viability of this district.

The Bluxome and Townsend Warehouse Historic District at present contains nine contributing resources and one non-contributing resource; in other words, 90 percent of its buildings are contributing resources, a much higher percentage than in the Western SoMa Light Industrial and Residential Historic District. Nevertheless, the much smaller size of this district means that the loss of a smaller absolute number of buildings, compared to the larger Light Industrial/Residential district, could result in equally adverse effects.

Moreover, other potential development in the vicinity—including implementation of the proposed *Central Corridor Plan* along the eastern edge of the Draft Plan Area—could potentially result in the loss of additional historical resources, either inside the Draft Plan Area or nearby.

Therefore, the potential exists that the increased heights and densities allowable under the Draft Plan, in addition to past, present, and reasonable foreseeable projects that could demolish or substantially alter district contributors (or individually listed or eligible buildings), could contribute to a significant

cumulative impact on historical resources. While Mitigation Measures M-CP-1a through M-CP-1c would also reduce the cumulative impacts of the Draft Plan on historical resources, such impacts would remain significant and unavoidable.

Mitigation: Implement **Mitigation Measures M-CP-1a**, Documentation of a Historical Resource, **Mitigation Measure M-CP-1b**, Oral Histories, and **Mitigation Measure M-CP-1c**, Interpretive Program, described on pages 4.D-46 through 4.D-47.

Significance after Mitigation: Significant and Unavoidable.

Impact C-CP-2: The proposed 350 Eighth Street project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute considerably to a significant cumulative impact on historical resources. (Less than Significant)

As discussed above, since no historical resources, as defined by CEQA, are present on the 350 Eighth Street project site, demolition of the existing buildings on site would not cause a significant adverse impact on historical resources. As such this project would not result in any direct impacts to historical resources that are cumulatively considerable. The 350 Eighth Street project site is, however, located adjacent to the Western SoMa Light Industrial and Residential Historic District. Although the district's boundaries exclude the 350 Eighth Street project site, the historic district surrounds the properties on two and a half sides. However, as noted under Impact CP-2, implementation of the Draft Plan's Design Standards, along with the existing *Planning Code* regulations governing the Extended Preservation District that includes most of the Adjacent Parcels, would preclude changes on the Adjacent Parcels from resulting in any significant effect on the historic district. Moreover, the relatively low number of nearby district contributors, and the surrounding roadways which act as buffer zones would further diminish any potential effects on the district. Because the 350 Eighth Street project would not adversely affect the historic district, the project could not combine with other projects to result in a significant cumulative impact. For these reasons, the implementation of the 350 Eighth Street project would have a less-than-significant cumulative impact on historical resources.

Mitigation: None required.

Impact C-CP-3: The Proposed Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5 and/or human remains, and therefore would not contribute considerably to a significant cumulative impact. (Less than Significant with Mitigation)

Ground-disturbing activities in the Project Area could encounter previously recorded and unrecorded archeological resources and/or human remains. Projects allowable under the Proposed Project, in combination with past, present, and reasonably foreseeable projects in the Project 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 and/or human remains.

Implementation of **Mitigation Measures M-CP-4a, M-CP-4b** and **M-CP-10** for the Proposed Project would also reduce its contribution to cumulative impacts to a less-than-significant level. Effects on archeological resources and human remains 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. Project-related impacts on archeological resources and human remains would be site-specific and limited to the project construction areas, and would be reduced to less-than-significant levels with implementation of measures similar to Mitigation Measures M-CP-5a, M-CP-5b, and M-CP-10. The Proposed Project's contribution to cumulative impacts on archeological resources and/or human remains would be less than significant with implementation of these measures.

Mitigation: Implement **Mitigation Measures M-CP-4a**, Project-Specific Preliminary Archeological Assessment, discussed on page 4.D-50; **Mitigation Measure M-CP-4b**, Procedures for Accidental Discovery of Archeological Resources, discussed on page 4.D-51; and **Mitigation Measure M-CP-9**, Archeological Testing Plan, discussed on page 4.D-57.

Significance after Mitigation: Less than Significant.

E. Transportation and Circulation

This section analyzes the Proposed Project's effects on transportation and circulation, including intersection operations, transit demand, impacts on pedestrian and bicycle circulation, freight loading, and construction impacts. In addition, a discussion of parking impacts is included for informational purposes only. This section summarizes the transportation study prepared for the Proposed Project.¹

Environmental Setting

The Project Area consists of two connected areas. The first area is generally bounded by 13th Street to the east, Bryant Street to the south, Seventh Street to the west, and Mission Street to the north. The second area is generally bounded by Townsend Street to the south, Fourth Street to the east, Harrison Street to the north and Seventh Street to the west.

Regional and Local Roadways

Regional access to the Project Area is provided by Interstate 80 (I-80), Interstate 280 (I-280) and U.S. Highway 101 (U.S. 101), while direct local access is provided by multiple streets within the Draft Plan Area. In the Project Area, 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. Descriptions of these roadway facilities and others in the vicinity of the Proposed Project are presented below.

Regional Access

U.S. 101 and I-80 provide the primary regional access to the Project Area. U.S. 101 serves San Francisco and the Peninsula/South Bay, and extends north via the Golden Gate Bridge to the North Bay. I-80 connects San Francisco to the East Bay and points east via the San Francisco-Oakland Bay Bridge. U.S. 101 merges with I-80 to the south of the study area. Within the Project Area, I-80 has eight lanes (four lanes in each direction). Nearby eastbound/northbound access is provided with on-ramps at Fifth/Bryant Streets and Eighth/Bryant Streets, and off-ramps at Fourth/Bryant Streets, Seventh/Bryant Streets, and Ninth/Bryant Streets. Nearby southbound access is provided with on-ramps at 10th/Bryant Streets, Seventh/Harrison Streets, and Fourth/Harrison Streets, and off-ramps at Eighth/Harrison Streets and Fifth/Harrison Streets.

I-280 provides regional access to the Project Area from western San Francisco and the South Bay/Peninsula, and to and from downtown San Francisco. In the vicinity of the Project Area, I-280 is a six-lane freeway. I-280 and U.S. 101 intersect to the south of the Project Area. Nearby northbound and southbound on- and off-ramps are located at Sixth/Brannan Streets.

¹ LCW, *Western SOMA Community Plan Transportation Study – Final Report*, June 15, 2012. This document is available for review in Project File No. 2008.0877E at the San Francisco Planning Department, Fourth Floor, 1650 Mission Street, San Francisco.

Local Access

Mission Street is a four-lane arterial that runs in an east-west direction between The Embarcadero and Van Ness Avenue, and continues in a north-south direction west of Van Ness Avenue.² Left turns from Mission Street are generally prohibited between Main and Beale Streets and 10th Street. The right-hand (curbside) lane on Mission Street in both (eastbound and westbound) directions, between 11th Street and Beale Street, is dedicated as a right-turn/bus-only lane on weekdays between 7:00 a.m. and 6:00 p.m. On-street, metered, parking is generally provided along both curbs, but is prohibited during the a.m. and p.m. peak periods. The *San Francisco General Plan* (General Plan) designates Mission Street as a Transit Conflict Street in the Congestion Management Program (CMP) Network, as a Transit Preferential Street (primary transit-oriented) within the downtown core, a Neighborhood Pedestrian Street (Neighborhood Commercial), and as a Citywide Pedestrian Network Street.

Howard Street runs east-west between The Embarcadero and South Van Ness Avenue. It is a two-way arterial with two travel lanes in each direction between The Embarcadero and Fremont Street, and a four-lane westbound one-way arterial west of Fremont Street. In the vicinity of the Project Area, Howard Street has on-street parking on both sides of the street; however, parking is prohibited along the north curb during the p.m. peak period (4:00 to 6:00 p.m.). The General Plan identifies Howard Street as a Major Arterial in the CMP Network, as a Metropolitan Transportation System (MTS) Street and a Transit Preferential Street (transit-important) between Main and Beale Streets. Howard Street is part of the Bicycle Route 30, and a bicycle lane is provided on the north side of Howard Street between Fremont and 11th Streets.

Folsom Street runs east-west between The Embarcadero and 11th Street, and north-south west of 11th Street. Folsom Street is a four-lane eastbound one-way arterial from 11th Street to Main Street, and is a two-way arterial with three eastbound lanes and one westbound lane between Main Street and The Embarcadero. The General Plan identifies Folsom Street as a Major Arterial in the CMP Network and as an MTS Street. Folsom Street is part of Bicycle Route 30, and has a bicycle lane on the south side of the street.

Harrison Street runs east-west between The Embarcadero and 12th Street, and north-south west of 12th Street. Harrison Street is a two-way roadway between The Embarcadero and Third Street, a one-way westbound roadway between Third Street and 10th Street, and a two-way roadway between 10th Street and Cesar Chavez Street. Harrison Street is the primary access route to and from westbound I-80. In the vicinity of the Project Area, Harrison Street has five lanes in the westbound direction with sidewalks and on-street parking on both sides of the street. The General Plan identifies Harrison Street as a Major Arterial in the CMP Network, a MTS Street, a Transit Preferential Street (secondary transit street) and a Neighborhood Commercial Street.

Bryant Street runs east-west between The Embarcadero and 11th Street, and north-south west of 11th Street. Bryant Street is a two-way roadway between Cesar Chavez and 11th Streets, a one-way eastbound roadway between 11th Street and Sterling Street, and a two-way roadway between Sterling

² The streets in the SoMa area are not aligned in a strict east-west / north-south grid, but consistent with San Francisco practice, generally speaking, within the Draft Plan Area, Mission Street and streets parallel to it, such as Harrison Street, are considered to run east-west, while Eighth Street and streets parallel to it are considered to run north-south.

Street and The Embarcadero. Bryant Street is the primary access route to and from eastbound I-80 and the Bay Bridge. Within the Project Area, Bryant Street has five lanes in the eastbound direction with sidewalks and on-street parking on both sides of the street. The General Plan identifies Bryant Street as a Major Arterial in the CMP Network, a MTS Street, a Transit Preferential Street (transit important and secondary transit street) and a Neighborhood Commercial Street.

Brannan Street is an east-west roadway that runs between Potrero/Division Streets and The Embarcadero. Within the Project Area, Brannan Street has two lanes in each direction, sidewalks on both sides of the street and parallel on-street parking on the north side of the street. Between Seventh and Eighth Streets, there is a private parking lot on the south side of the street, and no on-street parking. East of Seventh Street, Brannan Street has parallel parking on both sides of the street. The General Plan identifies Brannan Street as a Major Arterial in the CMP Network and an MTS Street (between Fifth and Sixth Streets, and between Ninth and Division Streets, only).

Townsend Street is an east-west roadway between Eighth/Division Streets and The Embarcadero. Within the Project Area, Townsend Street has two lanes in each direction east of Seventh Street, and one lane in each direction west of Seventh Street. Townsend Street has sidewalks on both sides of the street. East of Seventh Street, Townsend Street has no sidewalks and 90-degree parking on both sides of the street. The General Plan identifies Townsend Street as a MTS Street.

Fourth Street is a north-south roadway between Market and Third Street. North of Market Street, Fourth Street connects with Stockton and Ellis Streets. Between Market and Townsend Streets, Fourth Street is one-way southbound with four travel lanes. Within the Project Area, an on-ramp to I-80 westbound is located at the intersection of Fourth and Harrison Streets, while an off-ramp from I-80 eastbound is located at the intersection of Fourth and Bryant Streets. In the vicinity of the Project Area, Fourth Street has on-street metered parking and sidewalks on both sides of the street. In the General Plan, Fourth Street is designated as a Major Arterial in the CMP Network, an MTS Street, a Transit Preferential Street (transit important), and a Neighborhood Commercial Street.

Fifth Street is a north-south roadway between Market and Townsend Streets. North of Market Street, Fifth Street becomes Cyril Magnin Street. Fifth Street is two-way, with two travel lanes in each direction. Within the Project Area, an on-ramp to I-80 eastbound is located at the intersection of Fifth and Bryant Streets, while an off-ramp from I-80 westbound is located at the intersection of Fifth and Harrison Streets. In the vicinity of the Project Area, Fifth Street has on-street metered parking and sidewalks on both sides of the street. In the General Plan, Fifth Street is designated as a Major Arterial in the CMP Network, an MTS Street, and a Transit Preferential Street (transit important). Fifth Street is part of Bicycle Route 19.

Sixth Street is a north-south roadway between Market and Townsend Streets and provides access to the I-280 ramps at Brannan Street. Within the Project Area, Sixth Street has two travel lanes in each direction, and an on-ramp and an off-ramp to I-280 is located at the intersection of Sixth and Brannan Streets. The General Plan identifies Sixth Street as a Major Arterial between Market and Brannan Streets, a Neighborhood Pedestrian Street between Market and Folsom Streets, and a Neighborhood Commercial Street (as well as a Freight Truck Route) between Market and Folsom Streets. Sixth Street is a part of the CMP and MTS networks.

Seventh Street is a one-way northbound roadway between Market and Brannan Streets and a two-way north-south roadway between Brannan and 16th Streets. The I-80 eastbound off-ramp connects with Seventh Street between Harrison and Bryant Streets. Seventh Street has four northbound lanes between Market and Bryant Streets, and two northbound lanes between Bryant and Brannan Streets. Between Brannan and 16th Street, Seventh Street has one southbound lane, two northbound lanes and a bicycle lane with 10-foot wide sidewalks and unmetered on-street parking on both sides of the street. The General Plan identifies Seventh Street as a Major Arterial in the CMP Network, and a secondary Arterial south of Bryant Street. Seventh Street is part of the Bicycle Route 23.

Eighth Street is a one-way southbound roadway between Market and Brannan Streets, and a two-way north-south roadway between Brannan and Division Streets. The I-80 westbound off-ramp connects with Eighth Street between Harrison and Bryant Streets. Between Market and Brannan Streets, Eighth Street has four southbound lanes and a bicycle lane, 10-foot-wide sidewalks and on-street parking on both sides of the street. Between Brannan and Townsend/Division Streets, Eighth Street has one lane in each direction, and on-street parking on both sides of the street. The General Plan identifies Eighth Street as a Major Arterial in the CMP Network, a MTS Street, and a Neighborhood Network Connection Street. Eighth Street is part of the Bicycle Route 23.

Ninth Street is a one-way northbound roadway between Market and Division Streets. The U.S. 101 northbound off-ramp connects with Ninth Street at Bryant Street. Within the Project Area, Ninth Street has four lanes in the northbound direction with sidewalks and on-street parking on both sides of the street. The General Plan identifies Ninth Street as a Major Arterial in the CMP Network, a MTS Street, and a Neighborhood Network Connection Street.

10th Street is a one-way, southbound roadway with generally four lanes and parking on both sides of the street. The U.S. 101 southbound on-ramp connects with 10th Street at Bryant Street. On-street parking on the east side of 10th Street between Harrison and Bryant Streets is subject to tow-away between 7:00 and 9:00 a.m. Tenth Street provides access to southbound U.S. 101 via an on-ramp at the intersection of Bryant and 10th Streets. Tenth Street is designated in the General Plan as a Major Arterial between Market and Brannan Streets in the CMP network.

11th Street runs north-south between Market and Bryant Streets, and has one or two lanes in each direction. Sidewalks and on-street parking are provided on both sides of the street. The General Plan identifies 11th Street as a Transit Preferential Street (secondary transit street). Eleventh Street is part of the Bicycle Route #25.

12th Street runs north-south between South Van Ness Avenue and Harrison Street, and has one or two lanes in each direction. Sidewalks and on-street parking are provided on both sides of the street.

13th Street runs east-west between Bryant and Mission Streets, and has two or three travel lanes in each direction, and on-street parking is generally provided on both sides of the street. To the west of Mission Street, 13th Street continues as Duboce Avenue. The General Plan identifies 13th Street as a Major Arterial in the CMP Network, and as part of the MTS Network.

Intersection Conditions

Existing intersection operating conditions were evaluated for the weekday p.m. peak hour (generally between 5:00 and 6:00 p.m.) of the p.m. peak period (4:00 to 6:00 p.m.) at 20 intersections (see **Table 4.E-1** on page 4.E-21 and **Figure 4.E-1** on page 4.E-6). For four of the 20 study intersections, weekday a.m. peak-hour conditions also were evaluated during the a.m. peak period (7:00 to 9:00 a.m.). Intersection turning movement volumes at the study intersections were counted in November and December 2009. The operating characteristics of signalized and unsignalized intersections are described by the concept of level of service (LOS), which provides a standardized means of rating an intersection's operating characteristics on the basis of traffic volumes, intersection capacity, and delays. Intersection levels of service ranges from LOS A, which indicates free flow or excellent conditions with short delays, to LOS F, which indicates congested or overloaded conditions with extremely long delays. LOS D (moderately high delays) is considered the lowest acceptable level in San Francisco.

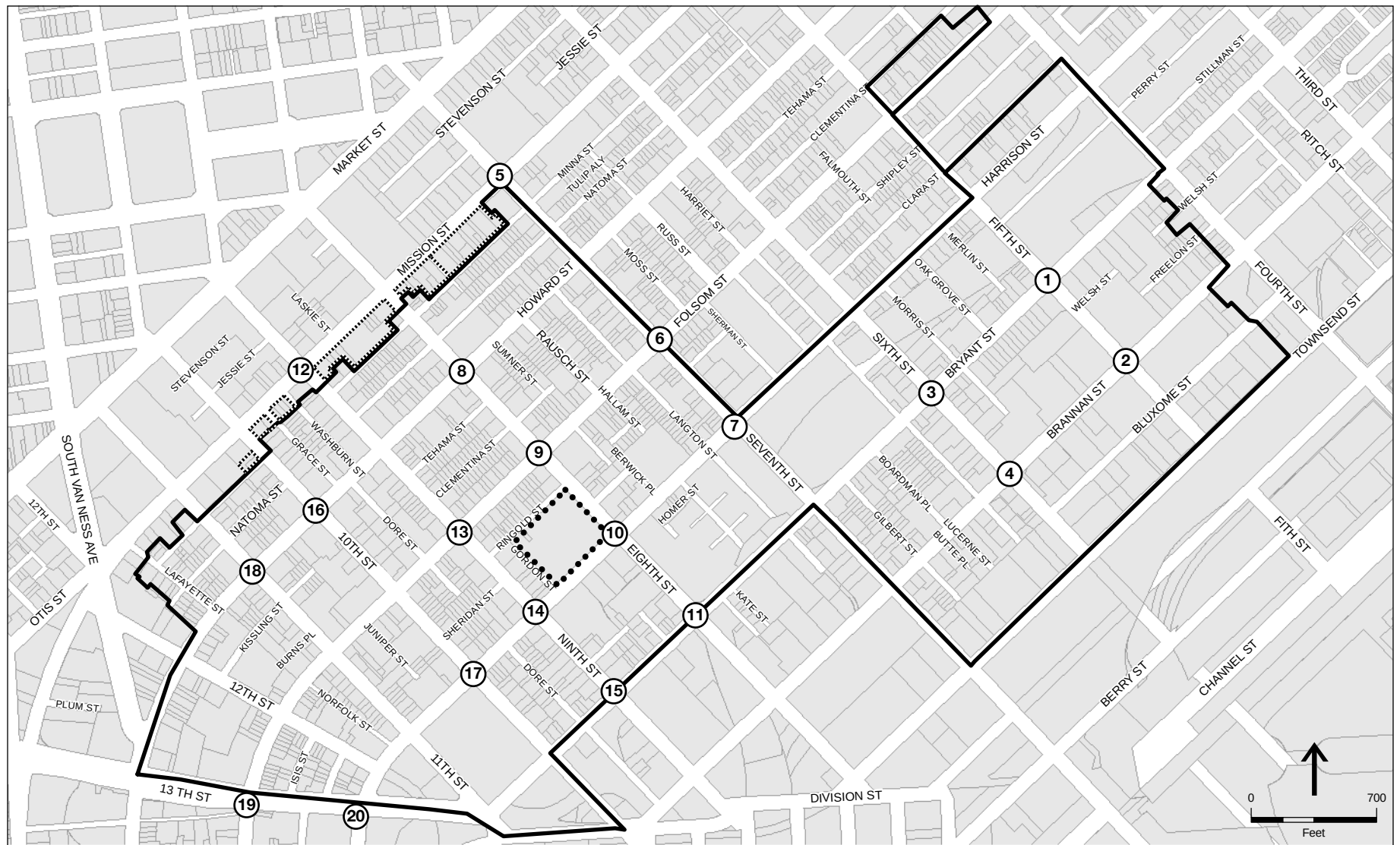
During the weekday p.m. peak hour under existing conditions, all of the study intersections currently operate under satisfactory conditions (LOS D or better), except the intersections of Fifth Street / Bryant Street / I-80 Eastbound on-ramp, and Sixth Street / Brannan Street / I-280 ramps, which both operate at LOS E. At the intersection of Fifth/Bryant/I-80 Eastbound on-ramp, the poor operating conditions are a result of the high volumes destined to I-80, and the five-leg geometry of the intersection and resulting complexity of how right-of-way is allocated among the vehicle movements at the intersection. At the intersection of Sixth/Brannan/I-280 ramps, the poor operating conditions are due to the high northbound and southbound volumes destined to and from the I-280 on- and off-ramps that touch down at that intersection. During the weekday a.m. peak hour, three of the four study intersections currently operate under good conditions (LOS C or better), with the intersection of Sixth/Brannan/I-280 ramps operating at LOS E, primarily due to the high volumes of vehicles exiting northbound I-280 (see Table 4.E-1 on page 4.E-21).

Transit

The Project Area is well-served by public transit. The San Francisco Municipal Railway (Muni) provides local transit service. Service to and from the East Bay is provided by Bay Area Rapid Transit (BART), Alameda-Contra Costa Transit (AC Transit), and ferries; service to and from the South Bay/Peninsula is provided by BART, SamTrans, and Caltrain; and service to and from the North Bay is provided by Golden Gate Transit buses (which stop on Geary Boulevard and Masonic Avenue) and ferries. Most regional transit operators provide access to the Project Area, but not direct service to the 350 Eighth Street project site. Access to regional transit is available throughout the Project Area via Muni, taxi, bicycle, or pedestrian connections.

Muni Lines

The transit network serving the Project Area includes 13 Muni bus lines (Bus Routes 8AX, 8BX, 9, 9L, 10, 12, 14X, 19, 22, 27, 30, 45, and 47). All of these Muni bus routes have stops within three blocks of the 350 Eighth Street project site. Some of the above-mentioned Muni lines (namely the express buses) operate for limited hours of the day, generally during the peak periods (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.) hours only.



- Western SoMa Community Plan Area
- Adjacent Parcels
- 350 Eighth Street project site
- Ⓢ Intersection numbers shown on this figure correspond to intersection names in Table 4.E-1

SOURCE: San Francisco Planning Department

2008.0877E and 2007.1035E: Western SoMa Community Plan, Rezoning of Adjacent Parcels, and 350 Eighth Street Project

Figure 4.E-1
LOS Intersection Locations

Muni's Transit Effectiveness Project

The Transit Effectiveness Project (TEP) presents a thorough review of San Francisco's public transit system, initiated by MTA in collaboration with the City Controller's Office. The TEP is aimed at improving reliability, reducing travel times, providing more frequent service and updating Muni bus routes and rail lines to better match current travel patterns. The TEP recommendations were endorsed unanimously by the MTA Board of Directors in October 2008, pending any requisite environmental impact assessments. MTA published a TEP Implementation Strategy (April 5, 2011), which is undergoing environmental review. The TEP Implementation Strategy anticipates that many of the service improvements would be implemented sometime between the end of Fiscal Year (FY) 2013 and FY 2015 and that the remainder of the service improvements would occur in FY 2016.³ TEP recommendations include new routes and route extensions, more service on busy routes, and elimination or consolidation of certain routes or route segments with low ridership. The following changes are proposed by the TEP for lines in the Project Area vicinity:

- The 9AX/BX-San Bruno Expresses would be renamed to the 8AX/BX-Bayshore Expresses, the route segment north of Broadway would be eliminated, and segments south of the Project Area vicinity would be rerouted.
- The 9-San Bruno and 9L-San Bruno Limited service frequencies would be increased from 12 minutes between buses to 10 minutes between buses. During the evening period, the service frequency for the local service would remain at 15 minutes between buses.
- A new 11-Downtown Connector would run between the Fisherman's Wharf area and SoMa, and run on Polk, North Point, Powell, Columbus, Sansome, Second, Folsom/Harrison and 11th Streets. The new route would provide the Project Area with two transit connections to Market Street: one at the Van Ness Muni station, the other at the Montgomery BART/Muni station.
- The 12-Pacific would be discontinued, but current service levels on Pacific and Sansome Streets would be maintained or improved. Service on Folsom Street would be replaced by the rerouted 27-Bryant. Service along Pacific and Sansome Streets would be provided solely by 10-Sansome.
- The 14/14L-Mission/Mission Limited would have increased service frequencies on Mission Street throughout the day, provided by an all day local and a limited stop service (including the 49-Van Ness/Mission route).
- The 19-Polk would have modified routing in the Civic Center to simplify route structure and reduce travel time, and would operate between Van Ness/North Point and the San Francisco General Hospital. The segment south of 24th Street would be served by a revised 48-Quintara-24th Street line, providing direct connection to the Mission, rather than to the Civic Center.
- The 27-Bryant would be renamed as 27-Folsom and realigned to operate on Folsom Street in SoMa and the Inner Mission to Cesar Chavez Street, replacing the existing 12-Folsom service. Service also would be extended north on Leavenworth Street and Vallejo Street to Van Ness Avenue. Service on Bryant Street would be discontinued, and resources allocated to Potrero Avenue and Folsom Street to provide more frequent service on both corridors.

³ SFMTA, Draft Transit Effectiveness Project Implementation Strategy, April 5, 2011, page 3-5.

- The 30-Stockton daytime service would be provided by articulated buses (subject to equipment availability).
- The 47-Van Ness would operate along South Van Ness Avenue, Division Street and Townsend Street instead of Bryant Street and Harrison Street to provide faster connection to Caltrain and retail along the 13th/Division corridor. Service in the north would be terminated at Van Ness Avenue and North Point to allow better coordination with the 49L-Van Ness Limited. The 47-Van Ness would coordinate with the Van Ness Bus Rapid Transit (BRT) Study currently underway. Service frequencies would be increased during the peak periods and evening hours.

The TEP provides the most recent available Muni ridership data for the bus routes operating in the vicinity of the Project Area. Route capacity utilization (number of passengers as a percentage of vehicle capacity) was determined at the Maximum Load Point, which is the location where the route has its highest number of passengers. Muni's established capacity utilization standard for peak period operations is 85 percent. It should be noted that the 85 percent utilization is of seated and standing loads, so at 85 percent all seats are taken, and there are many standees. During the weekday p.m. peak hour, none of the lines in the vicinity of the Project Area operates at or above the capacity utilization standard of 85 percent, with the exception of the 9L San Bruno Limited, which operates at 98 percent capacity utilization at the maximum load point of Harrison/Sixth Streets. In addition, during the p.m. peak hour, the 8AX Bayshore Express approaches the capacity utilization standard, at 84 percent, at the maximum load point at Harrison/Sixth Streets. Subway lines, including K, L, M, and N light rail lines, have a p.m. peak-hour capacity utilization of 87 percent.

All regional transit providers operate with ridership lower than their load factor standards (a one-hour load factor of 100 percent), which indicates that seats generally are available.

Bicycle Facilities

In the vicinity of the Project Area, portions of ten streets (Fifth, Seventh, Eighth, 10th, 11th, Harrison, Folsom, Townsend, Division, and Market Streets) are designated as Citywide Bicycle Routes (either as Class II or III) in the Transportation Element of the *San Francisco General Plan*.⁴ Bicyclists in the Project Area face a challenging environment. The grid is dominated by one-way streets, fast-moving traffic during non-peak periods, and freeways. The one-way orientation can require bicyclists to circle around large blocks in order to reach a destination. While alleyways enhance connectivity, most are also one-way. As a shortcut, some bicyclists ignore one-way streets by either riding against traffic for a brief period to connect with a two-way street, or simply riding on the sidewalk for a longer distance rather than finding a designated bicycle facility. Even when proceeding with the flow of traffic, fast-moving vehicles can make the marked bicycle lanes within the Project Area uncomfortable for some bicyclists.

During field surveys, a substantial number of bicyclists were observed to be riding within the Project Area, particularly along Folsom Street. During the p.m. peak period, the majority of the bicyclists observed seemed to be commuters traveling from work. Bicycle counts conducted in January 2010 during the p.m. peak hour, as part of the Existing Conditions Report for the *Eastern Neighborhoods Transportation*

⁴ Class II bicycle facilities are separate bicycle lanes adjacent to the curb lane, while Class III bicycle facilities are signed routes only, where bicyclist share travel lanes with motor vehicles.

Implementation Planning Study (EN TRIPS), indicated that the bicycle lanes on Howard, Seventh, and Eighth Streets had the greatest number of bicyclists – with between 51 to 100 bicyclists per hour on Seventh and Eighth Streets (Bicycle Route 23), and more than 100 bicyclists per hour on Howard Street (Bicycle Route 30).⁵

The *San Francisco Bicycle Plan* includes planned short-term improvements in the form of Class II bicycle lanes on Fifth Street between Market and Townsend Streets and on Howard Street between Eighth and Ninth streets. A mix of Class II bicycle lanes and Class III routes are planned on Townsend Street between Eighth Street and The Embarcadero.

Pedestrian Facilities

The Project Area is in an area of San Francisco with one of the highest concentrations of pedestrian injuries and deaths, ranking second in number only behind Downtown/Civic Center, with 385 pedestrians injured in the community in the five-year period between 2005 and 2009.⁶ Pedestrian conditions in the Project Area largely are dictated by the street grid and street design of the neighborhood. The environmental factors that explain the high rates of pedestrian injury in this area include high traffic volumes and speeds on local streets in part due to the freeway on-ramps and off-ramps that bring fast-moving traffic into the community. Many streets in the Project Area are wide, with multiple lanes and one-way traffic – a street design that contributes to higher traffic speeds and makes them challenging to cross.

Block lengths are also notably long in the Project Area – typically twice the length of those blocks north of Market Street – and signalized mid-block crossings for safe pedestrian crossings are notably absent. These long block lengths are a deterrent to safe walking, requiring people to walk great distances and use indirect routes to reach their destination. Almost all signalized intersections include crosswalks and pedestrian signal heads, and many crossings include countdown timers. The Project Area also has a distinct network of residential alleyways that intersect with main arterials; these intersections lack pedestrian amenities such as crosswalks although they are technically legal pedestrian crossings.

Sidewalks are generally present on streets within the Project Area, with the exception of Townsend Street between Seventh and Fourth Streets. The north side of Townsend Street lacks sidewalks, while the south side of Townsend Street has a continuous walkway between the parked vehicles and the Caltrain fence, but this walkway is narrow and is often obstructed by utility poles, parked vehicles, and motorcycle parking. Alleyways also have sidewalks on both sides of the street, although in some instances sidewalks may not be complete or may be in poor condition. On the numbered streets (e.g., Sixth, Seventh, Eighth, Ninth, and 10th Streets), sidewalks are typically 10 feet wide, with the exception of 12th Street, where sidewalk widths vary between 15 and 19 feet. Sidewalks are generally 10 feet wide on Howard and Folsom Streets, 15 feet wide on Mission Street, and 8 feet wide on Harrison and Bryant Streets. Sidewalks on mid-block streets and alleys are 6 to 8 feet wide. At the intersections of Fourth/Harrison,

⁵ San Francisco Municipal Transportation Agency (SFMTA). *Eastern Neighborhoods Implementation Planning Study – Final Report*. December 2011.

⁶ San Francisco Department of Public Health. *The Healthy Development Measurement Tool: ST.3.e. Number and rate of pedestrian injuries*. Available online at: <http://thehdmt.org/indicators/view/56>, accessed on April 24, 2012.

Fifth/Harrison, Seventh/Harrison, Ninth/Harrison, Eighth/Bryant, 10th/Bryant, and Sixth/Brannan, pedestrian crossings are not provided on one or more legs of the intersections.

Within the southern portion of the Project Area, the I-80 structure creates a visual barrier to pedestrian access. There are nine freeway on- and off-ramp intersections (Harrison/Fourth, Bryant/Fourth, Harrison/Fifth, Bryant/Fifth, Seventh/Harrison, Seventh/Bryant, Eighth/Harrison, Ninth/Bryant, and 10th/Bryant). A number of the intersections, primarily along Harrison and Bryant Streets, have multiple turn lanes, which can make it difficult for a motorist driving in the inside lane to see a pedestrian entering the crossing. For this reason, crosswalks frequently are closed at the site of multiple turn lanes. At the intersections of Fourth/Harrison, Fifth/Harrison, Seventh/Harrison, Ninth/Harrison, Eighth/Bryant, 10th/Bryant, and Sixth/Brannan, pedestrian crossings are not provided on one or more legs of the intersections.

The Caltrain terminal is the primary pedestrian generator in the portion of the Project Area that is east of Seventh Street, while retailers such as Trader Joe's and Costco, and the Hall of Justice, are the primary pedestrian generators in the portion of the Project Area that is west of Seventh Street. Senior centers and schools are additional key pedestrian generators, given that both seniors and youth are more reliant on walking for transportation. Further, seniors may take longer to cross streets and are more vulnerable than other age groups to dying when injured as pedestrians, and children are still developing cognitively and so are less able to judge when conditions are safe for crossing and thus more likely to be injured. The Bessie Carmichael Elementary School is located in the Project Area, a half block from the westbound on-ramp to I-80.

In general, pedestrian volumes within the Project Area are low to moderate, with higher pedestrian volumes along portions of Townsend, Brannan, and Bryant Streets, and near the Caltrain terminal at Fourth and King Streets. Sidewalks are generally adequately wide to accommodate existing pedestrian circulation.

Parking Conditions

Draft Plan Area and Adjacent Parcels

Field reconnaissance of existing parking supply and occupancy conditions within the Project Area was conducted in September and October 2010. No counts of on-street and off-street parking supply or occupancy were conducted, with the exception of on-street parking supply on the curb adjacent to the 350 Eighth Street project site, and on both sides of Folsom Street within the Draft Plan Area (i.e., between Seventh and 13th Streets).

On-street parking regulations in the Project Area include limited areas with Residential Permit Parking (RPP), metered parking, un-metered time-limited parking, as well as unrestricted parking. Parking is generally provided on both sides of the streets, except at the mid-block alleyways where there is usually parking on only one side of the street. On-street parking within the Project Area is generally one-hour or two-hour metered or un-metered parking, or RPP 1-hour or 2-hour time-limited parking. Some unrestricted parking is permitted on sections of Brannan, Townsend, 12th, and 13th Streets, as well as on some mid-block alleys such as Gordon Street.

RPP regulations generally restrict on-street parking for non-permit motorists to a 1-hour or 2-hour period, but vary on the days of the week and time of day that the regulations are in effect. Within the Project Area, there is an Area “U” RPP area, which generally restricts non-permit parking to a one-hour period between 8:00 a.m. and 10:00 p.m. every day. During field observations, on-street parking spaces were observed to be generally well-used during the weekday midday peak hours, with some space availability on most blocks.

In addition, there are a number of privately owned parking facilities within the Project Area. Almost all of them serve the employees of and visitors to the businesses adjacent to them, and are not available for public parking. There is one City-operated 193-space off-street parking lot within the Project Area, at 415 Harrison Street. This lot generally serves the nearby Hall of Justice.

The 12th and Kissling Garage, containing 875 parking spaces, is the only publicly-accessible parking garage within the Project Area. The garage is located on 12th Street, between Howard and Folsom Streets, and is open 24 hours a day, all days of the week. The garage is used as an overflow parking facility for a number of businesses (e.g., for the Rainbow Grocery at Folsom and 13th Streets). The garage operators provide shuttle services to various locations. During the weekday midday, overall occupancy at the garage was observed to be about 50 percent.

There are two surface parking lots located within the boundaries of the Adjacent Parcels. There is a publicly-accessible parking lot located at Eighth Street and Mission Street that includes approximately 20 parking spaces. There is a privately-owned parking lot located at 10th Street and Mission Street that includes approximately 20 spaces.

350 Eighth Street Project Site

Adjacent to the 350 Eighth Street project site, parking is permitted on three of the four frontages:

- On Eighth Street between Ringold and Harrison Streets, on-street parking is permitted on the northern portion of the block. The 350 Eighth Street project site driveways and a No Parking Anytime regulation comprise about 160 feet of the curb adjacent to the site. Also adjacent to the 350 Eighth Street project site, there are eight parking spaces subject to 2-hour parking restrictions between 7:00 a.m. and 6:00 p.m.
- On Harrison Street between Eighth and Gordon Streets, on-street parking is permitted on the western portion of the block. The 350 Eighth Street project site driveways and two short red-curb zones (11- to 13-foot-long zones to accommodate a light post and a hydrant) occupy about 240 feet of the 350 Eighth Street project site frontage. Adjacent to the 350 Eighth Street project site, there are seven parking spaces subject to 2-hour parking restrictions between 7:00 a.m. and 6:00 p.m.
- Gordon Street extends about 290 feet north of Harrison Street. On-street unrestricted parking for about 14 vehicles is permitted on the east side of the street adjacent to the 350 Eighth Street project site (no parking is permitted on the west side of the street).
- On Ringold Street between Eighth and Ninth Streets, on-street parking is not permitted on the south side of the street (i.e., adjacent to the project site). One-hour RPP Area “U” parking is permitted on the north side of the street. On Ringold Street, there are three driveways into the 350 Eighth Street project site.

Regulatory Setting

Applicable plans and regulations are discussed where relevant under “Environmental Setting” above and “Impacts and Mitigation Measures” below. In addition, Chapter 3, Plans and Policies, provides information on other plans and policies that address transportation and circulation issues applicable to the Project Area.

Impacts and Mitigation Measures

Significance Criteria

The City has not formally adopted significance standards for impacts related to transportation and circulation, but, consistent with Appendix G of the CEQA *Guidelines*, generally considers that implementation of the project could have a significant impact related to transportation and circulation if it were to:

- Conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
- Conflict with an applicable congestion management program, including but not limited to level-of-service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
- 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;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses;
- Result in inadequate emergency access; or
- Conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities.

For the purposes of this EIR, the Proposed Project would result in a significant impact with respect to transportation and circulation if the following conditions occur:

- The operational impact on signalized intersections is considered significant when Proposed Project-generated traffic would cause the LOS at a signalized intersection to deteriorate from LOS D or better to LOS E or F, or from LOS E to LOS F as a result of the addition of project traffic; or, for an unsignalized intersection, cause the LOS at the worst-operating approach⁷ to deteriorate from LOS D or better to LOS E or F (where Caltrans signal warrants would be met) or cause Caltrans signal warrants to be met when the worst approach is already operating at LOS E or LOS F. The Proposed Project may result in significant adverse impacts at intersections that operate at LOS E

⁷ An “approach” to an intersection represents vehicles entering the intersection on one street from one direction.

or F under baseline conditions depending upon the magnitude of the Proposed Project's contribution to the worsening of the average delay per vehicle. In addition, the Proposed Project would have a significant adverse impact if it would cause major traffic hazards or contribute considerably to cumulative traffic increases that would cause deterioration in levels of service to unacceptable levels.

- The operation impact on freeway ramps is considered significant when a Proposed Project-generated traffic would cause the level of service to deteriorate from LOS D or better to LOS E or F, or from LOS E to LOS F. In addition, the Proposed Project would have a significant effect if it would contribute substantially to ramp volumes already operating at LOS E or F.
- The Proposed Project would have a significant effect 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 (measured by capacity utilization in excess of an operator's standard or cause a substantial increase in delays or operating costs such that significant adverse impacts in transit service levels could result.
- The Proposed 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 Proposed Project would have a significant effect if it would create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas.
- The Proposed Project would have a significant effect if it would result in a loading demand during the peak hour of loading activities that could not be accommodated within proposed on-site loading facilities or within convenient on-street loading zones, and create potentially hazardous conditions or significant delays affecting traffic, transit, bicycles, or pedestrians.
- The Proposed Project would have a significant effect if it would result in inadequate emergency access.
- Construction-related impacts generally would not be considered significant due to their temporary and limited duration.

The San Francisco Planning Department does not consider parking supply as part of the permanent physical environment in San Francisco and therefore, does not consider changes in parking conditions to be environmental impacts as defined by CEQA.⁸ However, the San Francisco Planning Department acknowledges that parking conditions may be of interest to the public and the decision makers. Therefore, this report presents a parking analysis for information purposes.

⁸ Under California Public Resources Code (CEQA) Section 21060.5, "environment" can be defined as "the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, minerals, flora, fauna, noise and objects of historic or aesthetic significance." In 2010, the state CEQA Guidelines were amended to remove parking impacts from consideration in Appendix G, the environmental checklist. Thus, the City's practice is consistent with CEQA and the CEQA Guidelines. [ARE: I am not sure we need this language here, seems defensive, more like a legal brief than an EIR...]

Parking conditions are not static, as parking supply and demand varies from day to day, from day to night, from month to month, etc. Hence, the availability of parking spaces (or lack thereof) is not a permanent physical condition, but changes over time as people change their modes and patterns of travel.

Parking deficits are considered to be social effects, rather than impacts on the physical environment as defined by CEQA. Under CEQA, a project's social impacts need not be treated as significant impacts on the environment. Environmental documents should, however, address the secondary physical impacts that could be triggered by a social impact (CEQA Guidelines Section 15131(a)). The social inconvenience of parking deficits, such as having to hunt for scarce parking spaces, is not an environmental impact, but there may be secondary physical environmental impacts, such as increased traffic congestion at intersections, air quality impacts, safety impacts, or noise impacts caused by congestion. In the experience of San Francisco transportation planners, the absence of a ready supply of parking spaces, combined with available alternatives to auto travel (e.g., transit service, taxis, bicycles or travel by foot) and a relatively dense pattern of urban development, induces many drivers to seek and find alternative parking facilities, shift to other modes of travel, or change their overall travel habits. Any such resulting shifts to transit service in particular, would be in keeping with CCSF's "Transit First" policy. The Transit First Policy, established in San Francisco'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." As described above, the project area is well served by public transit and bike routes.

The transportation analysis accounts for potential secondary effects, such as cars circling and looking for a parking space in areas of limited parking supply, by assuming that all drivers would attempt to find parking at or near the project site and then seek parking farther away if convenient parking is unavailable. Moreover, the secondary effects of drivers searching for parking is typically offset by a reduction in vehicle trips due to others who are aware of constrained parking conditions in a given area. Hence, any secondary environmental impacts that may result from a shortfall in parking in the vicinity of the proposed project would be minor, and the traffic assignments used in the transportation analysis, as well as in the associated air quality, noise and pedestrian safety analyses, reasonably addresses potential secondary effects. In summary, changes in parking conditions are considered to be social impacts rather than impacts to the physical environment. Accordingly, the parking analysis below is presented for informational purposes only.

Approach to Analysis

Due to the nature of the Proposed Project, there would be no impact related to the following significance criteria, and no impact discussion is provided for these topics for the following reasons:

- ***Change in Air Traffic Patterns.*** The Project Area is not near an airfield; San Francisco International Airport is about 12 miles to the south, and Metropolitan Oakland International Airport is about 11 miles to the southeast. These distances are outside of the limit for objects near airports in the guidance published by the Federal Aviation Administration. Therefore, this criterion is not discussed further.

- ***Substantially Increase in Hazards Due to a Design Feature or Incompatible Uses.*** Development projects that would be permitted by the Draft Plan or Rezoning of Adjacent Parcels would not include design features that would be expected to result in particular safety hazards or introduce incompatible uses to the Project Area. On the contrary, many of the proposed public realm improvements that would be implemented as part of the Draft Plan would be anticipated to improve safety for pedestrians and bicyclists. Therefore, this criterion is not discussed further.

This analysis of transportation and circulation impacts that relates to the remaining significance criteria evaluates the potential effects on key intersections, transit, bicycle, pedestrian, loading, as well as emergency access, parking, traffic safety, and construction activities, and measures necessary to mitigate significant impacts were identified. The following four impact analysis scenarios were analyzed to determine the extent to which the Proposed Project may affect the surrounding transportation environment:

- Existing plus Draft Plan
- Existing plus Rezoning of Adjacent Parcels
- Existing plus 350 Eighth Street Project
- Cumulative (Year 2030) Conditions

The discussion of Draft Plan impacts is combined with the discussion of impacts that would occur under the Rezoning of Adjacent Parcels where appropriate (e.g., where impacts of these two components are less than significant). The analysis of the development associated with the Draft Plan and Rezoning of Adjacent Parcels was conducted for existing (2008 baseline) and cumulative conditions. The Draft Plan and Rezoning of Adjacent Parcels conditions assess the near-term impacts of the projected development, while cumulative conditions assess the long-term impacts of the Draft Plan and Rezoning of Adjacent Parcels in combination with other foreseeable future development.

The geographic context for the analysis of cumulative (Year 2030) transportation impacts is the local roadway network within the Project Area vicinity, and transit operations within San Francisco, and the cumulative analysis is based on 2030 conditions as projected by the San Francisco County Transportation Authority model. The Draft Plan, Rezoning of Adjacent Parcels, and 350 Eighth Street project impacts related to bicycle and pedestrian circulation, loading supply and demand, emergency vehicle access, and construction would be localized and site-specific, and would not contribute to impacts from other development and infrastructure projects in San Francisco. Future year 2030 cumulative impacts are analyzed for traffic and transit operations.

Travel Demand Analysis

Travel demand analysis was conducted for the Draft Plan, Rezoning of Adjacent Parcels, and the 350 Eighth Street project. Travel demand refers to the new vehicle, transit, pedestrian and bicycle traffic generated by the new land uses projected to be developed within the Draft Plan Area, Adjacent Parcels and the 350 Eighth Street project site.

Western SoMa Community Plan

The travel demand analysis assesses the full buildout of the Draft Plan. In addition, the travel demand analysis presents the change in person and vehicle trips from existing conditions.

Under Draft Plan, between 2008 and future year 2030, the Draft Plan Area is projected to experience a growth of an additional 2,900 residential units and 5,742 jobs. With implementation of the Draft Plan, the types of jobs are projected to change, which in turn would affect the travel demand generated by the proposed uses. As such, under the Draft Plan, the number of Management, Information and Professional Services (i.e., office-type) jobs would increase more than under projected future conditions without implementation of the Draft Plan, and the number of Retail and Entertainment jobs would decrease.

Travel demand associated with the growth in residential units and jobs was conducted using the travel demand methodology and assumptions in the *Transportation Impact Analysis Guidelines for Environmental Review*, October 2002 (SF Guidelines). The person-trip generation for the Draft Plan was based on the net-new increase in residential units and jobs, and includes residents, employees, and visitors travelling to and from the Draft Plan Area based upon weekday daily and p.m. peak-hour trip generation rates (number of trips per unit for residential uses, and number of trips per 1,000 gross square feet for the non-residential uses). Because the proposed zoning designation under the Draft Plan would require a minimum of 40 percent of two or more bedroom units for all projects of five or more units, the travel demand calculations for residential trips assumed that 60 percent of the units would be studio and one-bedroom units, and 40 percent of the units would be two and two-plus bedroom units.

To reflect that trips generated by the net-new uses would not all be new trips to the Draft Plan Area, and that a portion of the trips would be linked with existing and new trips, the trip generation rates for residential and retail uses were adjusted. This adjustment to the travel demand was made because new residential and commercial (e.g., retail, office) development is anticipated, and it would be expected that new residents to the area would frequent the retail establishments, and some residents may also work in the area. Therefore, a portion of the trips generated by the residential, office, and retail uses would be internal to the Draft Plan Area and would be the same trips (e.g., residential trip generation, which accounts for work and shopping trips, would also be the trips generated by the retail and office uses). For the residential uses, the percentage of daily trips occurring during the p.m. peak hour was adjusted based on the relationship between daily and p.m. peak-hour trip generation rates.⁹ That is, the percent of daily trips during the p.m. peak hour for the residential uses was adjusted from 17.3 percent to 10.8 percent. The trip generation for retail uses was modified to reflect that a percentage of trips would be pass-by trips. Based on San Diego Association of Government data for retail uses, a 30 percent reduction factor was developed and applied to the net-new trip generation for mixed uses.

The Draft Plan would generate approximately 12,928 p.m. peak-hour person-trips and 2,463 p.m. peak-hour vehicle trips. Of the total person-trips, about 35 percent would be by auto, 30 percent by transit, and 35 percent by walking, bicycling, and other modes. About 63 percent of the p.m. peak-hour person-trips would be to and from areas within San Francisco, with the greatest proportion occurring to and from the northeast quadrant of San Francisco. About 11 percent of the p.m. peak-hour person-trips would be to

⁹ Rates based on Institute of Traffic Engineers *Trip Generation*.

and from the East Bay, 8 percent to and from the South Bay, 4 percent to and from the North Bay, and 14 percent to and from outside the region.

For analysis of the p.m. peak-hour Existing plus Draft Plan conditions, the vehicle trips associated with the Draft Plan were assigned to the roadway network based on the vehicle trip distributions, and overlaid onto the existing traffic volumes at the study intersections to yield Existing plus Draft Plan turning movement volumes. For analysis of Existing plus Draft Plan conditions for the four study intersections analyzed for a.m. peak-hour conditions, the p.m. peak-hour vehicle trips assignment was factored to reflect a.m. peak-hour travel demand characteristics. Based on factors developed from comparison of a.m. and p.m. peak-hour trip generation rates, the a.m. peak-hour Draft Plan-generated vehicle trips were estimated to be about 52 percent of the p.m. peak-hour vehicle trip generation.

Future year 2030 Cumulative intersection turning movement volumes were estimated by calculating growth factors from traffic volumes for year 2010 and 2030 conditions obtained from the San Francisco County Transportation Authority model for the Transit Center District Plan Transportation Impact Study and the EN TRIPS, and then applying those growth factors to actual traffic volumes collected in the field. These growth factors represent the increase in vehicle trips due to development outside of the Draft Plan Area that would be traveling through the study intersections. For travel demand associated with Draft Plan-generated growth, the vehicle trips were assigned to the roadway network based on the vehicle trip distributions, and overlaid on the calculated background traffic volumes.

Rezoning of Adjacent Parcels

A similar methodology was applied to calculating travel demand for the Rezoning of Adjacent Parcels as described above for the Draft Plan. Rezoning of the Adjacent Parcels is projected to result in a decrease of 17 households and an increase in employment of approximately 610.¹⁰ These changes would generate approximately 1,210 p.m. peak-hour person-trips and 196 p.m. peak-hour vehicle-trips. Of the total person-trips, about 36 percent would be by auto, 29 percent by transit, and 35 percent by walking, bicycling, and other modes. The highest percentage of the trips generated by the Rezoning of Adjacent Parcels would come to and from areas within San Francisco.

350 Eighth Street Project

The 350 Eighth Street project would generate about 9,004 person-trips on a weekday daily basis. During the weekday p.m. peak hour, the 350 Eighth Street project would generate about 1,124 new person-trips and 258 new vehicle-trips. About 33 percent of the p.m. peak-hour person-trips would be by auto, 23 percent by transit, and 44 percent by other modes (including walking and bicycling). Of the 258 new vehicle-trips during the weekday p.m. peak hour, 156 vehicle-trips (61 percent) would be inbound to the project site, and 102 vehicle-trips (39 percent) would be outbound. The highest percentage of the trips generated by the 350 Eighth Street project would come to and from areas within San Francisco.

The freight delivery and service vehicle demand by the 350 Eighth Street project would result in about 20 delivery/service vehicle-trips per day. This corresponds to a demand for about one loading space during both the average hour and peak hour of loading activities.

¹⁰ Total household growth (Plan plus Adjacent Parcels) would be 2,883; total employment growth would be 6,354.

The new uses associated with the 350 Eighth Street project would generate a parking demand for about 661 spaces, of which 594 spaces would be long-term demand, and 67 spaces would be short-term demand. Of these 661 spaces, the residential component of 350 Eighth Street project would generate a demand for 561 spaces, and the commercial, arts and community uses would generate a parking demand for 100 spaces.

Transportation System Improvements

As discussed in Chapter 2, Project Description, the Draft Plan contains a number of goals with respect to transportation and circulation (see **Figure 2-3** on p. 2-13). Specific changes that have been identified by the San Francisco Planning Department at this time are listed below. As discussed in Chapter 2, some are analyzed on a project-specific level, while others have not been finalized and, thus, are analyzed programmatically in this EIR.

Project-Level Analysis

1. **Posting of “truck route” signs on Ninth, 10th, Harrison, and Bryant Streets in the Draft Plan Area.** To encourage truck traffic on certain routes and discourage trucks elsewhere, the City would post the following segments of Ninth, 10th, Harrison, and Bryant Streets within the Draft Plan Area with signage identifying them as “truck routes,” as these streets provide direct access to and from I-80 and U.S. Highway 101 (US 101):
 - Ninth Street between Bryant and Mission Streets;
 - 10th Street between Bryant and Mission Streets;
 - Harrison Street between Fourth and 13th Streets; and
 - Bryant Street between Fourth and 13th Streets.
2. **Installation of new signalized mid-block pedestrian crossings on Folsom Street.** The City would install new signalized pedestrian crossings on Folsom Street at the following two locations: Folsom Street at Rausch Street (between Seventh and Eighth Streets) and Folsom Street mid-block between Eighth and Ninth Streets. The new signalized intersections would have crosswalks and pedestrian countdown signals and would be actuated (activated by push buttons so that the pedestrian phase would operate only upon demand) and coordinated with upstream and downstream intersections.
3. **Installation of new signalized mid-block pedestrian crossings on Minna and Natoma Streets.** The City would install new signalized pedestrian crossings at mid-block locations between Howard and Mission Streets, at Seventh and Minna Streets, and at Eighth and Natoma Streets. The new signalized intersections would have crosswalks and pedestrian countdown signals and would be actuated and coordinated with upstream and downstream intersections at Howard and Mission Streets. New sidewalk corner bulb-outs would be provided at the new intersections.
4. **Installation of streetscape and traffic calming improvements on Minna, Natoma, and Ringold Streets.** The City would implement a variety of improvements that would enhance the pedestrian environment on the following street segments:
 - Minna Street between Seventh and Ninth Streets;
 - Natoma Street between Seventh and Ninth Streets; and
 - Ringold Street between Eighth and Ninth Streets.

Improvements have not been designed but could include chicanes,¹¹ pavement treatments, sidewalk bulb-outs, and enhanced entrance/exits that would also serve as traffic calming measures.

Program-Level Analysis

5. **Installation of sidewalk extensions/bulb-outs on Folsom Street.** The City would install sidewalk extensions/bulb-outs on Folsom Street between Fourth Street and 13th Street consistent with streetscape amenity treatments identified in the *San Francisco Better Streets Plan*.¹² Implementation of sidewalk extensions with removal of on-street parking at these locations would not reduce the number of travel lanes on Folsom Street. Folsom Street has one westbound and two to three eastbound lanes between 13th and 11th Streets, and is one-way eastbound between 11th and Fourth Streets with four lanes. It is noted that the types of improvements proposed for Folsom Street were previously analyzed, programmatically, in the Mitigated Negative Declaration for the *Better Streets Plan*.¹³ The *San Francisco Better Streets Plan* was adopted by the Board of Supervisors and the Mayor in December 2010.

6. **Installation of gateway treatments at and in vicinity of freeway off-ramps.** The City would implement gateway treatments at the following locations:

- I-80 eastbound off-ramp at Fourth and Bryant Streets;
- I-80 eastbound off-ramp at Seventh and Bryant Streets;
- US 101 northbound off-ramp at Ninth and Bryant Streets;
- I-80 westbound off-ramp at Fifth and Harrison Streets;
- I-280 eastbound/westbound ramps at Sixth and Brannan Streets;
- Eighth Street between Harrison and Bryant Streets;
- I-80 westbound off-ramp at Eighth Street at Harrison Street; and
- Seventh Street between Harrison and Bryant Streets.

Gateway treatments could include signage, lighting, and physical roadway features such as enhanced hardscape area, landscaped islands, or colored textured pavement. It is anticipated that these treatments would reduce vehicle speeds and make conditions safer for pedestrians, while at the same time identifying the neighborhood into which the off-ramps terminate.

7. **Installation of public realm greening and pedestrian enhancements along Folsom Street and 12th Street.** The City would implement public realm greening and pedestrian enhancements such as street plantings, sidewalk bulb-outs/extensions (see above), and conversion of parallel parking spaces to 90-degree parking spaces. These improvements would be implemented on the following street segments: Folsom Street between Fourth and 13th Streets and 12th Street between Howard and Harrison Streets.

Each of the seven transportation improvements was evaluated individually and in combination, and potential impacts on traffic, transit, bicyclists, pedestrians, loading and emergency access. With the exceptions of loading impacts associated with transportation improvements #5 and #7 (discussed below under Impact TR-4), the impacts of these transportation improvements would be less than significant.

¹¹ A chicane as a traffic calming measure consists of sidewalk extensions, or placement of vehicle parking spaces, that jog from one side of the street to the other to create a circuitous route. Chicanes encourage motorists to drive more slowly and carefully.

¹² San Francisco Planning Department, *Final San Francisco Better Streets Plan*, adopted December 2010. Available online at http://www.sf-planning.org/ftp/BetterStreets/proposals.htm#Final_Plan, accessed on April 19, 2012.

¹³ San Francisco Planning Department, *Better Streets Plan, Final Mitigated Negative Declaration* (Case No. 2007.1238E). Issued September 15, 2010. Available at the San Francisco Planning Department at 1650 Mission Street, Fourth Floor, San Francisco.

Impacts of the Western SoMa Community Plan and Rezoning of Adjacent Parcels (Program-Level Analysis)

Operational Impacts

As stated above, during the weekday p.m. peak hour, the development associated with the Draft Plan would generate 1,156 inbound and 1,307 outbound vehicle-trips (total of 2,463 vehicle-trips). **Table 4.E-1** presents a summary comparison of Existing and Existing plus Plan intersection LOS for the weekday a.m. and p.m. peak hours. During the a.m. peak hour, three of the four study intersections would continue to operate at LOS D or better (the same as under existing conditions). During the p.m. peak hour, 17 of the 20 study intersections would continue to operate at LOS D or better (as compared with 18 intersections operating at LOS D or better under existing conditions). The following intersections would operate at LOS E or LOS F conditions:

- Fifth/Bryant/I-80 Eastbound on-ramp (p.m. peak hour);
- Sixth/Brannan/I-280 ramps (a.m. and p.m. peak hour); and
- Eighth/Harrison/I-80 Westbound off-ramp (p.m. peak hour).

Impact TR-1a: The Draft Plan would cause levels of service at the intersection of Fifth/Bryant/I-80 Eastbound on-ramp to deteriorate during the p.m. peak hour, thereby conflicting with an applicable congestion management program that establishes measures of effectiveness for the performance of the circulation system. (Significant and Unavoidable)

Under the Draft Plan, the intersection of Fifth/Bryant/I-80 Eastbound on-ramp would operate at LOS F during the p.m. peak hour, as compared with LOS E under existing conditions, and therefore, the Draft Plan's impacts on traffic operations at this intersection would be considered a significant impact. The poor operating conditions at this intersection are due to the high volumes destined to the I-80 eastbound on-ramp during the p.m. peak hour, and congested conditions on I-80 eastbound mainline. To mitigate the poor operating conditions, additional capacity on the I-80 eastbound on-ramp and mainline would be required. However, provision of additional capacity on the newly replaced I-80 eastbound aerial structure likely would be infeasible due to the right-of-way constraints on the structure (reconfiguring mainline travel lanes to provide an additional merge lane from the Fifth Street on-ramp would require reducing the number of lanes upstream of the merge). Without providing additional capacity on the on-ramp and mainline, signal timing adjustments at the intersection to provide for additional eastbound green time would not improve intersection operations. For these reasons, no feasible mitigation measures to reduce impacts to less than significant exist, and the Draft Plan's impact at the intersection of Fifth/Bryant/I-80 Eastbound on-ramp would be significant and unavoidable.

Mitigation: None feasible.

TABLE 4.E-1
INTERSECTION LEVEL OF SERVICE (LOS) CONDITIONS WEEKDAY AM AND PM PEAK HOURS
EXISTING, EXISTING PLUS DRAFT PLAN, EXISTING PLUS REZONING OF ADJACENT PARCELS,
EXISTING PLUS 350 EIGHTH STREET PROJECT, AND 2030 CUMULATIVE^a

Intersections	Existing Conditions				Existing plus Draft Plan				Existing plus Rezoning of Adjacent Parcels				Existing plus 350 Eighth Street Project				Cumulative (2030) Conditions ^b			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	LOS	Delay ^c	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1. Fifth/Bryant/I-80 Eastbound on-ramp	C	29.5	E	60.0	D	38.5	F	>80	C	30.2	E	60.0	-	-	E	63.3	F	>80	F	>80
2. Fifth Street / Brannan Street	-	-	C	31.2	-	-	D	39.6			C	31.2	-	-	C	31.2	-	-	D	48.8
3. Sixth Street / Bryant Street	C	28.5	B	16.7	C	30.9	B	17.4	C	28.6	B	16.8	-	-	B	16.8	D	49.2	B	20.1
4. Sixth Street/Brannan/I-280 ramps	E	64.1	E	67.1	E	65.6	E	63.1	E	64.1	E	67.6	-	-	E	67.5	F	>80	F	>80
5. Seventh Street / Mission Street	-	-	C	26.3	-	-	C	28.7			C	27.8	-	-	C	26.3	-	-	D	43.2
6. Seventh Street / Folsom Street	-	-	B	16.9	-	-	B	17.4			B	17.0	-	-	B	16.9	-	-	C	22.4
7. Seventh/Harrison/I-80 Westbound on-ramp	B	12.4	B	19.2	B	12.6	C	21.2	B	12.4	B	19.2	-	-	B	19.3	B	13.2	C	24.4
8. Eighth Street / Howard Street	-	-	B	15.7	-	-	B	17.5			C	15.9	-	-	B	16.1	-	-	C	23.2
9. Eighth Street / Folsom Street	-	-	B	14.5	-	-	B	15.5			B	14.6	-	-	B	14.9	-	-	D	35.9
10. Eighth/Harrison/I-80 Westbound off-ramp	-	-	D	47.4	-	-	F	>80			D	49.3	-	-	E	67.6	-	-	F	>80
11. Eighth Street / Bryant Street	-	-	C	26.0	-	-	C	34.4			C	27.2	-	-	C	26.8	-	-	D	43.5
12. Ninth Street / Mission Street	-	-	C	22.3	-	-	C	27.6			C	23.6	-	-	C	22.8	-	-	D	54.2
13. Ninth Street / Folsom Street	-	-	B	17.7	-	-	C	26.0			B	18.0	-	-	B	19.1	-	-	D	48.7
14. Ninth Street / Harrison Street	-	-	B	14.8	-	-	B	15.9			B	14.9	-	-	B	15.0	-	-	B	17.4
15. Ninth/Bryant/U.S. 101 Northbound off-ramp	-	-	D	35.9	-	-	D	38.3			D	36.2	-	-	D	36.1	-	-	D	44.8
16. 10 th Street / Howard Street	-	-	C	22.3	-	-	C	24.5			C	22.9	-	-	C	22.3	-	-	C	30.5
17. 10 th Street / Harrison Street	-	-	C	20.7	-	-	C	22.2			C	20.7	-	-	C	21.0	-	-	C	23.5
18. 11 th Street / Howard Street	-	-	B	15.4	-	-	B	17.1			B	15.4	-	-	B	15.4	-	-	C	20.9
19. 13 th Street / Folsom Street	-	-	C	20.7	-	-	C	25.4			C	21.1	-	-	C	21.0	-	-	D	40.2
20. 13 th Street / Harrison Street	-	-	B	15.5	-	-	B	16.4			B	15.6	-	-	B	15.6	-	-	B	18.7

^a Levels of service (LOS) were determined using the analysis methodologies presented in the 2000 *Highway Capacity Manual*.

^b Cumulative volumes were derived on the basis of information about traffic growth patterns, which used the San Francisco County Transportation Authority countywide travel demand forecasting model, taking into account the development anticipated in the vicinity of the project, plus the expected growth in housing and employment for the remainder of San Francisco and the nine-county Bay Area.

^c The LOS and delay (in seconds per vehicle) for signalized intersections represent conditions for the overall intersection.

SOURCE: LWC Consulting, 2012

Impact TR-1b: The Draft Plan would cause levels of service at the intersection of Sixth/Brannan/I-280 ramps to deteriorate during the a.m. and p.m. peak hours, thereby conflicting with an applicable congestion management program that establishes measures of effectiveness for the performance of the circulation system. (Significant and Unavoidable)

Under the Draft Plan, the intersection of Sixth/Brannan/I-280 ramps would continue to operate at LOS E during both the a.m. and p.m. peak hours, as under Existing conditions. The Draft Plan's contribution to the northbound critical movement during the a.m. peak hour would not exceed the significance threshold and would be a less-than-significant impact. However, the Draft Plan's contributions to the eastbound and westbound critical movements during the p.m. peak hour would exceed the significance threshold, and would be considered a significant impact. To mitigate the poor operating conditions, additional capacity on the northbound (I-280 off-ramp), eastbound, and westbound approaches would be required. However, provision of additional northbound capacity is constrained by the freeway structure, which would require substantial reconstruction to widen, and eastbound and westbound capacities have been maximized (on-street parking has been removed on the south side of the street to provide for additional westbound turn lanes, and the sidewalk has been narrowed to accommodate the eastbound turn onto the on-ramp). The signal operations have been optimized, and additional minor adjustments would not substantially improve operating conditions. For these reasons, no feasible mitigation measures to reduce impacts to less than significant were identified, and therefore, the Draft Plan's impact at the intersection of Sixth/Brannan/I-280 ramps would be significant and unavoidable.

Mitigation: None feasible.

Impact TR-1c: The Draft Plan would cause levels of service at the intersection of Eighth/Harrison/I-80 Westbound off-ramp to deteriorate during the p.m. peak hour, thereby conflicting with an applicable congestion management program that establishes measures of effectiveness for the performance of the circulation system. (Significant and Unavoidable with Mitigation)

Under the Draft Plan, the intersection of Eighth/Harrison/I-80 Westbound off-ramp would operate at LOS F during the p.m. peak hour, as compared with LOS D under Existing conditions, and therefore, the Draft Plan's impacts on traffic operations at this intersection would be considered a significant impact. Implementation of **Mitigation Measure M-TR-1c**, Optimization of Signal Timing at the Eighth/Harrison/I-80 Westbound Off-Ramp Intersection, below, would improve traffic operations under Draft Plan conditions, but would not reduce the impact to less-than-significant level. However, even in the absence of the 350 Eighth Street project, Mitigation Measure M-TR-1c should be applied to improve traffic operations under Draft Plan conditions even if only marginally. Any additional signal timing adjustments would be infeasible due to traffic, transit and pedestrian timing requirements. Travel lane capacity at this intersection has been maximized, and providing additional travel lanes to mitigate impacts would require substantial reductions in sidewalk widths, which would be inconsistent with the transit and pedestrian environment encouraged by the City and County of San Francisco. Therefore, the Draft Plan's traffic impact at the intersection of Eighth/Harrison/I-80 Westbound off-ramp would remain significant and unavoidable, even with implementation of Mitigation Measure M-TR-1c.

Mitigation Measure

M-TR-1c: Optimization of Signal Timing at the Eighth/Harrison/I-80 Westbound Off-Ramp Intersection. The signal timing at Eighth/Harrison/I-80 Westbound off-ramp intersection during the weekday p.m. peak period shall be optimized by changing the signal cycle from 60 to 90 seconds and implementing signal timing durations similar to those at the intersection of Fifth/Harrison/I-80 Westbound off-ramp. With implementation of this mitigation measure, the intersection would operate at LOS D during the p.m. peak hour, thereby reducing impacts at this intersection to a less-than significant-level. Implementation of this mitigation measure would be the responsibility of MTA and would require coordination with Caltrans to ensure that I-80 off-ramp operations and upstream or downstream intersections are not adversely affected.

Significance after Mitigation: Although implementation of **Mitigation Measure M-TR-1c**, Optimization of Signal Timing at the Eighth/Harrison/I-80 Westbound Off-Ramp Intersection, would reduce impacts to the intersection, implementation of this mitigation measure would be the responsibility of MTA in coordination with Caltrans, and thus its implementation is uncertain. Therefore, the impact is considered significant and unavoidable.

Improvement Measure

Implementation of Improvement Measure I-TR-1 would reduce vehicle trip generation by subsequent development projects. However, because the anticipated reduction in vehicle trips cannot be accurately quantified, particularly with respect to the specific intersections where significant effects on LOS would occur, and because the volume of trips generated by the Draft Plan and Rezoning of Adjacent Parcels would have to be substantially reduced—beyond a feasibly achievable level with implementation of TDM strategies—to avoid a significant impact, the feasibility of this improvement measure is unknown, and it is accordingly not identified as a mitigation measure. This impact would remain **significant and unavoidable**.

I-TR-1: Transportation Demand Management Strategies for Future Development Projects. To reduce vehicle trip generation by subsequent development projects in the Draft Plan Area and on Adjacent Parcels, those such projects that would generate more than 3,500 daily vehicle trips,¹⁴ or would emit criteria pollutants in excess of one or more applicable significance thresholds, as determined by the Environmental Review Officer, shall develop and implement a Transportation Demand Management plan as part of project approval.

¹⁴ The threshold of 3,500 vehicle trips is based on the number of trips that, depending on the precise nature of a project, would result in emissions of one or more criteria pollutants from project operation exceeding the City's significance thresholds. (Based on comparison of emissions calculations from several recent EIRs, including those for the 222 Second Street, 350 Mission Street, 8 Washington Street, Parkmerced, and Treasure Island projects). This analysis is available for review at the Planning Department in Case File No. 2008.0877E.

TDM strategies identified in the TDM plan shall include a minimum of the following, or other measures, as determined applicable by the Planning Department, applicable to the proposed project:

- Identify on-site transportation manager who would be responsible for orienting new residents or employees about transportation options, updating transportation information at display/kiosk, coordination of ridesharing, provision of transit passes, etc;
- Include in the price of rental/Home Owners Association fee a monthly Muni Fast Pass;
- Provide a transportation kiosk/display in commercial or residential lobby, or other highly visible location, with regularly updated information about transportation choices;
- Provide and maintain pool of bicycles for building residents;
- Provide on-site bicycle rental/loaner bicycles to retail/commercial employees and hotel guests for local travel;
- Provide additional Class 1 bicycle parking spaces for resident or retail/commercial employee use;
- Provide bicycle parking (valet or Class 1 secure parking) for hotel guests;
- Provide Class 2 bicycle parking for retail/commercial and residential visitor use;
- Require retail/commercial employees to pay for on-site parking;
- Reduce amount of on-site vehicle parking for retail/commercial and residential land uses;
- Provide information on website (e.g., retail and/or commercial businesses, museums, hotels) about how to access the building via transit, walking, and bicycling;
- Provide on-site, and/or with reservation sale of one, three, and seven-day Muni Passports and/or pre-loaded Clipper Cards for hotels; and/or
- Offer other transit, ridesharing, bicycling, and walking incentives for employees.

Impact TR-1d: The Draft Plan would not cause levels of service at 17 out of the 20 local intersections to deteriorate, and would therefore not conflict with any applicable congestion management programs, plans, ordinances or policies establishing measures of effectiveness for the performance of the circulation system at those locations. (Less than Significant)

Table 4.E-1 shows that 17 of the 20 intersections would continue to operate acceptably under the Draft Plan and each scenario would have a less-than-significant impact in relation to this criterion:

- Fifth Street / Brannan Street
- Sixth Street / Bryant Street
- Seventh Street / Mission Street
- Seventh Street / Folsom Street
- Seventh/Harrison/I-80 Westbound on-ramp
- Eighth Street / Howard Street
- Eighth Street / Folsom Street
- Eighth Street / Bryant Street
- Ninth Street / Mission Street
- Ninth Street / Folsom Street
- Ninth Street / Harrison Street
- Ninth/Bryant/U.S. 101 Northbound off-ramp
- 10th Street / Howard Street
- 10th Street / Harrison Street
- 11th Street / Howard Street
- 13th Street / Folsom Street
- 13th Street / Harrison Street

An addition of Draft Plan-related trips to these intersections would not deteriorate their existing operating conditions to unacceptable levels. Therefore, Project-related impacts at these locations would be less than significant.

Mitigation: None required.

Impact TR-1e: Rezoning of Adjacent Parcels would not cause levels of service at any of the local intersections to deteriorate, and would therefore not conflict with any applicable congestion management programs, plans, ordinances or policies establishing measures of effectiveness for the performance of the circulation system. (Less than Significant)

As stated above, during the weekday p.m. peak hour, the Rezoning of Adjacent Parcels would generate a total of 196 vehicle-trips. Table 4.E-1 presents a summary comparison of existing conditions and existing conditions plus Rezoning of Adjacent Parcels intersection LOS for the weekday a.m. and p.m. peak hours. During the a.m. peak hour, three of the four study intersections would continue to operate at LOS D or better (the same as under existing conditions). During the p.m. peak hour, 18 of the 20 study intersections would continue to operate at LOS D or better (same as under existing conditions). The following intersections would operate at LOS E or LOS F conditions:

- Fifth/Bryant/I-80 Eastbound on-ramp (p.m. peak hour); and
- Sixth/Brannan/I-280 ramps (a.m. and p.m. peak hour).

With the Rezoning of Adjacent Parcels, the intersection of Fifth/Bryant/I-80 Eastbound on-ramp would operate at LOS E during the p.m. peak hour (the same as under existing conditions). Rezoning of the Adjacent Parcels would not add any vehicles to this intersection during the p.m. peak hour, and therefore, the impacts of the Rezoning of Adjacent Parcels on traffic operations at this intersection would be less than significant.

With the Rezoning of Adjacent Parcels, the intersection of Sixth/Brannan/I-280 ramps would continue to operate at LOS E during both the a.m. and p.m. peak hours (the same as under existing conditions). Development associated with Rezoning of Adjacent Parcels would add a total of 11 vehicle trips during the a.m. peak hour, and 22 vehicle trips during the p.m. peak hour. However, development associated with the Adjacent Parcels would not add any trips to the critical movements that would operate at LOS E or LOS F conditions during the a.m. or p.m. peak hours. Therefore, the Rezoning of Adjacent Parcels

would not cause levels of service at local intersections to deteriorate and this impact would be less than significant.

Mitigation: None required.

Impact TR-2: Neither the Draft Plan nor the Rezoning of Adjacent Parcels would cause exceedance of the capacity utilization standards for Muni lines or regional transit providers, or cause a substantial increase in delays or operating costs; thus, neither the Draft Plan nor the Rezoning of Adjacent Parcels would conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. (Less than Significant)

During the weekday p.m. peak hour, the development associated with the Draft Plan and Adjacent Parcels would generate 3,799 transit trips (1,613 inbound and 2,186 outbound); the Draft Plan would generate about 3,454 transit trips and the Rezoning of Adjacent Parcels would generate about 345 transit trips. These net-new transit trips would utilize the nearby Muni lines and regional transit lines, and may include transfers to other Muni bus and light rail lines, or other regional transit providers. Based on projected trip distribution patterns, it was estimated that out of the 2,186 outbound transit trips generated by the Draft Plan and Adjacent Parcels, about 1,287 would cross the Muni screenlines, 588 would cross the regional screenlines, and the remaining 311 would not cross any screenlines.¹⁵

The addition of the riders generated by the Draft Plan and Adjacent Parcels to the four Muni screenlines would not substantially increase ridership, and the peak-hour capacity utilization of the screenlines would be below 85 percent capacity utilization, with the exception of the subway lines (i.e., K, L, M, N light rail lines) that cross the southwest screenline, which would operate at capacity utilization of 89 percent, as compared with the 87 percent capacity utilization under existing conditions. With the addition of Draft Plan and Adjacent Parcels transit trips, individual transit vehicles may face slightly more overcrowded conditions, and would have limited space to accommodate more riders. The additional 172 transit trips generated by the Draft Plan and Adjacent Parcels that would travel across this corridor during the p.m. peak hour would not contribute substantially to the overall ridership at the maximum load point (2.8 percent of the total ridership).

Similar to Muni, the analysis of regional transit screenlines assesses the effect of project-generated transit-trips on transit conditions in the outbound direction during the weekday p.m. peak hour. During the weekday p.m. peak hour there would be about 334 transit trips destined to the East Bay, 66 transit trips to the North Bay, and 188 transit trips to the South Bay. The addition of passengers generated by the Draft Plan and Adjacent Parcels would not have a substantial effect on the regional transit providers during the weekday p.m. peak hour, as the capacity utilization for all regional transit providers would remain similar to those under existing conditions. In addition, the capacity utilization for all regional transit providers would be under their capacity utilization standards.

¹⁵ The concept of screenlines is used to describe the magnitude of travel to or from the greater downtown area, and to compare estimated transit volumes to available capacities. Screenlines are hypothetical lines that would be crossed by persons traveling between downtown and its vicinity and other parts of San Francisco and the region.

As noted above, the Muni and regional screenline analyses are conducted for p.m. peak-hour trips outbound from downtown San Francisco. Because the new development that would be incentivized by the Draft Plan and Rezoning of Adjacent Parcels would generate new inbound trips during the p.m. peak hour, a qualitative assessment was performed for the inbound trips generated by the residential units. Because the predominant flow of travel during the p.m. peak hour is away from downtown San Francisco, the Muni and regional transit lines that travel into downtown San Francisco from other parts of the city and the region have relatively low ridership. For example, the inbound Muni bus and rail lines that operate along Market Street and the bus lines that serve the Transbay Terminal have excess capacity during the weekday p.m. peak hour. Because existing capacity is currently available in the inbound direction during the p.m. peak hour, it is anticipated that the addition of the Draft Plan and Adjacent Parcels transit trips in the inbound direction would not substantially affect transit conditions.

Because neither the Draft Plan nor the Rezoning of Adjacent Parcels would substantially affect the capacity utilization of the local Muni and regional transit lines, transit impacts would be less than significant; thus, neither the Draft Plan nor the Rezoning of Adjacent Parcels would conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system.

Mitigation: None required.

Impact TR-3: Neither the Draft Plan nor the Rezoning of Adjacent Parcels would result in a loading demand that could not be accommodated within on-site and nearby on-street loading facilities; thus, neither the Draft Plan nor the Rezoning of Adjacent Parcels would conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. (Less than Significant)

In general, the analysis of loading impacts are specific to individual development projects, and includes a comparison of proposed loading space supply to the Planning Code requirements and the estimated loading demand during the peak hour of loading activities. Overall, the Draft Plan and Adjacent Parcels would generate about 487 delivery and service vehicle trips per day, which would result in a demand for about 28 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. To the extent that loading demand is not accommodated on-site, and could not be accommodated within existing or new on-street loading zones, double-parking, and/or 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. Because it is expected that development associated with the Draft Plan and Rezoning of Adjacent Parcels would include off-street loading spaces consistent with the requirement of the Planning Code, and that development-generated loading demand would be accommodated within the combination of proposed off-street spaces, and existing and new on-street loading spaces, loading impacts would be less than significant.

Mitigation: None required.

Impact TR-4: The Draft Plan's proposed transportation system improvements would remove on-street loading spaces along Folsom Street that could be located nearby, but would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. (Less than Significant with Mitigation)

Implementation of the transportation improvements generally would not affect on-street or off-street commercial vehicle loading/unloading spaces. On Minna and Natoma Streets, yellow commercial vehicle loading/unloading spaces would be maintained, as would the existing loading space on the east side of Eighth Street south of Natoma Street. However, on Folsom Street, construction of sidewalk extensions and bulb-outs may affect yellow commercial vehicle loading/unloading zones. Implementation of **Mitigation Measure M-TR-4**, Provision of New Loading Spaces on Folsom Street, would improve loading conditions on Folsom Street and would reduce the impact of the Draft Plan's transportation system improvements to a less-than-significant level.

Mitigation Measure

M-TR-4: Provision of New Loading Spaces on Folsom Street. This mitigation measure shall apply to any removal of yellow commercial vehicle freight loading spaces, assuming that the need for the truck loading spaces remains at the locations where these truck loading spaces would be removed. To avoid any potential adverse effect from the sidewalk extensions and bulb-out improvements on loading, the project sponsors of individual projects within the Project Area shall coordinate with MTA to install new loading spaces, of equal length, on the same block and side-of-the-street at locations where yellow commercial vehicle loading spaces are removed. This would ensure that an equally convenient supply of on-street loading would be provided to compensate for any space that would be removed. With implementation of the mitigation measure, the impact on loading operations on Folsom Street would be reduced to a less-than-significant level.

Significance after Mitigation: Less than Significant.

Impact TR-5: The Draft Plan's proposed transportation system improvements would remove on-street loading spaces along 12th Street that could not be located nearby and would thereby result in potential conflicts between trucks and other traffic. (Significant and Unavoidable)

There are commercial establishments on both sides of 12th Street with adjacent on-street yellow commercial vehicle and white passenger loading zones on both sides of the street (shuttle bus loading zones). The transportation improvements (as described above, and in detail in Chapter 2, Project Description) would not affect the existing shuttle bus zone on the east side of 12th Street that provides curbside passenger dropoff and pickup for the 12th and Kissling Garage. Furthermore, it would be

possible to reconfigure the 30-minute loading zone serving City Lights within the 90-degree parking on the east side of 12th Street. However, longer trucks would extend beyond the parking space into the adjacent northbound travel lane and due to difficult maneuverability and access the 90-degree spaces for trucks, some trucks may double-park adjacent to the parking lane, and vehicles would need to travel in the opposite travel lane to bypass a double-parked vehicle.

On the west side of 12th Street, the removal of parallel on-street parking would eliminate the two yellow loading zones adjacent to the A1 Plumbing Supply store and the San Francisco Chocolate Factory. Both commercial establishments are located mid-block between Howard and Folsom Streets, and off-street or on-street loading is not located in the vicinity to accommodate the loading activity. The loss of the loading zones could result in double parking within the travel lane. Vehicles would need to travel in the opposing travel lane to bypass a double-parked vehicle, and double-parked vehicles would result in increased interference with vehicular and bicycle flows. Therefore, the removal of parking on the west side of 12th Street between Howard and Folsom Streets would eliminate two active on-street loading zones which cannot be reasonably accommodated nearby, and impacts of the parking removal on loading operations would be a significant impact.

As described above, implementation of Mitigation Measure M-TR-4, Provision of New Loading Spaces on Folsom Street, would not reduce impacts on loading conditions on 12th Street (as it would on Folsom Street), as transportation system improvements on 12th Street, between Howard and Harrison Streets, would eliminate all on-street parking spaces on the west side of the street, including two active loading zones. Because all curbside parking would be removed, the existing on-street zones could not be accommodated elsewhere on the block, and implementation of Mitigation Measure M-TR-4 would not be feasible, the impact of the Draft Plan's public realm improvements on 12th Street would remain significant and unavoidable.

Mitigation: None feasible.

Impact TR-6: Neither the Draft Plan nor the Rezoning of Adjacent Parcels would result in inadequate emergency access. (Less than Significant)

Development associated with the Draft Plan and Rezoning of Adjacent Parcels would not change travel lanes or result in street closures, and emergency vehicle access to the Project Area would remain unchanged from existing conditions. Furthermore, the Draft Plan's transportation improvements would not hinder emergency vehicle access, as streetscape improvements on Folsom, Minna, Natoma, and 12th streets would be designed to ensure that emergency vehicles would be adequately accommodated. All traffic calming improvements, such as proposed chicanes on Minna and Natoma streets, would be reviewed by the San Francisco Fire Department prior to implementation to ensure adequate emergency vehicle access. Therefore, the impacts of the Draft Plan and Rezoning of Adjacent Parcels (both individually and combined) on emergency vehicle access would be less than significant.

Mitigation: None required.

Impact TR-7: Neither the Draft Plan nor the Rezoning of Adjacent Parcels would conflict with adopted policies, plans, or programs regarding bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. (Less than Significant)

The Draft Plan and Rezoning of Adjacent Parcels would add about 8,366 pedestrian trips to the surrounding streets (including 3,799 transit trips and 4,567 walk/other trips) during the p.m. peak hour; the Draft Plan would generate about 7,596 pedestrian trips, and the Rezoning of Adjacent Parcels would generate about 770 pedestrian trips. In general, the new pedestrian trips generated by the Draft Plan and Rezoning of Adjacent Parcels would be accommodated on the existing sidewalks, and would not substantially affect pedestrian operations on the nearby sidewalks and crosswalks. Increases in pedestrian volumes would be most noticeable in the immediate vicinity of the individual development projects that would be allowed under the Draft Plan. Furthermore, because the Draft Plan and of Adjacent Parcels would result in an increase in about 2,900 residential units in the Project Area, pedestrian activities during the night-time and overnight hours would be expected to increase.

The Project Area has a built-out sidewalk network, with the exception of Townsend Street between Seventh and Fourth Streets. Within Project Area, alleyways also have sidewalks on both sides of the street, although in some instances sidewalks may not be complete or may be in poor condition.

Because existing pedestrian volumes within the Project Area are low to moderate, the character of interactions between pedestrians and vehicles may change under the Draft Plan and Rezoning of Adjacent Parcels (both individually and combined). For future conditions, the frequency of conflicts between pedestrians and vehicles could likely increase as traffic volumes increase along with increases in pedestrian exposure associated with residential and non-residential development, except where there are countermeasures to reduce vehicle volumes or conflicts. There are a number of factors that contribute to increased pedestrian-vehicle collisions, and the number of collisions at an intersection is a function of the traffic volume, travel speeds, intersection configuration, traffic control, surrounding land uses, location, and number of pedestrians.¹⁶ The addition of pedestrian trips associated with the Draft Plan and Rezoning of Adjacent Parcels (both individually and combined) would likely change the character of the Project Area's pedestrian environment, but would not be expected to have a significant impact on existing pedestrian conditions because neither vehicle traffic volumes nor pedestrian activity would increase to such a degree that a substantial increase in conflicts would be anticipated, compared to existing conditions. Overall, the impacts of the Draft Plan and Rezoning of Adjacent Parcels (both individually and combined) on pedestrians would be less than significant.

During the p.m. peak hour, the Draft Plan and Rezoning of Adjacent Parcels would generate about 4,567 walk/other trips (about 4,142 trips by the Draft Plan and about 425 by the Rezoning of Adjacent Parcels), a portion of which would be bicycle trips. These new bicycle trips would utilize the existing and planned system of bicycle routes. Bicycle lanes are provided on Howard, Folsom, and Townsend Streets for east-west travel within and through the Project Area, and on Seventh, Eighth, and 11th Streets for north-south

¹⁶ The San Francisco Department of Public Health (DPH) has developed a "pedestrian injury model" that attempts to predict the change in collisions involving pedestrian injury on the basis of a number of different factors. However, the Planning Department has not fully evaluated this model, which is therefore not used as a quantitative significance threshold.

travel within and through the Project Area. As bicycling continues to increase throughout San Francisco, the number of bicyclists on the area bicycle routes and lanes also is anticipated to increase.

While the bicycle facilities within the Project Area are well-utilized by bicyclists, it is not expected that the added bicycle trips associated with the Draft Plan and Rezoning of Adjacent Parcels (both individually and combined) would result in significant impacts on bicyclists because, as with pedestrians, neither vehicle traffic nor bicycle traffic volumes would increase to such a degree that a substantial increase in collisions would be anticipated, compared to existing conditions. However, depending on the design of the future development projects, there may be increased conflicts with vehicles using parking garage driveways along these bicycle routes. Individual development projects would be required to comply with provisions of the Planning Code pertaining to bicycle parking spaces in off-street parking facilities, and other support facilities, such as showers and lockers as well as any driveway design guidelines. Overall, neither the Draft Plan nor the Rezoning Adjacent Parcels would conflict with adopted policies, plans, or programs regarding bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Mitigation: None required.

Construction Impacts

Impact TR-8: Construction under the Draft Plan and Rezoning of Adjacent Parcels, including construction of individual future projects, would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. (Less than Significant)

In general, the analysis of construction impacts is specific to individual development projects, and includes 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. As such, construction impacts have not been assessed for the Draft Plan or Rezoning of Adjacent Parcels. It should be noted that potential impacts associated with individual projects are not usually considered significant because they are temporary and generally of short-term duration.

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 traffic lane closures are required to be coordinated with the City in order to minimize the impacts on local traffic.

During an individual project's construction period, temporary and intermittent traffic and transit impacts may result from truck movements to and from individual 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. The sponsors of individual project sponsors would have to meet with the MTA, including Muni, Interdepartmental Staff Committee on Traffic and Transportation, and other responsible City agencies to coordinate construction activities so as to minimize construction impacts on vehicular, transit and pedestrian traffic.

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 lots, either by those vehicles or by vehicles currently parking in on-street spaces that would be displaced by construction workers vehicles. As a result, construction-related transportation impacts associated with the Draft Plan and Rezoning of Adjacent Parcels (both individually and combined) would be less than significant and neither the Draft Plan nor the Rezoning of Adjacent Parcels would conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system.

Mitigation: None required.

Parking Information

Approach to Parking Analysis

As noted on pages 4.E-13 through 4.E-14, San Francisco does not consider parking supply as part of the permanent physical environment in San Francisco and therefore, does not consider changes in parking conditions to be environmental impacts as defined by CEQA.¹⁷ The San Francisco Planning Department acknowledges, however, that parking conditions may be of interest to the public and the decision-makers. Therefore, the following information is presented for information purposes.

Parking Supply and Demand

Individual future development projects in the Project Area would be required to comply with the Planning Code requirements for parking, including the number of parking spaces, provision of car-sharing spaces, and the separation of parking costs from housing costs in new residential buildings. For non-residential uses, the current maximum permitted requirements for the Eastern Neighborhood Mixed Use Districts would remain. For residential uses, parking would be subject to conditions related to type and location of parking, and a maximum of 0.75 spaces per unit would be permitted. For units with at least two bedrooms and at least 1,000 square feet of occupied floor area, up to 1.0 space per unit would be permitted.

¹⁷ Under California Public Resources Code (CEQA) Section 21060.5, "environment" can be defined as "the physical conditions that exist within the area that will be affected by a proposed project, including land, air, water, minerals, flora, fauna, noise and objects of historic or aesthetic significance."

Residential and non-residential development associated with the Draft Plan and Adjacent Parcels would generate a parking demand for about 8,127 vehicle parking spaces, including a residential demand for 3,633 spaces, and a non-residential demand of 4,494 spaces; the Draft Plan would generate a total parking demand of about 7,642 vehicle parking spaces, and the Rezoning of Adjacent Parcels would generate a total parking demand of about 485 vehicle parking spaces. Based on the proposed rezoning, development in the Project Area could be expected to create about 4,300 new off-street parking spaces. Therefore, under the Draft Plan and with the Rezoning of Adjacent Parcels, there would be a shortfall of approximately 3,800 spaces parking spaces provided relative to the projected demand. 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 daytime non-residential parking demand (e.g., the 12th and Kissling 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 bicycling), while others would search out alternative parking within reasonable distance of their destination. For non-residential development, it is anticipated that the parking demand would be substantially accommodated within the permitted parking supply associated with development, and on-street at metered parking spaces.

In addition, the *SFpark* is a new approach to parking management. The *SFpark* program includes sensors to record parking availability, new meters to make it easier to pay, and a data feed to process and distribute information about where parking is available. Examples include the new trial sensors and new meters in a number of neighborhoods in San Francisco, including in SoMa (western boundary being Third Street between Market and Bryant Streets, and Fifth Street between Bryant and King Streets).

SFpark sensors, installed in parking spaces and in City-owned garages, track in real-time where parking is and is not available. Sensor data is uploaded wirelessly to the *SFpark* data feed, which then makes that information available to the public via *SFpark.org*, street signs, and smart phone applications. Real-time information about where parking is available helps drivers find parking with less hassle, and less circulating around the block looking for an open parking space. *SFpark* adjusts meter prices based on demand, to encourage drivers to make trips in off-peak hours and to use parking lots and garages. While high-demand spaces gradually go up in price, other spaces decrease in cost.

MTA's *SFpark* parking management may include some portions of the Project Area. 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* would support a shift in travel from auto to public transit or other modes.

Impacts of the 350 Eighth Street Project (Project-Level Analysis)

Operational Impacts

Impact TR-9: The proposed 350 Eighth Street project would not cause levels of service at local intersections to deteriorate to unacceptable levels and thus, would not conflict with an applicable congestion management program establishing measures of effectiveness for the performance of the circulation system. (Less than Significant with Mitigation)

During the weekday p.m. peak hour, the 350 Eighth Street project would generate 156 inbound and 102 outbound vehicle-trips (total of 258 vehicle-trips). The majority of the project-generated vehicle trips were assigned to and from the garage driveway on Harrison Street; a minimal number of vehicle trips were assigned to the private internal roadway. Table 4.E-1, p. 4.E-21, presents the 350 Eighth Street project intersection LOS for the weekday p.m. peak hour.

Overall, the proposed 350 Eighth Street project would result in minor changes to the average delay per vehicle at the study intersections. All but three of the study intersections would continue to operate at LOS D or better. The signalized intersections of Fifth/Bryant/I-80 Eastbound on-ramp and Sixth/Brannan/I-280 ramps would continue to operate at LOS E with the addition of project-generated trips. However, the contribution of the 350 Eighth Street project at the eastbound critical movement of Fifth/Bryant/I-80 Eastbound on-ramp would not exceed the significance threshold and would not be considered significant. Likewise, at the intersection of Sixth/Brannan/I-280 ramps, the 350 Eighth Street project contributions at the northbound critical movement would not exceed the significance threshold and would not be considered significant.

With the addition of project-generated trips, the intersection of Eighth/Harrison/I-80 Westbound off-ramp would deteriorate from LOS D to LOS E, which would be considered a significant impact. Implementation of Mitigation Measure M-TR-1c, Optimization of Signal Timing at the Eighth/Harrison/I-80 Westbound Off-Ramp Intersection, would improve traffic operations under existing plus 350 Eighth Street project conditions to LOS D, and would reduce the impact to a less-than-significant level.

Mitigation Measure: Implement Mitigation Measure TR-1c, Optimization of Signal Timing at the Eighth/Harrison/I-80 Westbound Off-Ramp Intersection, discussed on page 4.E-23.

Significance after Mitigation: Less than Significant.

Impact TR-10: The proposed 350 Eighth Street project would not cause exceedance of the capacity utilization standards for Muni lines or regional transit providers, and would not cause a substantial increase in delays or operating costs; thus, it would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. (Less than Significant)

The 350 Eighth Street project would generate about 255 new transit trips during the weekday p.m. peak hour. Because the project would primarily be residential in nature, more of the p.m. peak-hour transit

trips would be inbound (returning from work) to the site (i.e., 148 inbound and 107 outbound). About 207 of the 255 transit trips would be to and from San Francisco origins and destinations, and 48 trips would be to and from the East Bay, South Bay and North Bay.

Transit riders traveling to and from 350 Eighth Street project site would utilize the nearby Muni bus lines, including the 12 Folsom, 19 Polk, 27 Bryant, and 47 Van Ness lines, and may transfer to other Muni bus and light rail lines, or to regional transit providers. The addition of the project-generated riders to the four screenlines would not substantially increase the peak-hour capacity utilization. Capacity utilization of the screenlines would be below 85 percent capacity utilization, with the exception of the subway lines within the Southwest screenline, which would continue to operate at capacity utilization of 87 percent. The addition of the seven transit trips generated by the 350 Eighth Street project to the Southwest screenline subway corridor would not represent a significant contribution to the existing conditions.

Similarly, the regional service providers currently operate with ridership lower than their load factor standards during the weekday p.m. peak hour. Based on the origins and destinations of the transit trips generated by the 350 Eighth Street project, it was estimated that during the weekday p.m. peak hour, there would be 11 transit trips destined to the East Bay, three transit trips to the North Bay, and nine transit trips to the South Bay. The addition of project-related passengers would not have a substantial effect on the regional transit providers during the weekday p.m. peak hour, as the capacity utilization for all regional transit providers would remain below their capacity utilization standards.

Because the proposed 350 Eighth Street project would not cause exceedance of the capacity utilization standards for Muni lines or regional transit providers, and would not cause a substantial increase in delays or operating costs, this impact would be less than significant.

Mitigation: None required.

Impact TR-11: The proposed 350 Eighth Street project would not result in a loading demand that could not be accommodated within the proposed on-site and nearby on-street loading facilities. The proposed 350 Eighth Street project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. (Less than Significant)

The 350 Eighth Street project would provide two truck loading spaces (12 feet in width and 35 feet in length) and four van loading spaces (8 feet in width and 20 feet in length) within the private internal roadway. These spaces would be on-street (i.e., yellow curb within the private internal roadway) and because they would not be on public streets, they would be considered to be off-street spaces, but would not be enclosed. Access into the private internal roadway would be from Eighth Street via a 22-foot-wide driveway, which would have a vertical clearance of 15 feet-10 inches, and which would be located approximately mid-block between Ringold and Harrison Streets.

Under Section 152.1 of the Planning Code, two off-street truck loading spaces would be required for both the residential and arts uses, and the commercial uses, for a total of four truck loading spaces. Per Planning Code Section 153(a)(6), two van loading spaces could be substituted for one truck loading space.

The 350 Eighth Street project's provision for loading spaces would comply with the Planning Code requirements. Section 154 of the Planning Code, truck loading spaces need to be 12 feet wide and 35 feet in length (except one space could be 10 feet wide and 25 feet in length), and van loading spaces need to be 8 feet in width and 20 feet in length. The 350 Eighth Street project would therefore meet the Planning Code requirements for the number and dimensions of loading spaces. The 350 Eighth Street project sponsor would seek an exception to the enclosed space requirement of Planning Code Section 152.1 as part of its CU authorization.

The new residential, commercial, arts and community uses would generate about 20 truck freight and service vehicle trips per day, which would result in a demand of one loading space during the peak hour and average hour of loading activities. The 350 Eighth Street project's proposed loading space supply would adequately accommodate the loading demand.

Residential move-in and move-out activities using larger trucks would need to occur from the curb on Harrison or Eighth Streets at the proposed commercial vehicle loading/unloading zone and carted to the residential elevators. Trash and recycling rooms would be provided within the parking garage, with access from Harrison Street. Residential units fronting Ringold Street would cart their trash and recycling containers to the curb.

For the commercial uses, each tenant would be required to provide adequate trash storage within the leased space, and trash collection would be arranged independently by each commercial tenant. Trash would be carted to the curb (i.e., Harrison or Eighth Streets) by tenants of the commercial spaces, or to the building trash storage areas within the parking garages. Building management would coordinate with the appropriate disposal and recycling company regarding the specific locations of garbage containers.

Because the 350 Eighth Street project would provide off-street loading spaces consistent with the requirement of the Planning Code, and because the loading demand could be accommodated by the proposed 350 Eighth Street project's supply of loading spaces, loading impacts would be less than significant.

Although the 350 Eighth Street project would have a less-than-significant impact on loading facilities, the transportation analysis recommended measures that could be included with the 350 Eighth Street project to minimize the potential for double parking of delivery vehicles, to assist in curbside passenger loading/unloading activity, and to assist in residential move-in and move-out activities. These measures, discussed below under **Improvement Measure I-TR-11a**, Curb Modifications on Eighth and Harrison Streets, and **Improvement Measure 1-TR-11b**, Coordination of Move-In and Move-Out Activities, would include designation of 40 feet of curb space on both Eighth Street and Harrison Street as yellow commercial vehicle loading/unloading zones and would include coordination of move-in and move-out activities, as well as larger deliveries, to be scheduled and coordinated through building management.

Improvement Measure I-TR-11a: Curb Modifications on Eighth and Harrison Streets. To minimize the potential for double parking of delivery vehicles, MTA should designate 40 feet of curb space on both Eighth Street and Harrison Street as yellow commercial vehicle loading/unloading zones to serve the ground floor commercial uses as well as the residential uses (e.g., Federal Express, UPS, and move-in and move-out operations). The 350 Eighth Street project

sponsor should be required to request the curb change, and any modifications to curb regulations would need to be approved at a public hearing through the MTA.

Improvement Measure I-TR-11b: Coordination of Move-In and Move-Out Activities. To ensure that residential move-in and move-out activities do not impede Muni operations on Harrison Street or bicycle travel on Eighth Street, move-in and move-out operations, as well as larger deliveries should be scheduled and coordinated through building management. Curb parking should be reserved through the local station of the San Francisco Police Department.

Mitigation: None required.

Impact TR-12: The proposed 350 Eighth Street project would not conflict with adopted policies, plans, or programs regarding bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities; nor would the 350 Eighth Street project substantially increase hazards due to a design feature or incompatible use. (Less than Significant)

Pedestrian trips generated by the 350 Eighth Street project would include walk trips to and from the residential and commercial uses, plus walk trips to and from the local and regional transit operators. Overall, the 350 Eighth Street project would add about 752 pedestrian trips to the surrounding streets (i.e., 255 transit trips and 497 walk/other trips) during the weekday p.m. peak hour.

These new pedestrian trips generated by the 350 Eighth Street project could be accommodated on the existing sidewalks and crosswalks adjacent to the 350 Eighth Street project site and would not substantially affect the current pedestrian conditions. In addition, the elimination of the driveways along the 350 Eighth Street project frontage on Eighth and Harrison Streets would improve pedestrian conditions. Gordon Street currently terminates about 75 feet south of Ringold Street, and the 350 Eighth Street project would include a sidewalk on the western project site boundary to allow for pedestrian access between Ringold and Gordon Streets. Overall, the 350 Eighth Street project would enhance the pedestrian environment, and impacts on pedestrians would be less than significant.

Based on 444 residential units and 33,644 square feet of commercial uses, the 350 Eighth Street project would be required to provide 124 bicycle parking spaces for the residential uses, and six spaces for the commercial uses (because more than 20 commercial vehicle parking spaces would be provided, the project would be subject to Section 155(j) of the Planning Code). Because the primary use of 350 Eighth Street project would be residential, shower and locker facilities would not need to be provided. The 350 Eighth Street project would meet the Planning Code requirement by providing 130 bicycle parking spaces for the residential and commercial uses within three bicycle storage rooms in the parking garages, as well as six bicycle parking spaces in three bicycle racks within the project site near Harrison Street.

With the current bicycle and traffic volumes on adjacent streets, bicycle travel generally occurs without major impedances or safety problems, although the proximity of heavy volumes of fast-moving traffic can make the Project Area uncomfortable for some cyclists. Although the proposed 350 Eighth Street project would result in an increase the number of vehicles on the surrounding streets, this increase would

not be substantial enough to affect bicycle travel in the area. Because the proposed 350 Eighth Street project would not conflict with adopted policies, plans, or programs regarding bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities, impacts on bicyclists would be less than significant.

Although the 350 Eighth Street project impacts to bicyclists would be less than significant, the transportation analysis recommended measures that could be included with the 350 Eighth Street project to minimize the potential for conflicts between bicycles and vehicles traveling on Eighth Street and vehicles exiting the 350 Eighth Street project driveway. This measure, discussed in **Improvement Measure I-TR-12, On-Street Parking Removal at Driveway**, would remove two or more on-street parking spaces on the west curb of Eighth Street north of the project driveway to improve the sight distance for vehicles exiting the project driveway and bicycles and vehicles traveling on Eighth Street.¹⁸

Improvement Measure I-TR-12: On-Street Parking Removal at Driveway. As an improvement measure to reduce the potential for conflicts between southbound bicyclists and vehicles traveling on Eighth Street and vehicles exiting the 350 Eighth Street Project driveway, on-street parking north of the project driveway could be removed. The removal of two or more on-street parking spaces on the west curb of Eighth Street north of the project driveway would improve the sight distance for vehicles exiting the project driveway and bicyclists and vehicles traveling on Eighth Street.

Mitigation: None required.

Impact TR-13: The proposed 350 Eighth Street project would not result in inadequate emergency access. (Less than Significant)

Because the 350 Eighth Street project entails the construction of new buildings, it would not change adjacent travel lanes, and emergency vehicle access to the project site would remain unchanged from existing conditions. Emergency service providers would continue to be able to pull up to the 350 Eighth Street project site from Eighth Street or Harrison Street.

The dimensions and design of the private internal roadways, the location of the proposed buildings, and the distances between the buildings was determined based on emergency access requirements specified at meetings between the 350 Eighth Street project architect and the San Francisco Fire Department. Overall, the 350 Eighth Street project impacts on emergency access would be less than significant.

Mitigation: None required.

¹⁸ Sight distance is the distance that a driver or bicyclist can see ahead in order to observe and successfully react to a hazard, obstruction, decision point, or maneuver.

Construction Impacts

Impact TR-14: Construction of the proposed 350 Eighth Street project would not result in disruption of nearby streets, transit service, loading, or pedestrian and bicycle circulation; therefore, the 350 Eighth Street project would not conflict with any applicable plan, ordinance or policy related to these performance measures. (Less than Significant)

Detailed plans for construction of the 350 Eighth Street project have not been developed, as a construction contractor has not yet been retained. However, it is anticipated that construction activities would take about 36 months to complete. Construction would generally be conducted in six primary construction phases, which would partially overlap.

Construction-related activities would typically occur during City-designated construction hours and generally Monday through Friday, between 7:00 a.m. and 8:00 p.m., with limited construction activities on weekends (on an as-needed basis). The hours of construction would be stipulated by the Department of Building Inspection, and the contractor would need to comply with the San Francisco Noise Ordinance and the MTA *Blue Book*.

It is not anticipated that any travel lane closures would be required. Any temporary sidewalk or traffic lane closures would be coordinated with the City in order to minimize the impacts on traffic. In general, lane and sidewalk closures are subject to review and approval by the City's Interdepartmental Traffic Advisory Staff Committee, which includes representatives from the City's Fire and Police Departments, MTA Sustainable Street Division, MTA Traffic Engineering Division, MTA Muni Operations, and Department of Public Works.

It is also not anticipated that any bus stop relocations would be required, as there are no bus stops adjacent to the 350 Eighth Street project site. However, if it is determined that temporary bus stop relocation would be needed during construction of buildings and/or reconstruction of the sidewalk, the relocation would be coordinated with the Muni Street Operations and Special Events office. In addition, prior to construction, the 350 Eighth Street project contractor would coordinate with Muni's Street Operations and Special Events Office to coordinate construction activities and reduce any impacts to transit operations.

Throughout the construction period, there would be a flow of construction-related trucks into and out of the 350 Eighth Street project site. The impact of construction truck traffic would be a temporary lessening of the capacities of local streets due to the slower movement and larger turning radii of trucks, which may affect traffic operations. During construction it is anticipated that there would be an average of up to 50 truck trips per day traveling to the 350 Eighth Street project site, with the greatest number generally occurring during the excavation and shoring phase. It is anticipated that construction-related trucks would access the 350 Eighth Street project site via I-80 from the East Bay, U.S. 101 from the South Bay, and Seventh, Eighth, Harrison, and Folsom Streets from within San Francisco.

The number of construction workers per day at the 350 Eighth Street project site is not currently available. However, it is anticipated that the addition of the worker-related vehicle- or transit-trips would not substantially affect transportation conditions, as any impacts on local intersections or the transit network

would be similar to, or less than, those associated with the proposed land uses. Construction workers who drive to the 350 Eighth Street project site would cause a temporary parking demand. Construction workers would likely park within unrestricted nearby on-street parking spaces, within nearby off-street facilities, or on-site as the project parking garages are completed. As a result, the 350 Eighth Street project's construction-related transportation impacts would be less than significant.

Although the construction activities associated with the 350 Eighth Street project would not result in disruption of nearby streets, transit service, loading, or pedestrian and bicycle circulation, the transportation analysis recommended the following measure, **Improvement Measure I-TR-14, Construction Traffic Control Strategies**, that could be included with the project to minimize potential implications to the surrounding circulation system during construction activities.

Improvement Measure I-TR-14: Construction Traffic Control Strategies. Any construction traffic occurring between 7:00 a.m. and 9:00 a.m. or between 3:30 p.m. and 6:00 p.m. would coincide with peak-hour traffic and could temporarily impede traffic and transit flow, although it would not be considered a significant impact. Limiting truck movements to the hours between 9:00 a.m. and 3:30 p.m. (or other times, if approved by the MTA) would minimize disruption of the general traffic flow on adjacent streets during the a.m. and p.m. peak periods.

The 350 Eighth Street project sponsor and construction contractor(s) should meet with the Traffic Engineering Division of MTA, the Fire Department, Muni, the San Francisco Planning Department and other City agencies to determine feasible measures to reduce traffic congestion, including temporary bus stop relocation and other potential transit disruption and pedestrian circulation effects during construction of the project. The temporary parking demand by construction workers would need to be met on-site (once the garage element of the structure is complete), on-street or within other off-street parking facilities. Construction workers should be encouraged to take transit or carpool to the 350 Eighth Street project site.

Mitigation: None required.

Parking Analysis

Parking Supply

The 350 Eighth Street project would provide a total of 436 parking spaces, including 337 spaces for the residential uses, 95 spaces for the commercial uses, and four spaces for the arts uses. In addition, five carshare spaces would be provided within a below-grade parking garage, which would have access to and from Harrison Street. Of the 436 parking spaces for the 350 Eighth Street project, 414 spaces would be within the parking garage and 22 spaces would be at-grade (nine within individual unit garages and 13 on the private internal roadway). The private internal roadway would have a two-way driveway on Eighth Street, and an exit-only driveway onto Harrison Street. The 350 Eighth Street project would provide 17 handicapped-accessible parking spaces (16 spaces within the garage and one space on the private internal roadway); two of the handicapped-accessible spaces would be van-accessible spaces.

Adjacent to the 350 Eighth Street project site on Harrison Street (but not on the 350 Eighth Street project site), currently there are about 240 feet of driveways, and on-street parking is permitted to the east and west of the driveways. The 350 Eighth Street project would eliminate the driveways, with the exception of a 24-foot-wide driveway into the project garage and a 12-foot-wide driveway from the private internal roadway (exit only). With the 350 Eighth Street project, about eight additional parking spaces would be provided on Harrison Street. The existing parking spaces adjacent to the 350 Eighth Street project site on Harrison Street are unmetered, restricted to two-hour duration.

Adjacent to the project site on Eighth Street (but not on the 350 Eighth Street project site), currently there are about 150 feet of driveways, and on-street parking is permitted to the north of the driveways. The 350 Eighth Street project would eliminate the driveways, with the exception of a 22-foot-wide driveway providing access to the private internal roadway. With the 350 Eighth Street project, about five additional parking spaces would be provided on Eighth Street. The existing parking spaces adjacent to the project site on Eighth Street are unmetered, restricted to 2-hour duration. As described in **Improvement Measure I-TR-12, On-Street Parking Removal at Driveway** (see page 4.E-38), the MTA could remove two or more on-street parking spaces north of the 350 Eighth Street project driveway to improve sight distance for vehicles exiting the project driveway and for vehicles and bicyclists traveling on Eighth Street. This would reduce the net-increase in parking spaces from five to no more than three spaces.

On-street parking is not permitted adjacent to the 350 Eighth Street project site on Ringold Street (on-street parking is permitted on the north side of the street). Adjacent to the 350 Eighth Street project site on Gordon Street, there currently are 14 unrestricted parking spaces. The 350 Eighth Street project would not affect the on-street parking spaces on Gordon Street.

Planning Code Requirements

The proposed Planning Code requirements for Western SoMa (WMUG District, subject to Section 151.1) would permit the 350 Eighth Street project to provide up to 379 parking spaces for the residential uses, 95 spaces for the commercial uses, and four spaces for the arts uses, for a total of 478 parking spaces. Per Section 155(i) of the Planning Code, the 350 Eighth Street project would be required to provide 17 handicapped-accessible parking spaces. Per Section 166 of the Planning Code, five carshare parking spaces would be required. The 350 Eighth Street project would meet each of these requirements (see discussion under Parking Supply, above).

Under the proposed Planning Code requirements for the Western SoMa WMUG District, the 350 Eighth Street project would be subject to approval by the MTA and CU and/or Section 329 review, including review for requesting parking in excess of what is principally permitted (but which does not exceed the maximum amount stated in Planning Code Table 151.1, as specified in Planning Code Section 151.1 (g)).

Parking Demand

The new uses associated with the 350 Eighth Street project would generate a long-term residential parking demand for up to about 561 spaces, and commercial and arts uses short-term and long-term demand for 100 spaces, for a total of 661 spaces. The residential demand of 561 spaces (during overnight hours) would not be accommodated within the proposed residential supply of 337 spaces, resulting in a

shortfall of 224 spaces. However, residents would be able to find parking spaces on nearby streets or in off-street facilities, as existing on-street and off-street parking occupancy within the vicinity of the 350 Eighth Street project site during the evening is lower than during the day. In addition, during the overnight hours, all or a portion of the spaces allocated to the commercial and arts uses could accommodate a portion of the residential parking shortfall.

During the weekday midday, the residential parking demand is estimated to be about 80 percent of the overnight (peak) parking demand, or about 449 spaces. Because the 350 Eighth Street project would provide a total of 436 parking spaces for all uses (337 spaces for residential, 95 spaces for commercial, and four spaces for the arts), the midday shortfall would be between 113 and 225 spaces. The parking shortfall would need to be accommodated on-street for short-term demand, or in off-street facilities for long-term demand, and as a result, the midday parking occupancy in the vicinity of the 350 Eighth Street project site would increase. The midday and overnight shortfall could be accommodated within the 875-space 12th and Kissling Garage, which is located about 0.45 miles from the 350 Eighth Street project site, operates 24 hours a day, and has available capacity (midday occupancy is about 50 percent). As an improvement measure to reduce the 350 Eighth Street project's parking demand and parking shortfall and to encourage use of alternative modes, the 350 Eighth Street project sponsor could provide a transportation insert for the move-in packet that would provide information on transit service (Muni and BART lines, schedules and fares), information on where Clipper cards could be purchased, and information on the 511 *Regional Rideshare Program*.

Cumulative Impacts

Impact C-TR-1a: The Draft Plan, in combination with past, present, and reasonably foreseeable future projects would cause levels of service at local intersections to deteriorate and would conflict with an applicable congestion management programs as well as plans, ordinances or policies establishing measures of effectiveness for the performance of the circulation system. (Significant and Unavoidable with Mitigation)

Under 2030 Cumulative conditions, vehicle delays would increase at the study intersections over Existing conditions, but in general, due to the extensive one-way roadway network and multiple travel lanes throughout much of Draft Plan Area, the additional traffic generated by projected development within the Draft Plan Area and by background traffic growth could be accommodated without substantial deterioration in LOS. In addition, the 2030 Cumulative analysis includes the planned restriping of Eighth Street between Market Street and Heron Street (Heron Street is located between Folsom and Harrison Streets), which would convert this segment of Eighth Street from four to three travel lanes, and would add a striping buffer to the existing bicycle lane.

Under cumulative conditions, LOS operating conditions would remain at LOS D or better, except at the following three study intersections located at the junction with U.S. 101/I-80 and I-280 on-ramps and off-ramps, which would operate at LOS F:

- Fifth/Bryant/I-80 Eastbound on-ramp (a.m. and p.m. peak hour);

- Sixth/Brannan/I-280 ramps (a.m. and p.m. peak hour); and
- Eighth/Harrison/I-80 Westbound off-ramp (p.m. peak hour).

At the three study intersections that would operate at LOS F under cumulative conditions during the weekday p.m. peak hour, the Draft Plan's contribution would be cumulatively considerable because the Draft Plan would contribute more than 5 percent of the volume at one or more critical turning movements, and therefore would make a considerable contribution to a cumulative significant impact. As discussed under Impact TR-1a, travel lane capacity at these intersections has been maximized, and providing additional travel lanes to mitigate impacts would not be feasible. Similarly, signal timing adjustments may improve intersection operations, but would be infeasible due to traffic, transit and pedestrian signal timing requirements. Therefore, the Draft Plan's contribution to significant traffic impacts at these intersections under would be cumulatively considerable and, therefore, this impacts is significant and unavoidable.

As discussed above, travel lane capacity at this intersection has been maximized, and providing additional travel lanes to mitigate impacts would not be feasible. Similarly, signal timing adjustments may improve intersection operations, but would be infeasible due to traffic, transit and pedestrian signal timing requirements. Therefore, the Draft Plan's contribution to the significant impact related to levels of serve at local intersections would be cumulatively considerable and this impacts would be significant and unavoidable.

Mitigation Measure: Implement **Mitigation Measure M-TR-1c**, Optimization of Signal Timing at the Eighth/Harrison/I-80 Westbound Off-Ramp Intersection, as discussed on page 4.E-23. No additional mitigation measures are feasible.

Significance after Mitigation: Significant and Unavoidable.

Impact C-TR-1b: The Rezoning of Adjacent Parcels and/or 350 Eighth Street project, in combination with past, present, and reasonably foreseeable future projects would not cause levels of service at local intersections to deteriorate and would not conflict with an applicable congestion management programs as well as plans, ordinances or policies establishing measures of effectiveness for the performance of the circulation system. (Less than Significant)

As described in Impact C-TR-1a, under 2030 Cumulative conditions, vehicle delays would increase at the study intersections over existing conditions, and LOS operating conditions would remain at LOS D or better, except at the following three study intersections located at the junction with U.S. 101/I-80 and I-280 on-ramps and off-ramps:

- Fifth/Bryant/I-80 Eastbound on-ramp (a.m. and p.m. peak hour);
- Eighth/Harrison/I-80 Westbound off-ramp (p.m. peak hour); and
- Sixth/Brannan/I-280 ramps (a.m. and p.m. peak hour).

At the three study intersections that would operate at LOS F under cumulative conditions during the weekday p.m. peak hour, the impacts associated with Rezoning of Adjacent Parcels would not be cumulatively considerable because, as discussed under Impact TR-1b, Rezoning of the Adjacent Parcels would either not add any vehicles to the intersection, or would not add any trips to the critical movements that would operate at LOS E or LOS F conditions during the a.m. or p.m. peak hours. Therefore, Rezoning of Adjacent Parcel's contribution to the significant impact related to levels of serve at local intersections would not be cumulatively considerable and this impacts would be less than significant.

As noted in Impact TR-9, the 350 Eighth Street project would result in project-specific impacts at the intersection of Eighth/Harrison/I-80 Westbound off-ramp under Existing plus 350 Eighth Street project conditions. However, with implementation of Mitigation Measure M-TR-1c, Optimization of Signal Timing at the Eighth/Harrison/I-80 Westbound Off-Ramp Intersection (see page 4.E-23), this impact would be less than significant with mitigation. Under 2030 Cumulative conditions, the 350 Eighth Street project would contribute less than 5 percent to cumulative volumes at any of the critical turning movements. Therefore, the 350 Eighth Street project would not contribute considerably to any cumulative impacts.

Mitigation: None required.

Impact C-TR-2: The Draft Plan, in combination with past, present, and reasonably foreseeable future projects, would contribute considerably to exceedance of the capacity utilization standards for Muni under cumulative conditions. (Significant and Unavoidable with Mitigation)

Under cumulative weekday p.m. peak-hour conditions, the future year ridership would exceed Muni's capacity utilization standard of 85 percent at the following corridors:

- Northwest Screenline – Geary, California, Sutter/Clement, Chestnut/Union
- Southeast Screenline – Third, Other
- Southwest Screenline – Subway corridor

In addition, under cumulative conditions, transit ridership on regional transit lines is projected to exceed the available capacity at several corridors, and capacity utilization standards would not be met for BART to the East Bay, and for AC Transit and Golden Gate Transit bus lines.

The contributions of the Draft Plan to the Muni corridors operating at greater than 85 percent capacity utilization would be less than 5.0 percent, with the exception of the contribution to the "Other" lines within the southeast screenline. The Draft Plan's contributions to the cumulative capacity utilization exceedances for Muni operations on the "Other" lines within the southeast screenline would therefore be considered significant. Implementation of **Mitigation Measure M-C-TR-2, Impose Development Impact Fees to Offset Transit Impacts**, would improve transit capacity levels on affected Muni transit lines but may not reduce the impact of the Draft Plan to a less-than-significant level. The contributions of the Draft Plan to the regional operators that would exceed 100 percent capacity utilization under cumulative

conditions would be less than 2.0 percent; the Draft Plan's contributions to the cumulative capacity utilization exceedances for the regional transit operators would therefore be less than significant.

Mitigation Measure

M-C-TR-2: Impose Development Impact Fees to Offset Transit Impacts. Additional transit capacity would be required in order to reduce the corridor impacts identified above for the Draft Plan, and reduce capacity utilization to levels below the 85 percent capacity utilization threshold. In order to increase capacity, however, additional funding would have to be identified, either from public or private sources, or a combination, thereof, potentially including project sponsors of individual development projects within the Draft Plan Area. Sponsors of development projects within the Draft Plan Area could be subject to a fair share fee that would pay for augmenting transit capacity. These funds would be used to purchase and operate additional transit vehicles, or if necessary, to reduce the corridor impacts, execute large-scale upgrades to transit network capacity.

Adoption of the *Western SoMa Community Plan* is anticipated to be accompanied by development impact fees, such as those adopted for the Eastern Neighborhoods Area Plan and Market/Octavia Area Plan. Funds are expected to be generated from a delineated portion of the impact fees that would be generated with implementation of the Draft Plan. However, it is not known whether or how much additional funding would be generated for transit service improvements, and no other definite funding sources have been identified. As a result, the Draft Plan's contribution to the 2030 Cumulative capacity utilization exceedances for Muni operations would remain **significant and unavoidable**.

Significance after Mitigation: Significant and Unavoidable.

Impact C-TR-3: The Rezoning of Adjacent Parcels, in combination with past, present, and reasonably foreseeable future projects, would not cause exceedance of the capacity utilization standards for Muni lines or regional transit providers. (Less than Significant)

The contributions of the Rezoning of Adjacent Parcels to the Muni corridors operating at greater than 85 percent capacity utilization under cumulative conditions (described above in C-TR-2) would be less than 1.0 percent, and the contribution to the cumulative capacity utilization exceedances for Muni operations would be considered less than significant. Furthermore, the Rezoning of Adjacent Parcels' contribution to the regional operators that would exceed 100 percent capacity utilization under cumulative conditions would be less than 1.0 percent; therefore, the Rezoning of Adjacent Parcels' contribution to the cumulative capacity utilization exceedances for the regional transit operators would be less than significant.

Mitigation: None required.

Impact C-TR-4: The 350 Eighth Street project, in combination with past, present, and reasonably foreseeable future projects, would not cause exceedance of the capacity utilization standards for Muni lines or regional transit providers. (Less than Significant)

The contributions of the 350 Eighth Street project to the Muni corridors operating at greater than 85 percent capacity utilization under cumulative conditions would be less than 1.0 percent, and the project's contribution to the cumulative capacity utilization exceedances for Muni operations would be considered less than significant. In addition, 350 Eighth Street project contributions to the regional operators that would exceed 100 percent capacity utilization under cumulative conditions would be less than 1.0 percent, and the project's contribution to the cumulative capacity utilization exceedances for the regional transit operators would be less than significant.

Mitigation: None required.

4.F. Noise and Vibration

This section describes the existing acoustical setting in the Project Area, including the *Western SoMa Community Plan* Area, Adjacent Parcels, and 350 Eighth Street project site, and identifies potential noise-sensitive receptors. It also evaluates the noise effects of transportation and land use changes on these receptors.

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 that it travels, and the pressure level or energy content of a given sound. The sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound, and the decibel (dB) scale is used to quantify sound intensity. Because sound can vary in intensity by over one million times within the range of human hearing, a logarithmic loudness scale is used to keep sound intensity numbers at a convenient and manageable level. Since the human ear is not equally sensitive to all sound frequencies within the entire spectrum, human response is factored into sound descriptions in a process called “A-weighting,” expressed as “dBA.” The dBA, or A-weighted decibel, refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies. On this scale, the normal range of human hearing extends from about 0 dBA to about 140 dBA. A 10-dBA increase in the level of a continuous noise represents a perceived doubling of loudness. The noise levels presented herein are expressed in terms of dBA, unless otherwise indicated. **Table 4.F-1**, page 4.F-2, shows some representative noise sources and their corresponding noise levels in dBA.¹

Planning for acceptable noise exposure must take into account the types of activities and corresponding noise sensitivity in a specified location for a generalized land use type. Some general guidelines² are as follows: sleep disturbance can occur at levels above 35 dBA, interference with human speech begins at about 60 dBA, and hearing damage can result from prolonged exposure to noise levels in excess of 85 to 90 dBA.

¹ U.S. Department of Housing and Urban Development, *The Noise Guidebook*, 1985. Available on the internet at: <http://www.hud.gov/offices/cpd/environment/training/guidebooks/noise/chapter1.pdf>.

² U.S. Environmental Protection Agency, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. March, 1974. Available on the internet at: <http://nonoise.org/library/levels74/levels74.htm>.

**TABLE 4.F-1
TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT**

Examples of Common, Easily Recognized Sounds	Decibels (dBA) At 50 Feet	Subjective Evaluations
Near Jet Engine	140	Deafening
Threshold of Pain (Discomfort)	130	
Threshold of Feeling – Hard Rock Band	120	
Accelerating Motorcycle (at a few feet away)	110	
Loud Horn (at 10 feet away)	100	Very Loud
Noisy Urban Street	90	
Noisy Factory	85 ^a	
School Cafeteria with Untreated Surfaces	80	Loud
Near Freeway Auto Traffic	60 ^b	Moderate
Average Office	50 ^b	
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	

^a Continuous exposure above 85 dBA is likely to degrade the hearing of most people.

^b Range of speech is 50 to 70 dBA.

SOURCE: U.S. Department of Housing and Urban Development, *The Noise Guidebook*, 1985.

Leq, CNEL, Ldn

Time variations in noise exposure are typically expressed in terms of a steady-state energy level (called Leq) that represents the acoustical energy of a given measurement. Leq (24) is the steady-state energy level measured over a 24-hour period. Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law requires that, for planning purposes, an artificial dBA increment be added to “quiet time” noise levels to form a 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL). CNEL adds a 5-dBA “penalty” during the evening hours (7:00 p.m. to 10:00 p.m.) and a 10-dBA penalty during the night hours (10:00 p.m. to 7:00 a.m.). Another 24-hour noise descriptor, called the day-night noise level (Ldn), is similar to CNEL, except that Ldn adds only the 10-dBA nighttime penalty, not the evening penalty. In practice, Ldn and CNEL usually differ by less than 1 dBA at any given location for transportation noise sources.

Health Effects of Environmental Noise

The World Health Organization (WHO) is perhaps the best source of current knowledge regarding health impacts due to the fact that the 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.³ According to WHO, sleep disturbance can occur when continuous indoor noise levels exceed 30 dBA or when intermittent interior noise levels reach 45 dBA, particularly if background noise is low. With a bedroom window slightly open (a reduction from outside to inside of 15 dB), the WHO criteria would suggest exterior continuous (ambient) nighttime noise levels should be 45 dBA or below, and short-term events should not generate noise in excess of 60 dBA. WHO also notes that maintaining noise levels within the recommended levels during the first part of the night is believed to be effective for the ability to fall asleep.⁴

Other potential health effects of noise identified by 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, exposure several times a year to concert noise at 100 dBA). 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. 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.⁵

Fundamentals of Vibration

As described in the Federal Transit Administration's *Transit Noise and Vibration Impact Assessment*,⁶ groundborne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility; groundborne vibration can cause buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, groundborne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even close to major roads. Some common sources of groundborne vibration are trains, buses on rough roads, and construction activities such as blasting, pile driving, and operating heavy earthmoving equipment.

Several different methods are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal in inches per second. The PPV is most frequently used to describe vibration impacts on buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (Vdb) is commonly used to measure

³ The *San Francisco General Plan Land Use Compatibility Guidelines* for Community Noise, presented below in Figure 30, were created during the same era.

⁴ World Health Organization, *Guidelines for Community Noise*. Geneva, 1999. Available on the internet at: <http://www.who.int/docstore/peh/noise/guidelines2.html>.

⁵ World Health Organization, *Guidelines for Community Noise*. Geneva, 1999. Available on the internet at: <http://www.who.int/docstore/peh/noise/Comnoise-4.pdf>.

⁶ Federal Transit Administration (FTA), *Transit Noise and Vibration Impact Assessment*, 2006.

RMS. The decibel notation acts to compress the range of numbers required to describe vibration. Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration-sensitive equipment.

Groundborne vibration can cause movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Buildings are rarely damaged during construction projects, although blasting and pile driving have on occasion caused building damage. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by only a small margin.

Existing Noise Environment

Western SoMa Community Plan Area and Adjacent Parcels

Long-term environmental noise is primarily dependent on vehicle traffic volumes as well as the mix of vehicle types. The existing ambient noise environment within the overall Project Area, typical of most urban areas, is dominated by vehicular traffic on the U.S. 101, I-80, and I-280 freeways as well as traffic on local roadways (autos, trucks, and buses). ESA conducted sample noise measurements in August 2010, which are shown in **Table 4.F-2**, p. 4.F-5. A map of the noise measurement locations is shown in **Figure 4.F-1**, p. 4.F-7.

The San Francisco Department of Public Health (DPH) has mapped transportation noise throughout the City and County of San Francisco, based on modeled baseline traffic volumes derived from the San Francisco County Transportation Authority travel demand model. DPH maps indicate the areas subject to noise levels over 60 Ldn (see **Figure 4.F-2**, p. 4.F-8) and the range of Ldn noise levels that occur on every street within the city (**Figure 4.F-3**, p. 4.F-9). As indicated in these figures, the modeled traffic-generated noise levels along all major streets in the Project Area currently exceed 60 dBA (Ldn). In fact, traffic noise on nearly all of the major streets exceeds 70 dBA (Ldn). Traffic noise levels also exceed 60 dBA (Ldn) on several of the smaller mid-block streets, including portions of some of the existing residential alleys.⁷ In general, however, traffic noise is considerably less on the mid-block streets than on the major streets.

The Project Area also has abundant existing commercial and light industrial uses (sometimes referred to as production, distribution, and repair, or PDR), which often require delivery and processing during late night and early morning hours, a time when the residential population is most sensitive to the effects of noise. These activities contribute to long-term noise, but perhaps more importantly to short-term peak noise levels. Delivery of food and other perishables generates noise from refrigerated trucks, backup beepers, lift gates, and forklifts; these sources are all part of the ambient noise environment. In addition, building mechanical equipment can generate noise that can be annoying.

⁷ Note that the noise levels presented in Figures 4.F-2 and 4.F-3 are 24-hour noise levels, in which nighttime noise is given additional weight. These noise levels are not directly comparable to the noise levels discussed under "Health Effects of Environmental Noise," as those noise levels are for specified periods of less than 24 hours.

**TABLE 4.F-2
EXISTING NOISE ENVIRONMENT AT PROJECT SITE VICINITY^a**

Noise Measurement Location	Time Period	Leq (decibels)	Noise Sources
LT ^b -1: 40 feet from center of Harrison Street at Gordon Street	24-hour Ldn measurements were: Wednesday 8/11/10: N/A ^c	Hourly Average Leq Range: Aug. 11: 60 - 70	Unattended noise measurements do not specifically identify noise sources.
LT ^b -2: 30 feet from center of Folsom Street at Rausch Street	24-hour Ldn measurements were: Thursday 8/12/10: 81 dBA	Hourly Average Leq Range: Aug. 11: 62 - 79 Aug. 12: 65 - 79	Unattended noise measurements do not specifically identify noise sources.
LT ^b -3: 15 feet from center of Kissling Street between 11 th and 12 th Streets	24-hour Ldn measurements were: Thursday 8/12/10 :70 dBA	Hourly Average Leq Range: Aug. 11: 52 - 66 Aug. 12: 50 - 67	Unattended noise measurements do not specifically identify noise sources.
LT-4 ^e : Harrison and Eighth Streets	24-hour Ldn measurements were: Tuesday 5/24/11 through Thursday 5/26/11: 76 dBA (for all three days)	10-Second Average Leq Range: 5/24/11 – 5/26/11: 53 – 99	Mostly transportation noise: Motorcycles, trucks, and vehicles.
LT-5 ^e : Ringold Street near Eighth Street	24-hour Ldn measurements were: Tuesday 5/24/11 through Thursday 5/26/11: 70 – 72 dBA ^f	10-Second Average Leq Range: 5/24/11 – 5/26/11: 43 – 93	Mostly transportation noise: Motorcycles, trucks, and vehicles.
ST ^d -1: 40 feet from center of Harrison Street at Gordon Street	Wednesday 8/11/10 9:41 – 9:51 AM	5-Minute Average Noise Levels, Leq: 69, 68	Noise from traffic on Harrison. Tow truck, 80 dBA Bus, 79 dBA
ST ^d -2: 30 feet from center of Folsom Street at Rausch Street	Wednesday 8/11/10 9:59 – 10:09 AM	5-Minute Average Noise Levels, Leq: 72, 71	Noise from traffic on Folsom. Tow truck, 80 dBA Bus, 79 dBA
ST ^d -3: 15 feet from center of Kissling Street between 11 th and 12 th Streets	Wednesday 8/11/10 10:27 – 10:37 AM	5-Minute Average Noise Levels, Leq: 63, 64	Noise from traffic on Kissling, car service businesses. Car, 74 and 71 dBA
ST ^d -4: 35 feet from the center of Eighth Street and Natoma Street	Wednesday 8/11/10 11:00 – 11:10 AM	5-Minute Average Noise Levels, Leq: 67, 67	Noise from traffic on Eighth Street, people, dogs, children. Truck, 75 dBA Car, 70 dBA
ST ^d -5: Sidewalk on Juniper Street	Wednesday 8/11/10 11:31 – 11:41 AM	5-Minute Average Noise Levels, Leq: 66, 62	Noise from auto repair/paint businesses, alley traffic. Backup beeping, 76 dBA Air compressor, 60 dBA
ST ^d -6: Gilbert Street between Bryant and Brannan Streets	Wednesday 8/11/10 11:58 AM – 12:08 PM	5-Minute Average Noise Levels, Leq: 57, 61	Noise from traffic/light industrial area. Car, 71 dBA Car beeping, 65 dBA
ST ^d -7: Corner of Fifth and Folsom Streets	Wednesday 8/11/10 12:18 – 12:28 PM	5-Minute Average Noise Levels, Leq: 72, 71	Busy foot traffic and auto traffic. Bus, 82 dBA CAT loader on street, 84 dBA

TABLE 4.F-2 (Continued)
EXISTING NOISE ENVIRONMENT AT PROJECT SITE VICINITY^a

Noise Measurement Location	Time Period	Leq (decibels)	Noise Sources
ST ^d -8: 20 feet from center of Lafayette and Natoma Streets	Wednesday 8/11/10 1:02 – 1:12 PM	5-Minute Average Noise Levels, Leq: 64, 57	Mostly residential. Noise from traffic/people. Car with loud exhaust, 84 dBA Car honk, 68 dBA

^a All noise levels measured in decibels (dBA). Noise measurement data presented here using a Metrosonics dB-308 sound level meter, calibrated prior to use.

^b Long-term noise measurements are unattended and measure noise levels continuously for 48 hours.

^c Meter did not record a full 24 hours.

^d Short-term noise measurements are two 5-minute measurements conducted continuously.

^e Measurements performed by Charles M. Salter and Associates, May 24 – 26, 2011.

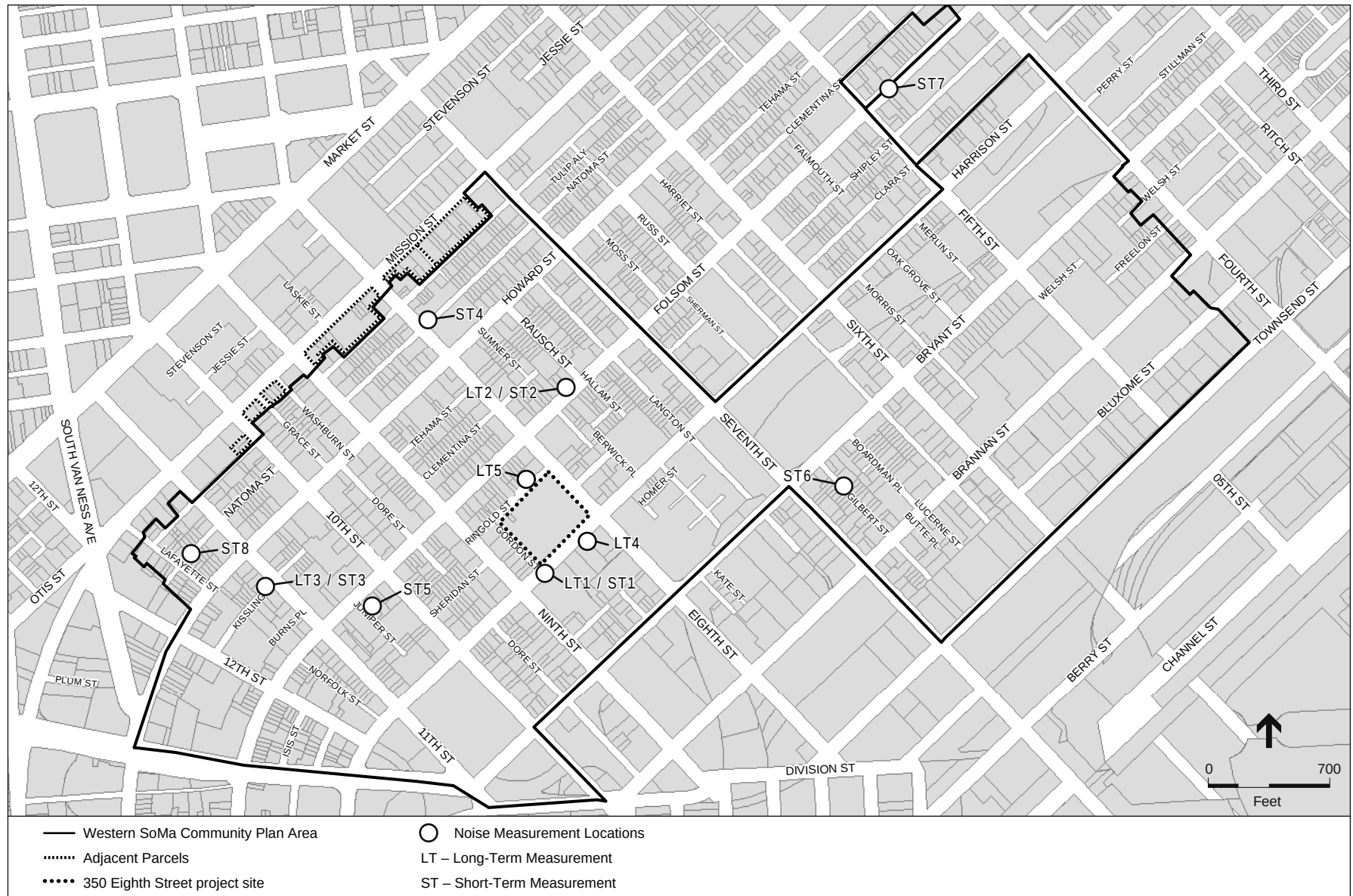
^f This noise meter location was set back from the main traffic source: Eighth Street. A short-term measurement was taken at the corner of Eighth and Ringold Streets at the same as the long-term measurement to calculate a 3-dB offset. The Ldn at the corner of Eighth and Ringold Streets is calculated to be approximately 74 dB.

SOURCE: ESA, 2011; Salter, 2011.

The DPH, which is responsible for enforcement of the San Francisco Noise Ordinance related to operational noise from such “stationary sources” (see discussion of Noise Ordinance under “Regulatory Setting,” below) has responded to a variety of noise complaints in recent years in the Project Area vicinity. In many cases, such complaints have arisen when new residential and live-work buildings have been constructed in areas historically dominated by PDR uses. DPH staff reports that, in many such instances, noise measurements taken subsequent to the receipt of complaints revealed that PDR uses were generating noise levels in excess of those permitted under the Noise Ordinance; in many cases, it is possible that the noise level had been a long-time phenomenon that only rose to the level of enforcement action when a new residential or other sensitive use was introduced nearby. According to DPH staff, in some instances, the noise complaints and resulting noise measurements that have revealed that existing PDR uses were in violation of the Noise Ordinance have resulted in either existing businesses having to retrofit equipment and/or change operations or, in some cases, relocate from the neighborhood.

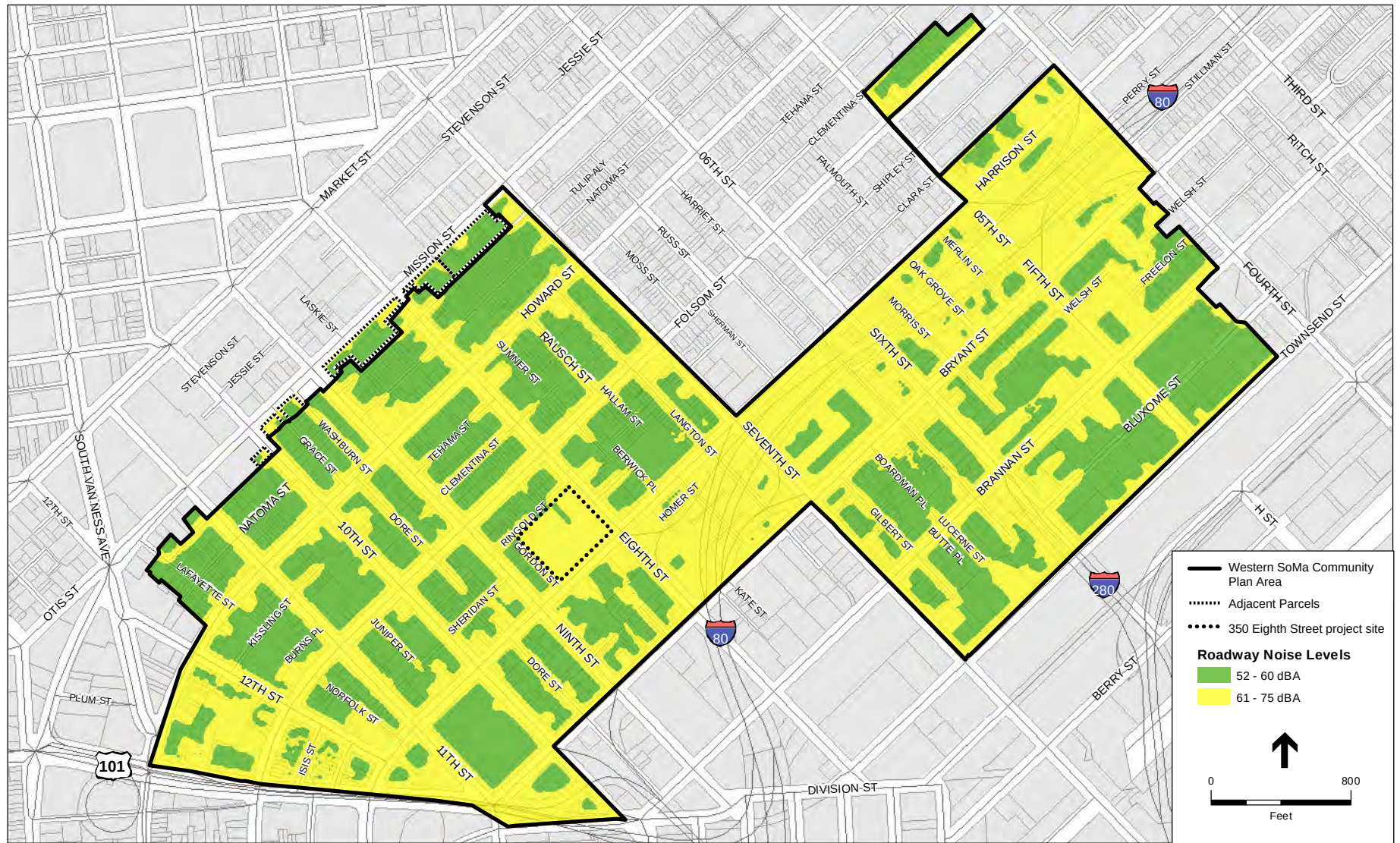
Sources of machinery and mechanical noise also contribute to ambient noise levels. On the other hand, short-term noise sources, such as truck backup beepers, the crashing of material being loaded or unloaded, and car doors slamming and engines revving outside a nightclub, contribute very little to 24-hour noise levels but are capable of causing sleep disturbance and severe annoyance. The importance of noise to receptors is dependent on both time and context. For example, long-term high noise levels from large traffic volumes can make conversation at a normal voice level difficult or impossible, while short-term peak noise levels, if they occur at night, can disturb sleep.

Places of entertainment are also existing sources of noise in the Project Area that may contribute to increased nighttime levels in proximity to sensitive receptors. Many of the existing entertainment-related businesses are permitted for extended hours of operation and some conflicts between existing residential uses and nearby entertainment uses occur under existing conditions. Many of these entertainment venues, including those with extended hours, are located along Folsom and 11th Streets. A map locating places of entertainment in the Project Area and vicinity is shown in **Figure 4.F-4** on page 4.F-10.



SOURCE: San Francisco Planning Department, 2010; and ESA, 2010

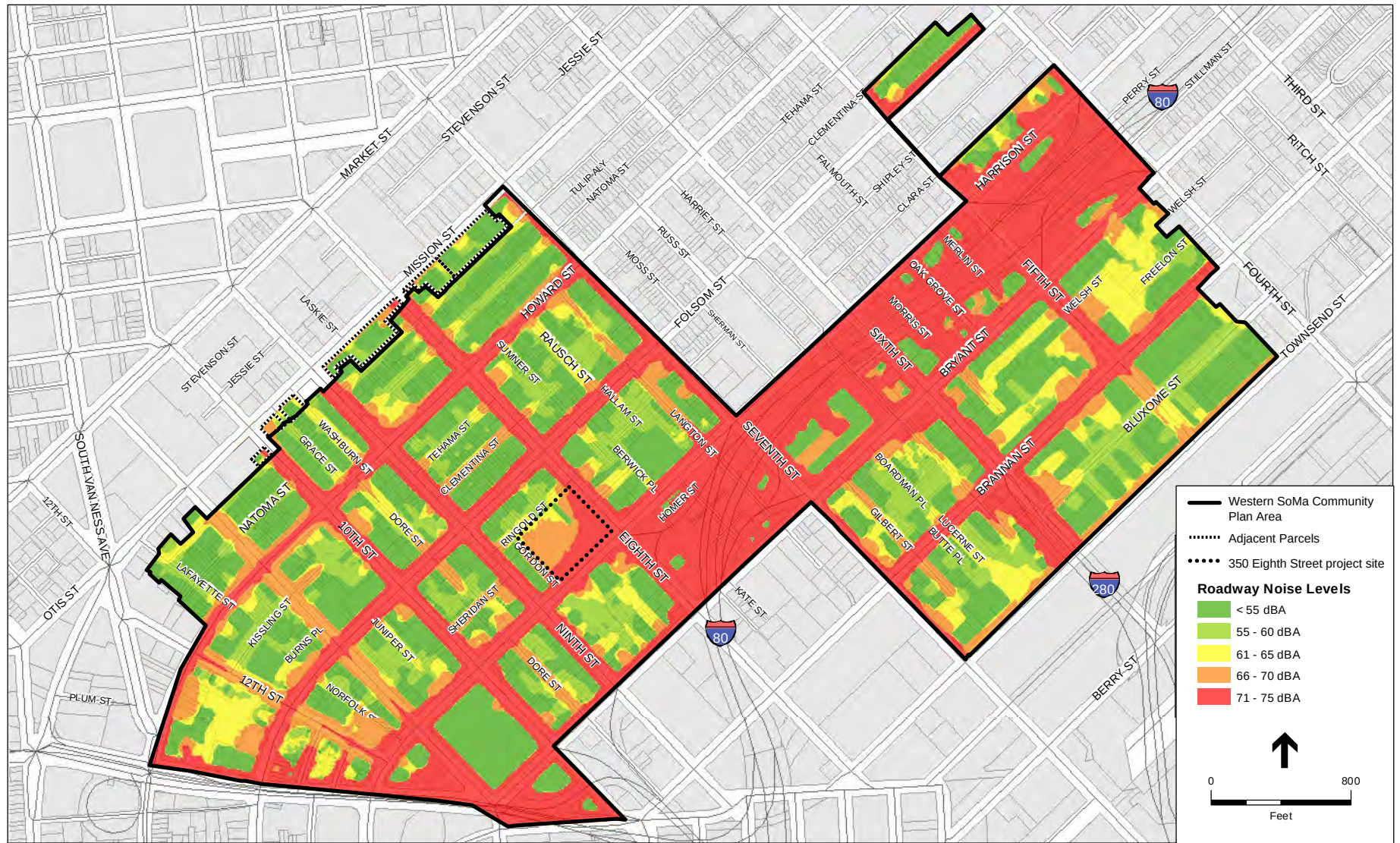
2008.0877E and 2007.1035E: Western SoMa Community Plan,
Rezoning of Adjacent Parcels, and 350 Eighth Street Project
Figure 4.F-1
Noise Measurement Locations



SOURCE: UCSF, 2011; City of San Francisco, 2011; and ESA, 2011

2008.0877E and 2007.1035E: Western SoMa Community Plan,
Rezoning of Adjacent Parcels, and 350 Eighth Street Project

Figure 4.F-2
Streets Subject to Daily Average Traffic Noise Levels
in Excess of 60 Decibels



SOURCE: UCSF, 2011; City of San Francisco, 2011; and ESA, 2011

2008.0877E and 2007.1035E: Western SoMa Community Plan, Rezoning of Adjacent Parcels, and 350 Eighth Street Project

Figure 4.F-3
Traffic Noise Map

— 2008.0877E and 2007.1035E: Western SoMa Community Plan,
Rezoning of Adjacent Parcels, and 350 Eighth Street Project
Figure 4.F-4 (revised)
Arts and Entertainment Establishments

350 Eighth Street Project Site

Land uses in the vicinity of the 350 Eighth Street project site include multi-family residential buildings, including some with loft-style units; retail stores, including several offering home furnishings and carpet; bars and restaurants; two motels; auto repair establishments; and light industrial uses such as a welding and metalworking establishment; and a Salvation Army residential facility for substance abusers (which includes a child care center). There is also a commercial electrical contractor north of the 350 Eighth Street project site, on the north side of Folsom Street. This last use is typical of the type of business that sometimes begins work early in the morning (before some residents may be awake, or at least before they are anticipating noise from commercial activities).

Noise measurements were conducted by Charles M. Salter Associates, Inc. from May 24 to May 26, 2011. The measurements were continuous and summarized every 10 seconds. The Ldn was calculated for each measurement location. As seen in Table 4.F-2, p. 4.F-5, the Ldn at Harrison Street near Eighth Street was measured at 76 dB. During the nighttime hours of 10:00 p.m. on May 24 to 7:00 a.m. on May 25, there were 114 single noise events measured above 78 dB. From 10:00 p.m. on May 25 to 7:00 a.m. on May 26, there were 107 single noise events measured above 78 dB. Ten-second Leqs ranged from 53 to 99 dB throughout the measurement period at Harrison Street near Eighth Street.

The Ldn at Eighth Street near Ringold Street was measured between 70 and 73 dB. Adding the offset in Table 4.F-2, p. 4.F-5, the Ldn at the corner of Eighth and Ringold Streets was approximately 74 dB. During the nighttime hours of 10:00 p.m. on May 24 to 7:00 a.m. on May 25, there were 42 single noise events that measured above 75 dB. From 10:00 p.m. on May 25 to 7:00 a.m. on May 26, there were also 42 single noise events that measured above 78 dB. Ten-second Leq ranged from 43 to 93 dB throughout the measurement period at Ringold Street near Eighth Street.

Sensitive Receptors

Western SoMa Community Plan Area and Adjacent Parcels

Sensitive noise receptors are generally considered to include hospitals, nursing homes, senior citizen centers, schools, churches, libraries, and residences. Land uses within the Draft Plan Area and on the Adjacent Parcels are described in detail in Section 4.A, Land Use. Residential uses occur roughly north of Harrison Street while industrial uses occur roughly south of Harrison Street. While both north of Harrison and south of Harrison areas contain some residential and institutional uses, such as schools and churches, there are more nursery schools, child care centers, and learning centers in the area north of Harrison Street as compared to the area south of Harrison Street.

350 Eighth Street Project Site

The 350 Eighth Street project site is currently surrounded by service, light industrial, and residential uses. The majority of the residential uses exist along Ringold Street to the north of the 350 Eighth Street project site and across Eighth Street to the east of the 350 Eighth Street project site. Areas along Eighth and Harrison Streets contain few, if any, residential uses, except for two loft-style live/work buildings across Harrison Street. To the south and west is Gordon Street, an alley with light industrial and some

residential uses. The closest sensitive receptors to the 350 Eighth Street project site are across Harrison Street from the site, approximately 80 feet away. The closest child care centers are located on the south side of Harrison Street at Ninth Street; one block north, on Natoma Street near Eighth Street; and one block east, at Bessie Carmichael School on Seventh and Harrison Streets. This last location is the closest school to the 350 Eighth Street project site.

Regulatory Setting

Federal Regulations

Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 Code of Federal Regulations (CFR), Part 205, Subpart B. The federal truck pass-by noise standard is 80 dBA at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers.

California Noise Insulation Standards

State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are collectively known as the California Noise Insulation Standards and are found in Title 24 of the California Code of Regulations. For limiting noise transmitted between adjacent dwelling units, the noise insulation standards specify the extent to which walls, doors, and floor ceiling assemblies must block or absorb sound. For limiting noise from exterior sources, the noise insulation standards set forth an interior standard of 45 dBA (Ldn) in any habitable room and, where such units are proposed in areas subject to noise levels greater than 60 dBA (Ldn), demonstration of how dwelling units have been designed to meet this interior standard are required. If the interior noise level depends upon windows being closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment. The typical range of noise reduction provided by residential dwellings is 12 to 18 decibels with windows partially open. An acoustically well-insulated home with windows and doors kept closed can provide 30 to 35 dB of noise attenuation, whereas a more typical, unmodified dwelling might provide 20 to 25 dB of noise level reduction.⁸

San Francisco General Plan

The Environmental Protection Element of the *San Francisco General Plan* contains Land Use Compatibility Guidelines for Community Noise.⁹ These noise compatibility guidelines, which are similar to but differ somewhat from 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 4.F-5** on p. 4.F-13. This figure presents a range of noise levels that are considered

⁸ 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.

⁹ City and County of San Francisco, Planning Department, *San Francisco General Plan*, Environmental Protection Element, Policy 11.1. Available online at: http://www.sf-planning.org/ftp/General_Plan/I6_Environmental_Protection.htm, accessed on April 19, 2012.

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 in the design.



New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.



New construction or development should generally not be undertaken.

SOURCE: San Francisco General Plan,
Environmental Protection Element

2008.0877E and 2007.1035E: Western SoMa Community Plan,
Rezoning of Adjacent Parcels, and 350 Eighth Street Project EIR

Figure 4.F-5
Land Use Compatibility Chart
for Community Noise

compatible or incompatible with various land uses. The maximum “satisfactory” noise level is 60 dBA (Ldn) for residential and hotel uses; 65 dBA (Ldn) for school classrooms, libraries, churches and hospitals; 70 dBA (Ldn) 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 new construction is proposed in areas with noise levels above 60 Ldn, a detailed analysis of noise reduction requirements including noise insulation features must occur prior to final project review and approval.

San Francisco Noise Ordinance

In the City and County of San Francisco, regulation of noise is stipulated 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(b) of the Police Code states it shall be unlawful for any person, including the City and County of San Francisco, to operate any powered construction equipment, regardless of age or date of acquisition, if the operation of such equipment emits noise at a level in excess of 80 dBA when measured at a distance of 100 feet from such equipment, or an equivalent sound level at some other convenient distance. A new amendment (d) provides that helicopters shall not be used for construction purposes for more than 2 hours in any single day or more than 4 hours in any single week. Exemptions to this requirement include:

- Impact tools and equipment with intake and exhaust mufflers recommended by the manufacturers and approved by the Director of Public Works as best accomplishing maximum noise attenuation; and
- Pavement breakers and jackhammers equipped with acoustically attenuating shields or shrouds recommended by the manufacturers and approved by the Director of Public Works as best accomplishing maximum noise attenuation.

Section 2908 prohibits any person, between the hours of 8:00 p.m. of any day and 7:00 a.m. of the following day to erect, construct, demolish, excavate for, alter, or repair any building or structure if the noise level created is in excess of the ambient noise level by 5 dBA at the nearest property line unless a special permit therefore has been applied for and granted by the Director of Public Works.

Section 2909 establishes residential property noise limits. Sources of noise include machines, devices, music or entertainment or any combination of same. Section 2909 restricts noise levels to the following:

- Five dBA above ambient levels at any point outside a residential property;
- Five dBA above ambient levels measured 3 feet from any wall, floor, or ceiling inside any multi-unit property when the windows and doors of the dwelling unit are closed;

- Eight dBA above ambient levels at any point outside a commercial or industrial property;
- Ten dBA above ambient levels at public property at a distance of 25 feet or more, unless the machine or device is being operated to serve or maintain the property or as otherwise provided in the ordinance.

The permitted fixed residential interior noise limits are restricted to 45 dBA during nighttime (10:00 p.m. to 7:00 a.m.) and 55 dBA during daytime (7:00 a.m. to 10:00 p.m.). Amendment (e), enacted in November 2008, indicates that “none of the noise limits set forth in this Section apply to activity for which the City and County of San Francisco has issued a permit that contains noise limit provisions that are different from those set forth in this Article.”

Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR, the Proposed Project would result in a significant impact with respect to noise and vibration if it would:

- Result in exposure of persons to or generation of noise levels in excess of standards established in the *San Francisco General Plan* or Noise Ordinance (Article 29 of the Police Code);
- Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- Result in a substantial permanent increase in ambient noise levels in the Project Area vicinity above levels existing without the Proposed Project;
- Result in a substantial temporary or periodic increase in ambient noise levels in the Project Area vicinity above levels existing without the Proposed Project;
- For a project located within an area covered by an airport land use plan (or, where such a plan has not been adopted, within two miles of a public airport or public use airport), expose people residing or working in the Project Area to excessive noise levels;
- For a project within the vicinity of a private airstrip, expose people residing or working in the Project Area to excessive noise levels; or
- Be substantially affected by existing noise levels.

Approach to Analysis

This analysis identifies potential noise impacts associated with existing and future development that could result from either the implementation of the Draft Plan, the Rezoning of Adjacent Parcels, or the 350 Eighth Street project. Mitigation measures that would reduce or avoid significant noise impacts are introduced when feasible. Noise issues evaluated in this section include (1) noise generated by future traffic growth under the Proposed Project, and (2) consistency of potential future uses with San Francisco Land Use Compatibility Guidelines for Community Noise (Figure 4.F-5, p. 4.F-13). Traffic noise modeling was completed using the Federal Highway Administration (FHWA) TNM Lookup 2.5 model. For

vibration impacts, FTA vibrations thresholds of 0.20 inch per second PPV and the annoyance threshold of 80 RMS are used as significance criteria.

In general, traffic noise increases of less than 3 dBA are not perceptible to most people, while a 5-dBA increase is readily noticeable.¹⁰ For traffic impacts, a 3-dB increase in traffic noise is used as the significance criterion.

Based on the physical setting of the Project Area, the Proposed Project (i.e., the Draft Plan, Rezoning of Adjacent Parcels, and 350 Eighth Street project) would not result in impacts related to the following criteria, and no impact discussion is provided for these topics for the following reasons:

- ***Exposure to Public Airport Noise.*** The Project Area is not located within an area covered by an airport land use plan or within 2 miles of a public airport or public use airport. Therefore, the Proposed Project would have no impact in relation to this criterion, and no further discussion of this criterion is provided.
- ***Exposure to Private Airstrip Noise.*** The Project Area is not located within the vicinity of a private airstrip. Therefore, the Proposed Project would have no impact in relation to this criterion, and no further discussion of this criterion is provided.

It is noted that transportation and street network improvements that would be implemented as part of the Draft Plan would not have any impacts with respect to noise and vibration, other than posting of “truck routes,” along Ninth, 10th, Harrison, and Bryant Streets in the Draft Plan Area, which is considered below. The transportation and street network improvements would not result in any other impacts listed under “Significance Criteria,” above. For this reason, these impacts are not discussed any further in this section.

Impacts of the Western SoMa Community Plan and Rezoning of Adjacent Parcels (Program-Level Analysis)

Impact NO-1: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would expose persons 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) or result in a substantial permanent increase in ambient noise levels, nor would the Project Area be substantially affected by existing noise levels as a result of these project components. (Less than Significant with Mitigation)

The Draft Plan and Rezoning of Adjacent Parcels would result in zoning changes but would not be expected to fundamentally alter the existing land uses or alter the transit-intensive noise environment. Although the implementation of the Draft Plan and Rezoning of Adjacent Parcels would not directly result in development (with the exception of the 350 Eighth Street project), these components could incentivize development, which could consequently lead to larger buildings throughout the Project Area. This would be a result of new zoning and height and bulk changes within the Draft Plan Area as well as opportunities to develop buildings to take advantage of proposed (Draft Plan Area) and existing

¹⁰ California Department of Transportation, Environmental Program, Noise, Air Quality, and Hazardous Waste Management Office, “Technical Noise Supplement,” October 1998; pp.41 – 42. Available on the internet at: <http://www.dot.ca.gov/hq/env/noise/pub/Technical%20Noise%20Supplement.pdf>.

(Adjacent Parcels) height limits. Title 24 of the state building code would be applicable to new residential projects, other than single-family dwellings.

Traffic Noise

The implementation of the Draft Plan and Rezoning of Adjacent Parcels would indirectly increase population, housing, and employment within the Project Area, which would consequently increase traffic levels throughout the Project Area. Future development resulting from implementation of the Draft Plan and the Rezoning of Adjacent Parcels would generate new motor vehicle trips on the local road network as a result of gradual intensification of uses throughout the Project Area. These trips would be distributed over the local road network and would affect roadside noise levels at sensitive receptor locations.

To assess the impact of project traffic on roadside noise levels, noise level projections were made using the Federal Highway Administration (FHWA) Traffic Noise Model (FHWA RD-77-108) for those road segments that would be used by the haul trucks (as determined in Section 4.E, Transportation and Circulation, of this report) and that pass by sensitive receptors.¹¹ The traffic volumes used for the modeling effort are weekday p.m. peak-hour volumes. The results of the modeling effort and estimated noise levels under various project scenarios are shown in **Table 4.F-3**, on the following page.

Based on existing, existing plus Proposed Project, and future cumulative traffic projections (which include all proposed development) developed as part of the transportation analysis,¹² noise levels were estimated for representative major streets within the Project Area. The roadways include segments along Bryant Street, Sixth Street, Eighth Street, Ninth Street, Harrison Street, Mission Street, and Howard Street. Noise level estimates for various segments of these roads are presented in Table 4.F-3.

As shown in this table, the greatest noise increases from the Draft Plan (including the posting of truck route signs)¹³ would be 2.2 to 2.7 decibels above existing conditions on Ninth, 10th, Harrison, and Bryant Streets. The greatest noise increases from cumulative conditions would be 2.6 to 3.7 decibels along these same streets. Permanent increases in ambient noise levels of less than 3 dBA are considered to be less than significant, and implementation of the proposed Draft Plan would have a less-than-significant noise impact due to noise created by project-generated traffic.

The anticipated growth that would occur under the Rezoning of Adjacent Parcels would not noticeably affect existing ambient noise volumes, because the greatest increase in roadway noise levels would be 0.2 decibels (on 11th Street south of Howard Street) due to traffic from growth on the Adjacent Parcels. Therefore, traffic generated by implementation of the Rezoning of Adjacent Parcels would have a less-than-significant noise impact.

¹¹ Truck route signage proposed along Ninth, 10th, Harrison, and Bryant Streets in the Draft Plan Area, as part of the transportation and streetscape improvements, was included in the noise model.

¹² LCW, *Western SOMA Community Plan Transportation Study – Final Report*, June 15, 2012. This document is available for review in Project File No. 2008.0877E at the San Francisco Planning Department, Fourth Floor, 1650 Mission Street, San Francisco.

¹³ Effects of the posting of truck route signs are discussed separately in Impact NO-5, below.

TABLE 4.F-3
EXISTING AND PROJECTED PEAK-HOUR TRAFFIC NOISE LEVELS ALONG ROADWAYS IN THE PROJECT AREA VICINITY^a

Roadway Segment ^{b,c}	Peak-Hour Noise Level, dBA, Leq															
	Exist. (A)	Exist. + Plan (B)	Change (B – A)	Signif.? (Y/N) ^d	Exist. + Tr. Rte. (C)	Change (C – A)	Signif.? (Y/N) ^d	Ex.+Adj. Parcels (D)	Change (D – A)	Signif.? (Y/N) ^d	Exist. + 350 8 th (E)	Change (E – A)	Signif.? (Y/N) ^d	Cum. 2030 (F)	Change (F – A)	Signif.? (Y/N) ^d
Bryant Street west of Sixth Street	66.7	69.2	+2.5	No	68.7	+1.9	No	66.8	+0.0	No	66.8	+0.1	No	69.7	2.9	No
Eighth Street north of Harrison Street	67.5	68.2	+0.7	No	67.5	+0.0	No	67.5	+0.0	No	67.9	+0.4	No	68.6	+1.1	No
Harrison Street west of Eighth Street	68.6	71.3	+2.7	No	70.5	+1.9	No	68.6	+0.0	No	69.0	+0.4	No	71.7	+3.1	Yes
Ninth Street south of Mission Street	70.8	73.0	+2.2	No	72.7	+1.9	No	70.8	+0.0	No	70.8	+0.0	No	74.7	+3.7	Yes
10th Street north of Harrison Street	68.5	70.7	+2.2	No	70.5	+1.9	No	68.6	+0.0	No	68.5	+0.0	No	71.1	+2.6	No
11th Street south of Howard Street	64.6	64.9	+0.3	No	64.6	+0.0	No	64.8	+0.2	No	64.6	+0.0	No	66.5	+0.9	No
Howard Street west of 11th Street	63.2	63.8	+0.6	No	63.2	+0.0	No	63.2	+0.0	No	63.2	+0.0	No	64.5	+1.3	No

^a Scenario A – Existing; Scenario B – Existing plus Plan, Scenario C – Existing plus Truck Routes; Scenario D – Existing plus Adjacent Parcels; Scenario E – Cumulative 2030, including Plan, Truck Routes, Adjacent Parcels, and 350 Eighth Street, as well as background growth outside Draft Plan Area and Adjacent Parcels.

^b Road center to receptor distance is 15 meters (approximately 50 feet) for values shown in this table. Noise levels were calculated using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (FHWA RD-77-108). Table may not add across rows due to rounding.

^c Vehicle mix on based on existing truck percentages from the Traffic Report by LCW (vehicles 97%, medium trucks 1%, heavy trucks 2%) for Scenarios A, D, and E. For Scenarios B, C, and E, truck percentages were doubled on 9th, 10th, Harrison, and Bryant Streets. The speed for all segments was assumed to be 30 miles per hour.

^d Considered **significant** if the incremental increase in noise is greater than 3 dBA *and* results in noise levels above those considered compatible with the *San Francisco General Plan* Land Use Compatibility Guidelines for Community Noise Chart.

SOURCE: ESA, 2012

As described under “Environmental Setting,” above, traffic-generated noise levels along most major streets throughout the Project Area currently exceed 70 dBA (Ldn), and traffic noise on some of the smaller mid-block streets currently exceeds 60 dBA (Ldn). The *San Francisco General Plan* noise compatibility guidelines (Figure 4.F-3, page 4.F-13) indicate that any new residential construction or development in areas with noise levels above 60 dBA (Ldn) should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features are included in the design. In areas where noise levels exceed 65 dBA (Ldn), new residential construction or development is generally discouraged, but if it does proceed, a detailed analysis of noise reduction requirements must be done and needed noise insulation features included in the design. It is noted, however, that because most new residential development that would be allowed within the Draft Plan Area and on the Adjacent Parcels would be attached, multi-family residential units, most new dwelling units would be subject to state Title 24 noise requirements contained in the California Noise Insulation Standards. Building Code regulation requires meeting an interior standard of 45 dBA (Ldn) in any habitable room where such units are proposed in areas subject to noise levels greater than 60 dBA (Ldn). In areas with noise levels up to 70 dBA (Ldn), conventional construction with closed windows and fresh air supply systems or air conditioning will normally be adequate to maintain acceptable interior noise levels (45 dBA, Ldn).

For residential development not subject to the California Noise Insulation Standards (e.g., single-family dwellings), traffic noise in the Project Area has the potential to result in a significant effect. Implementation of **Mitigation Measures M-NO-1a and M-NO-1b**, below, would reduce the impact of exposure to noise levels in excess of *San Francisco General Plan* recommendations to a less-than-significant level.

Other noise-sensitive land uses, such as schools, libraries, churches, and hospitals, where the *San Francisco General Plan*-recommended threshold for detailed noise reduction analysis is 65 dBA (Ldn), would be subject to this noise recommendation at many locations in the Project Area. Because such special-purpose uses are frequently subject to particular design and construction standards, it is similarly anticipated that consistency with the *San Francisco General Plan* recommendations would be achieved as a matter of course, in many instances. However, without adequate design, significant impacts on such uses could result from noise levels generated by traffic or fixed sources in excess of *San Francisco General Plan* recommendations. Implementation of Mitigation Measure M-NO-1b would reduce this impact to a less-than-significant level.

Mitigation Measures

M-NO-1a: Interior Noise Levels for Residential Uses. For new development including noise-sensitive uses located along streets with noise levels above 60 dBA (Ldn), where such development is not already subject to the California Noise Insulation Standards in Title 24 of the California Code of Regulations, the project sponsor of future individual developments within the Project Area shall conduct a detailed analysis of noise reduction requirements prior to completion of environmental review. Such analysis shall be conducted by person(s) qualified in acoustical analysis and/or engineering. Noise insulation features identified and recommended by the analysis shall be included in the design, as specified in the *San Francisco General Plan* Land Use Compatibility Guidelines for Community Noise to reduce potential interior noise levels to the maximum extent feasible. Additional noise attenuation features may

need to be incorporated into the building design where noise levels exceed 70 dBA (Ldn) to ensure that acceptable interior noise levels can be achieved.

M-NO-1b: Siting of Noise-Sensitive Uses. To reduce potential conflicts between existing noise-generating uses and new sensitive receptors, for new residential development and development that includes other noise-sensitive uses (primarily, residences, and also including schools and child care, religious, and convalescent facilities and the like), the San Francisco Planning Department shall require the preparation of an analysis that includes, at a minimum, a site survey to identify potential noise-generating uses within 900 feet of, and that have a direct line-of-sight to, the project site, and including at least one 24-hour noise measurement (with average and 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 Title 24 standards, where applicable, can be met, and that there are no particular circumstances about the individual project site that appear to warrant heightened concern about noise levels in the vicinity. The analysis shall be conducted prior to completion of the environmental review process. Should the Planning Department conclude that such concerns be present, the San Francisco Planning Department may require the completion of a detailed noise assessment by person(s) qualified in acoustical analysis and/or engineering prior to the first project approval action, in order to demonstrate that acceptable interior noise levels consistent with those in the Title 24 standards can be attained.

Significance after Mitigation: Less than Significant.

Noise from Existing and New Non-Residential Facilities

As noted under “Environmental Setting,” above, parts of the Project Area are subject to operational noise from commercial and light industrial (PDR) uses that, in particular, generate late night and early morning noise. Such uses have in recent years generated noise complaints, especially from occupants of newly developed residential and live-work buildings.

In general, the Draft Plan would tend to rationalize the arrangement of land use in the Draft Plan Area so that new residential uses would be less likely to locate in proximity to new noise-generating PDR uses than is the case under existing conditions. This is because the Draft Plan would encourage expansion of commercial and light industrial uses in the areas south of Harrison Street, where new residential uses would not be permitted, except in three mid-block residential and mixed residential districts. Because the Draft Plan would more clearly define areas intended for non-residential uses, the Draft Plan would tend to result, over time, in fewer land use conflicts between noise generators and residential and other noise-sensitive uses. However, because the Draft Plan would permit existing uses to remain where they are, existing PDR uses would remain, to a greater or lesser degree, in or adjacent to some areas either newly zoned, or retaining current zoning, for mixed residential and other uses. Thus, particularly in the short term, the Draft Plan would facilitate some residential development in proximity to a mix of uses

including commercial and light industrial uses that can generate operational noise, as well as other non-residential uses such as retail, music, pedestrians, and “places of entertainment” uses (Figure 4.F-4, p. 4.F-10). Sources of noise typically associated with such non-residential uses can include loading/unloading activities, delivery trucks, parking cars, garbage trucks, amplified music, and use of refuse and recycling bins. Stationary sources of noise from such uses can include mechanical equipment and ventilation units. Depending on the type of commercial or employment activities, noise generated during the evening or nighttime hours can result in noise conflicts between residential and commercial uses. These uses sometimes generate noise levels that could prove disruptive to occupants of new residential development. Residential development in proximity to existing noisy uses could result in health effects associated with exposure to chronic high levels of environmental noise and with exposure to short-term spikes in noise occurring during the typical hours of sleep. Such health effects include sleep disturbance, annoyance, impaired speech comprehension, and possible changes in cognitive function.

Depending on the type and design of residential development proposed, outdoor areas associated with residential uses could also be exposed to noise levels above 60 dBA (Ldn). Very often, residential developments provide a roof deck or an interior courtyard that provides a noise-protected location for exterior recreation. Where such features are included, balconies associated with each residential unit are considered an architectural feature, not an outdoor recreational area that must comply with the San Francisco Land Use Compatibility Guidelines for Community Noise. However, by exposing persons to elevated noise levels, these exterior features could be subject to significant noise impacts if located in particularly noisy locations. Implementation of **Mitigation Measure M-NO-1c** would reduce potential conflicts between new noise-generating uses and existing noise-sensitive uses, and **Mitigation Measure M-NO-1d** would address noise in open space areas. Together, these measures would reduce noise impacts of potentially incompatible uses to less-than-significant levels.

A similar significant noise impact from incompatibility of land uses (i.e., siting of residences near light industrial uses, for example) has the potential to occur on the Adjacent Parcels. As part of this project component, the Adjacent Parcels would be rezoned as downtown General Commercial (C-3-G) along the south side of Mission Street between Ninth and 11th Streets and rezoned as Eastern Neighborhoods Mixed Use Office (MUO) along the south side of Mission Street between Seventh and Ninth Streets. Once rezoned, these parcels would allow a variety of uses, including retail, offices, hotels, entertainment, clubs, and institutions, and high-density residential uses within the new C-3-G districts, and office uses, housing, small-scale light industrial and arts activities, and nighttime entertainment uses (permitted as a with a Conditional Use [CU] authorization) within the new MUO districts. Implementation of Mitigation Measure M-NO-1c and Mitigation Measure M-NO-1d would reduce potential conflicts between noise-generating and noise-sensitive uses within the Adjacent Parcels to less-than-significant levels. These mitigation measures would apply to individual projects that are proposed within the Draft Plan Area or on the Adjacent Parcels.

Mitigation Measures

M-NO-1c: Siting of Noise-Generating Uses. To reduce potential conflicts between existing sensitive receptors and new noise-generating uses, for new development including commercial, industrial, or other uses that would be expected to generate noise levels in

excess of ambient noise, either short-term, at nighttime, or as 24-hour average, in the proposed project site vicinity, the San Francisco Planning Department shall require the preparation of an analysis that includes, at a minimum, a site survey to identify potential noise-sensitive uses (primarily, residences, and also including schools and child care, religious, and convalescent facilities and the like) within two blocks 900 feet of, and that have a direct line-of-sight to, the project site, and at least one 24-hour noise measurement (with average and 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 conducted prior to completion of the environmental review process. The analysis shall be prepared by persons qualified in acoustical analysis and/or engineering and shall demonstrate with reasonable certainty that the proposed use would comply with the use compatibility requirements in the *San Francisco General Plan* and Police Code Section 2909, that the proposed use would not adversely affect nearby noise-sensitive uses, and that there are no particular circumstances about the project site that appear to warrant heightened concern about noise levels that would be generated by the proposed use. Should the Planning Department conclude that such concerns be present, the San Francisco Planning 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 may require implementation of site-specific noise reduction features or strategies.

M-NO-1d: Open Space in Noisy Environments. To minimize effects on development in noisy areas, for new development including noise-sensitive uses (primarily, residences, and also including schools and child care, religious, and convalescent facilities and the like), the San Francisco Planning Department shall, through its building permit review process, in conjunction with noise analysis required pursuant to Mitigation Measure M-NO-1c, require that open space required under the Planning Code for such uses be protected, to the maximum feasible extent, from existing ambient noise levels that could prove annoying or disruptive to users of the open space. Implementation of this measure could involve, among other things, site design that uses the building itself to shield on-site open space from the greatest noise sources, construction of noise barriers between noise sources and open space, and appropriate use of both common and private open space in multi-family dwellings. Implementation of this measure shall be undertaken consistent with other principles of urban design.

Significance after Mitigation: Less than Significant.

Impact NO-2: Construction activities in the Draft Plan Area and on Adjacent Parcels would not expose persons to temporary increases in noise levels substantially in excess of ambient levels. (Less than Significant with Mitigation)

Construction activity noise levels at and near the construction areas would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment. Construction-

related material haul trips would raise ambient noise levels along haul routes, depending on the number of haul trips made and types of vehicles used. In addition, certain types of construction activity (such as pile driving) generate impulsive noises, which can be particularly bothersome. The San Francisco Municipal Code limits construction to the hours of 7:00 a.m. to 8:00 p.m. Increased ambient noise levels from construction would be considered short-term and intermittent. Due to the programmatic nature of the Draft Plan and Rezoning of Adjacent Parcels, it is unknown whether future development within the Draft Plan Area or on the Adjacent Parcels would involve pile driving. **Table 4.F-4**, below, shows typical noise levels during different construction stages. **Table 4.F-5**, below, shows typical noise levels produced by various types of construction equipment.

TABLE 4.F-4
TYPICAL CONSTRUCTION NOISE LEVELS

Construction Phase	Noise Level (dBA, Leq) ^a
Excavation	89
Finishing	89
Erection	85
Ground Clearing	84
Foundations	78

^a Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.

SOURCE: U.S. Environmental Protection Agency, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, 1971.

TABLE 4.F-5
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, Leq at 50 feet)
Pile Driver	101
Paver	89
Dump Truck	88
Jack Hammer	88
Scraper	88
Dozer	87
Concrete Mixer (Truck)	85
Backhoe	85
Portable Air Compressor	81
Generator	76

SOURCE: Cunniff, Environmental Noise Pollution, 1977.

Noise from construction activities generally attenuates at a rate of 6 to 7.5 dBA per doubling of distance. Based on the layout and terrain of the Draft Plan Area and Adjacent Parcels, an attenuation of 6 dBA is assumed. Future construction could occur adjacent to sensitive receptors. Based on Table 4.F-5 on p. 4.F-23, the noise level associated with excavation is 89 dBA at 50 feet. Therefore, if sensitive receptors were located at this distance, construction noise at these levels would be substantially greater than existing noise levels throughout the Project Area. Impacts associated with construction noise, especially if the construction is to occur during the nighttime hours when people are sleeping, would be significant. As stated under “Environmental Setting,” above, closed windows typically can reduce daytime interior noise levels by 20 to 25 decibels, to what is normally an acceptable level. Nevertheless, because of the number of sensitive receptors in the vicinity of the Draft Plan Area and Adjacent Parcels, implementation of **Mitigation Measures M-NO-2a**, below, would be required to reduce the noise impact from future construction throughout the Draft Plan Area and Adjacent Parcels to a less-than-significant level.

In the event that pile driving is determined to be required for a subsequent individual development project within the Draft Plan Area or on the Adjacent Parcels, the project sponsor would be required to comply with measures required for construction equipment in Section 2907 of the Noise Ordinance. However, even compliance with Section 2907 measures has the potential to expose sensitive receptors to temporary increases in noise levels substantially in excess of ambient levels, resulting in a potentially significant noise impact. Implementation of **Mitigation Measure M-NO-2b**, below, would reduce adverse impacts from pile-driving noise upon sensitive receptors to less-than-significant levels.

Mitigation Measures

M-NO-2a: General Construction Noise Control Measures. To ensure that project noise from construction activities is minimized to the maximum extent feasible, the sponsor of a subsequent development project shall undertake the following:

- The sponsor of a subsequent development project shall require the general contractor to ensure that equipment and trucks used for project construction use the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds, wherever feasible).
- The sponsor of a subsequent development project shall require the general contractor to locate stationary noise sources (such as compressors) as far from adjacent or nearby sensitive receptors as possible, to muffle such noise sources, and to construct barriers around such sources and/or the construction site, which could reduce construction noise by as much as 5 dBA. To further reduce noise, the contractor shall locate stationary equipment in pit areas or excavated areas, if feasible.
- The sponsor of a subsequent development project shall require the general contractor to use impact tools (e.g., jack hammers, pavement breakers, and rock drills) that are hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used, along with external noise jackets on the tools, which could reduce noise levels by as much as 10 dBA.

- The sponsor of a subsequent development project shall include noise control requirements in specifications provided to construction contractors. Such requirements could include, but not be limited to, performing all work in a manner that minimizes noise to the extent feasible; undertaking the most noisy activities during times of least disturbance to surrounding residents and occupants, as feasible; and selecting haul routes that avoid residential buildings inasmuch as such routes are otherwise feasible.
- Prior to the issuance of each building permit, along with the submission of construction documents, the sponsor of a subsequent development project shall submit to the San Francisco Planning Department and Department of Building Inspection (DBI) a list of measures to respond to and track complaints pertaining to construction noise. These measures shall include: (1) a procedure and phone numbers for notifying DBI, the Department of Public Health, and the Police Department (during regular construction hours and off-hours); (2) a sign posted on-site describing noise complaint procedures and a complaint hotline number that shall be answered at all times during construction; (3) designation of an on-site construction complaint and enforcement manager for the project; and (4) notification of neighboring residents and non-residential building managers within 300 feet of the project construction area at least 30 days in advance of extreme noise-generating activities (defined as activities generating noise levels of 90 dBA or greater) about the estimated duration of the activity.

M-NO-2b: Noise Control Measures During Pile Driving. For individual projects within the Draft Plan Area and Adjacent Parcels that require pile driving, a set of site-specific noise attenuation measures shall be completed under the supervision of a qualified acoustical consultant. These attenuation measures shall include as many of the following control strategies as feasible:

- The sponsor of a subsequent development project shall require the construction contractor to erect temporary plywood noise barriers along the boundaries of the project site to shield potential sensitive receptors and reduce noise levels by 5 to 10 dBA, although the precise reduction is a function of the height and distance of the barrier relative to receptors and noise source(s);
- The sponsor of a subsequent development project 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, in consideration of geotechnical and structural requirements and conditions;
- The sponsor of a subsequent development project shall require the construction contractor to monitor the effectiveness of noise attenuation measures by taking noise measurements; and
- The sponsor of a subsequent development project shall require that the construction contractor limit pile-driving activity to result in the least disturbance to neighboring uses.

Additionally, if pile driving would occur within proximity to historical resources, project sponsors would be required to incorporate **Mitigation Measures M-CP-7a**, Protect

Historical Resources from Adjacent Construction Activities, and **Mitigation Measure M-CP-7b**, Construction Monitoring Program for Historical Resources, discussed in Section 4.D, Cultural and Paleontological Resources.

Significance after Mitigation: Less than Significant.

Impact NO-3: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would expose people to or generate excessive groundborne vibration. (Less than Significant with Mitigation)

Gradual implementation of the Draft Plan and the Rezoning of Adjacent Parcels could potentially expose people to the impacts of excess groundborne vibration or noise levels. Specifically, vibration created through construction including pile driving could occur adjacent to sensitive receptors.

As shown in **Table 4.F-6**, below, use of heavy equipment (other than pile drivers) for project construction generates vibration levels up to 0.210 PPV or 94 RMS at a distance of 25 feet. Vibratory pile drivers could generate vibration levels up to 1.518 PPV or 112 RMS at a distance of 25 feet. As indicated in the table, vibration levels, measured as PPV, would be reduced by more than 80 percent at a distance of 82.5 feet, which is the width of the major streets in the Plan Area. (At a distance of 100 feet, even the upper range vibration level from pile driving would be less than the FTA criteria of 0.2 PPV for structural damage.) Therefore, vibration from construction would most affect receptors on adjacent parcels, where construction activities could generate ground-borne vibration levels that would exceed the FTA criteria of 0.2 PPV for structural damage and exceed 80 RMS for human annoyance. This has the potential to result in significant noise impact with regard to vibration. Implementation of Mitigation Measures M-NO-2a and M-NO-2b would reduce impacts of construction vibration to less-than-significant levels for both the Draft Plan and the Rezoning of Adjacent Parcels.

TABLE 4.F-6
VIBRATION VELOCITIES FOR CONSTRUCTION EQUIPMENT

Representative Equipment/Activity	PPV at 25 Feet (inches/second) ^a	PPV at 82.5 feet	RMS at 25 Feet (Vdb) ^b	PPV at 82.5 feet
Pile Driver (upper range)	1.518	0.265	112	106
Pile Driver (typical)	0.664	0.113	104	98
Vibratory Roller	0.210	0.037	94	73
Clam Shovel Drop (slurry wall)	0.202	0.035	94	73
Large Bulldozer	0.089	0.016	87	72
Loaded Trucks	0.076	0.013	86	71
Small Bulldozer	0.003	0.001	58	43

^a Buildings can be exposed to groundborne vibration levels of 0.2 peak particle velocity (PPV) without experiencing structural damage.

^b The human annoyance response level is 80 root mean square (RMS). Decibel notation (Vdb) is commonly used to measure RMS.

SOURCE: ESA, 2010; Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.

Mitigation: Implement **Mitigation Measures M-NO-2a**, General Construction Noise Control Measures, discussed on page 4.F-24, and **Mitigation Measure M-NO-2b**, Noise Control Measures During Pile Driving, discussed on page 4.F-25.

Significance after Mitigation: Less than Significant.

Impacts of Transportation Improvements in the Draft Plan Area (Project-Level Analysis)

As described in Chapter 2, Project Description, this EIR analyzes four specific improvements to the Draft Plan Area transportation network at a project-specific level. These improvements are posting of “truck route” signs on Ninth, 10th, Harrison, and Bryant Streets in the Draft Plan Area; installation of new signalized pedestrian mid-block crossings on Folsom Street; installation of new signalized mid-block pedestrian crossings on Minna and Natoma Streets; and installation of streetscape and traffic calming improvements on Minna, Natoma, and Ringold Streets. Of these improvements, only the posting of truck route signs has the potential for substantial noise impacts, which are analyzed here.

Posting of truck route signs would involve no construction activity. Installation of new signalized crosswalks would involve a very small amount of excavation for installation of electrical lines and signal controllers, as well as the signal lights themselves. Installation of streetscape and traffic calming improvements on Minna, Natoma, and Ringold Streets would involve demolition of portions of the existing sidewalks, installation of new concrete and/or brick sidewalks and bulb-outs, including raised sidewalks across the ends of the mid-block alleys, and new paving, as well as planting of new landscaping. However, this work would be expected to last for less than six months, and therefore would not generate substantial construction-period noise that would adversely affect nearby receptors; noise impacts would be comparable to routine short-term utility work in the streets, which is an existing and ongoing, and accepted, feature of city life. Therefore, construction impacts of the proposed transportation improvements would be less than significant. Because of the limited construction activity involved, the proposed truck route signage is evaluated below with respect to potential operational noise impacts.

Impact NO-4: The proposed street network improvements would not result in a substantial permanent, temporary, or periodic increase in ambient noise levels in the Project Area above levels without these improvements. (Less than Significant)

Truck Route Signs

Truck route signs are proposed to be installed on Ninth Street between Bryant and Mission Streets, 10th Street between Bryant and Mission Streets, Harrison Street between Fourth and 13th Streets, and Bryant Street between Fourth and 13th Streets. For consistency with the transportation analysis in Section 4.E, Transportation and Circulation, of this EIR, this analysis assumes that the posting of truck route signs on these streets would double the percentage of truck traffic on these streets. No reduction in truck traffic was assumed on other streets, so the analysis is conservative. The increased volume of trucks would increase traffic noise levels on Ninth, 10th, Harrison, and Bryant Streets by approximately 1.9 dBA,

as shown in Table 4.F-3. Because this increase would be less than the 3 dBA identified as the significance threshold for permanent noise increases, the impact would be less than significant.

Mitigation: None required.

Impacts of the 350 Eighth Street Project (Project-Level Analysis)

Impact NO-5: The proposed 350 Eighth Street project would not expose persons 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) or result in a substantial permanent increase in ambient noise levels, nor would the 350 Eighth Street project site be substantially affected by existing noise levels as a result of this project component. (Less than Significant with Mitigation)

The 350 Eighth Street project would contain dwelling units, commercial space, industrial use and artist studios, and community space. The proposed commercial uses would be located on the ground level, as in much of the surrounding area. Light industrial and art-related uses would also be located at the ground levels, along Gordon Street, and a community center would occupy the ground floor along Eighth Street near Ringold Street. The upper stories of the 350 Eighth Street project would consist of residential areas except for one multi-story building (Building Three) at the corner of Gordon and Harrison Streets adjacent to The Stud nightclub.

Table 4.F-2, p. 4.F-5, shows short-term and long-term noise measurements taken at locations ST-1 and LT-1 (locations shown in Figure 4.F-1, p. 4.F-7), just southwest of the 350 Eighth Street project site. Measured noise levels in this area ranged between 60 and 70 dB Leq. Short-term measurement levels reached 79 and 80 dB due to a passing bus and a tow truck. Short-term projected and long-term measured Ldns ranged from 70 to 76 in the vicinity of the 350 Eighth Street project site.

Traffic Noise

As described under “Environmental Setting,” above, traffic-generated noise levels along most major streets in the Project Area currently exceed 70 dBA (Ldn); based on modeling conducted by the DPH and the modeled traffic calculations, the noise level along both Eighth and Harrison Streets exceeds 70 dBA (Ldn). A 24-hour noise measurement conducted along Harrison Street near Eighth Street measured a day-night noise level of 76 dB (LT4 in Table 4.F-2, p. 4.F-5).¹⁴ At these levels, the residences proposed on the second floor, approximately 50 feet from the center of Harrison Street, would experience Ldn levels of approximately 75 dB.¹⁵ The Ldn at Ringold and Eighth Streets measured 70 to 72 dB (LT-5 in Table 4.F-2, page 4.F-5). At the corner of Eighth and Ringold Streets, Ldn levels would be 73 to 75 dB when taking into account the 3-dB offset. At these levels, the residences proposed on the second floor, approximately

¹⁴ Measured noise levels differ from modeled noise levels (shown in Table 4.F-3) in that the measured levels include all actual noise sources, while the modeled noise levels in Table 4.F-3 are predictions of noise only from vehicle traffic.

¹⁵ Based on the analysis in Impact NO-1 and Table 4.F-3, traffic from the 350 Eighth Street project itself would have no perceptible effect on roadway noise, because it would result in a maximum increase of 4dBA, which would not be perceptible.

40 feet from the center of Eighth Street, would experience Ldn levels of approximately 72 to 73 dB. Therefore, in order to meet the 45-dBA standard for interior habitable rooms that is contained in the California Noise Insulation Standards, the 350 Eighth Street project sponsor would have to incorporate noise insulation features in the proposed 350 Eighth Street project to achieve an interior noise level of 45 Ldn. This is already required by Title 24 of the state building code that would avoid a potentially significant impact to project residents.

As discussed above for the Draft Plan and Rezoning of Adjacent Parcels, generally, traffic volumes in an area would have to approximately double before the increase in ambient noise levels would be noticeable to most people. The 350 Eighth Street project would not double traffic volumes in the 350 Eighth Street project vicinity. As shown in Table 4.F-3, p. 4.F-18, the 350 Eighth Street project itself would result in traffic noise increases of less than 0.5 decibels when added to existing conditions. Since the 350 Eighth Street project would generate a less than 3-dBA increase in traffic noise levels, it would have a less-than-significant impact on noise.

As described in Chapter 2, Project Description, the proposed 350 Eighth Street project would include, as part of its on-site open space, a pocket park at the intersection of Eighth and Ringold Streets. This open space would be exposed to traffic noise levels in excess of 70 dBA (Ldn), and the *San Francisco General Plan* would, therefore, recommend that noise-insulation features be included in the design of this pocket park. Traffic noise in excess of standards established in the *San Francisco General Plan* at the pocket park would be a significant impact. Implementation of **Mitigation Measure M-NO-5a**, Noise Reduction for 350 Eighth Street Pocket Park, discussed on page 4.F-30, would reduce traffic noise at the pocket park to a less-than-significant level.

Noise from Existing Facilities

The existing noise-generating uses in the 350 Eighth Street project site vicinity include the bus parking and inspection yard and vehicle traffic along nearby streets. The 350 Eighth Street project may include mechanical equipment, such as forced air mechanical ventilation, that could produce operational noise. These operations would be subject to the San Francisco Noise Ordinance, Article 29, Section 2909, which limits noise from building operations. Substantial increases in the ambient noise level due to building equipment noise would not be anticipated. The commercial and light industrial/artist components would generate new sources of noise but not at levels substantially above ambient noise levels.

Other surrounding uses in the vicinity of the 350 Eighth Street project site include places of entertainment as seen in Figure 4.F-4, p. 4.F-10. These include The Stud nightclub at the corner of Harrison and Ninth Streets, Icon Ultra Lounge on Folsom and Eighth Streets, a multi-use arts center at Folsom between Eighth and Ninth Streets, the Lone Star Saloon at Harrison and Dore Streets, and Medici Entertainment Lounge on the corner of Folsom and Ninth Streets that may have extended hours of operation. Other entertainment uses exist around the 350 Eighth Street project site, but most are located opposite of existing building and would be blocked from the line of sight.

Many units on the 350 Eighth Street project's top two or three stories would have an unobstructed line-of-sight to existing heating and cooling units adjacent to the 350 Eighth Street project site. However,

compliance with Title 24 Noise Insulation Standards would avoid this noise impact as well as impact from the nearby places of entertainment.

Mitigation Measures

M-NO-5: Noise Reduction for 350 Eighth Street Pocket Park. The project sponsor of the 350 Eighth Street project shall retain a qualified acoustical consultant to develop, as part of the project design specifications, a requirement to achieve the maximum feasible reduction in traffic noise at the proposed pocket park at Eighth and Ringold Streets. The sponsor shall consider, among other potential approaches, the installation of a transparent or planted noise barrier, or comparable noise-reduction feature(s) as may be determined acceptable to the San Francisco Planning Department, in consultation with the Department of Public Health, along the Eighth Street frontage of the pocket park, wrapping around the corner at Ringold Street and extending part of the way along the Ringold Street frontage.

Significance after Mitigation: Less than Significant.

Impact NO-6: Construction of the 350 Eighth Street project could expose persons to temporary increases in noise levels substantially in excess of ambient levels. (Less than Significant with Mitigation)

Sensitive noise receptors in the vicinity of the 350 Eighth Street project site include residential uses surrounding the project block. The residential uses along Ringold Street to the northwest of the site would experience temporary and intermittent noise associated with site clearance and construction activities as well as the passage of construction trucks. Site excavation would involve removal of approximately 64,050 cubic yards of soil. No pile driving is anticipated. The 350 Eighth Street project includes construction of a below-grade garage parking area.

Demolition, excavation, and project construction would temporarily increase noise in the vicinity of the 350 Eighth Street project site. Construction would take approximately 36 months. During the majority of construction activity, noise levels would be above existing levels in the vicinity. Construction noise would fluctuate depending on the construction phase, equipment type and duration of use, distance between noise source and listener, and presence or absence of barriers. There would be times when noise could interfere with indoor activities in nearby residences and other businesses near the project site. Based on Tables 4.F-4 and 4.F-5, pages 4.F-23 and 4.F-23, the closest sensitive receptors, which are located along Ringold Street, approximately 40 feet away, could experience construction noise levels of up to 91 decibels. Noise impacts would be temporary in nature and would be limited to the period of construction.

The 350 Eighth Street project demolition and construction activities would be required to comply with the Noise Ordinance requirements, which prohibit construction after 8:00 p.m. Pile driving is not contemplated for the 350 Eighth Street project, but could result in significant noise impacts if subsequently determined to be necessary for project construction. Should pile driving subsequently be

determined to be necessary for project construction, the 350 Eighth Street project sponsor would be required to comply with measures required for construction equipment in Section 2907 of the Noise Ordinance as well as **Mitigation Measure M-NO-2a**. The 350 Eighth Street project sponsor would also be required to implement **Mitigation Measure M-NO-2b** (General Construction Noise Control Measures) to reduce other construction noise to a less-than-significant level.

Mitigation: Implement **Mitigation Measures M-NO-2a**, General Construction Noise Control Measures, discussed on page 4.F-24, and **Mitigation Measure M-NO-2b**, Noise Control Measures During Pile Driving, discussed on page 4.F-25.

Significance after Mitigation: Less than Significant.

Impact NO-7: The proposed 350 Eighth Street project would not expose people to or generate excessive groundborne vibration. (Less than Significant with Mitigation)

As shown in Table 4.F-6, p. 4.F-26, use of heavy equipment for the 350 Eighth Street project construction would generate vibration levels up to 0.210 PPV or 94 RMS at a distance of 25 feet. Pile driving is not assumed to be required for the 350 Eighth Street project. The largest of typical construction equipment, such as a clam shovel, could be used as close as 40 feet from the existing residential uses during construction. Vibration levels at the nearest sensitive receptor would be about 0.10 PPV and 88 RMS from a clam shovel. Other sensitive receptors in the 350 Eighth Street project vicinity would be exposed to vibration levels at incrementally lower levels. Similarly, smaller pieces of equipment, such as a small bulldozer, would generate lower vibration levels. Only the largest pieces of equipment would result in RMS levels exceeding annoyance levels. Construction activities would generate groundborne vibration levels that would not exceed the FTA criterion of 0.2 PPV for structural damage, but could exceed 80 RMS for human annoyance. Implementation of Mitigation Measure M-NO-2b, would reduce any impacts related to groundborne vibration to less-than-significant levels.

- **Mitigation:** Implement **Mitigation Measure M-NO-2a**, General Construction Noise Control Measures, discussed on page 4.F-24, and Mitigation Measure M-NO2b, Noise Control Measures During Pile Driving, discussed on page 4.F-25.

Significance after Mitigation: Less than Significant.

Cumulative Impacts

Impact C-NO: The implementation of the Proposed Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would contribute considerably to a significant cumulative noise impact. (Significant and Unavoidable with Mitigation)

Existing noise levels are compared to the future cumulative noise levels to give a long-term estimate of future traffic noise levels in the Project Area. As shown in Table 4.F-3, page 4.F-18, road segments along

both Harrison and Ninth Streets would experience noise increases above 3.0 dBA. The resulting noise levels would exceed 70 dBA (traffic noise on portions of Ninth Street exceeds 70 dBA under existing conditions). In addition, these noise levels would be considered generally unacceptable for residential and other sensitive uses under the *San Francisco General Plan* noise guidelines for land use compatibility. Moreover, project traffic, including the increased truck traffic resulting from the posting of truck route signs, would result in the great majority of the increase in noise levels, with the posting of truck route signs responsible for more than half the increase. For these reasons, this impact would be significant with respect to the Draft Plan. It is noted that this analysis is conservative, because, as described in Impact NO-5, it assumes a doubling of truck traffic on streets identified as truck routes (and no decrease in truck traffic elsewhere, although the modeling undertaken is specific to each roadway segment). If, for example, the increase in truck traffic were not 100 percent, but 67 percent (i.e., a two-thirds increase rather than a doubling), the cumulative impact would be less than significant. Implementation of **Mitigation Measures M-NO-1a**, Interior Noise Levels for Residential Uses, discussed on page 4.F-19; **Mitigation Measures M-NO-1b**, Siting of Noise-Sensitive Uses, discussed on page 4.F-20; **Mitigation Measure M-NO-1c**, Siting of Noise-Generating Uses, discussed on page 4.F-21; and **Mitigation Measure M-NO-1d**, Open Space in Noisy Environments, discussed on page 4.F-22, would reduce these impacts to a less than significant level.

The Rezoning of Adjacent Parcels and the 350 Eighth Street project have the potential to result in cumulative impacts with respect to contributing to a significant cumulative noise environment. However, implementation of **Mitigation Measures M-NO-1a**, Interior Noise Levels for Residential Uses, discussed on page 4.F-19; **Mitigation Measures M-NO-1b**, Siting of Noise-Sensitive Uses, discussed on page 4.F-20; **Mitigation Measure M-NO-1c**, Siting of Noise-Generating Uses, discussed on page 4.F-21; and **Mitigation Measure M-NO-1d**, Open Space in Noisy Environments, discussed on page 4.F-22 (in the case of the Draft Plan and Rezoning of Adjacent Parcels), and **Mitigation Measures M-NO-2a**, General Construction Noise Control Measures, discussed on page 4.F-24, and **Mitigation Measure M-NO-2b**, Noise Control Measures During Pile Driving, discussed on page 4.F-25 (in the case of the 350 Eighth Street project), would reduce such impacts to less than significant level and would ensure that the Rezoning of Adjacent Parcels and the 350 Eighth Street project would not contribute considerably to a significant cumulative noise impact.

Other road segments modeled would experience cumulative noise increases of less than 3 dBA. Permanent increases in ambient noise levels of less than 3 dBA are considered to be less than significant.

Mitigation: Implement the following for the Draft Plan and Rezoning of Adjacent Parcels: **Mitigation Measures M-NO-1a**, Interior Noise Levels for Residential Uses, discussed on page 4.F-19; **Mitigation Measures M-NO-1b**, Siting of Noise-Sensitive Uses, discussed on page 4.F-20; **Mitigation Measure M-NO-1c**, Siting of Noise-Generating Uses, discussed on page 4.F-21; and **Mitigation Measure M-NO-1d**, Open Space in Noisy Environments, discussed on page 4.F-22. Implement the following for the 350 Eighth Street project: **Mitigation Measures M-NO-2a**, General Construction Noise Control Measures, discussed on page 4.F-24, and **Mitigation Measure M-NO-2b**, Noise Control Measures During Pile Driving, discussed on page 4.F-25.

Implementation of the above mitigation measures would reduce cumulative impacts to a less-than-significant level for new sensitive receptors in the Project Area. However, existing receptors could be subject to significant impacts due to increased traffic noise, including truck traffic, and this impact would be significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

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4.G. Air Quality

This section addresses air quality impacts that could result from implementation of the *Western SoMa Community Plan*, the Rezoning of Adjacent Parcels, and the 350 Eighth Street project. The analysis estimates potential increases in criteria air pollutants that would be associated with project implementation, as well as health effects from emissions of toxic air contaminants and odor impacts.

Environmental Setting

The Draft Plan Area, the Adjacent Parcels, and the 350 Eighth Street project site (together, the Project Area) are within the San Francisco Bay Area Air Basin (Air Basin), 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. The Bay Area Air Quality Management District (BAAQMD) is the regional agency responsible for air quality planning in the Air Basin.

Ambient Air Quality - Criteria Air Pollutants

As required by the 1970 federal Clean Air Act, the United States Environmental Protection Agency (EPA) has 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 refers to these pollutants as criteria air pollutants because the agency has regulated them by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. Ozone, carbon monoxide (CO), particulate matter, nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead are the six criteria air pollutants.

The BAAQMD's air quality monitoring network provides information on ambient concentrations of criteria air pollutants at various locations in the San Francisco Bay Area. The District selects monitoring sites "based on population exposure and ... locations with the highest expected concentrations" of regional gaseous pollutants such as ozone, CO, and oxides of nitrogen (NO_x, which includes NO₂ and nitrogen monoxide, or NO). Some monitoring sites, particularly for industrial emissions such as SO₂, hydrogen sulfide, and hydrocarbons, are placed near sources of such pollutants. Particulate matter and toxic air contaminants (see discussion on page 4.G-5, below) have a regional aspect but are also emitted by certain individual sources; monitoring sites for these pollutants "are sited to provide regional coverage and/or located near potential sources."¹ **Table 4.G-1**, on the following page, is a five-year summary of the highest annual criteria air pollutant concentrations (2006 to 2010), collected at the BAAQMD's air quality monitoring station at 10 Arkansas Street in San Francisco, which is located approximately one mile southeast of the Project Area.² The table compares measured pollutant concentrations with the most stringent applicable ambient air quality standards (state or federal).

¹ BAAQMD, "District Air Monitor Sites" webpage, http://hank.baaqmd.gov/tec/maps/dam_sites.htm. Accessed May 24, 2012.

² Data from this single location does not describe pollutant levels throughout San Francisco, as these levels may vary depending on distance from key emissions sources and local meteorology. However, the BAAQMD monitoring network does provide a reliable picture of pollutant levels over time.

**TABLE 4.G-1
SUMMARY OF SAN FRANCISCO AIR QUALITY MONITORING DATA (2007–2011)**

Pollutant	Most Stringent Applicable Standard	Number of Days Standards were Exceeded and Maximum Concentrations Measured				
		2007	2008	2009	2010	2011
Ozone						
- Days 1-Hour Standard Exceeded	9 pphm ^a	0	0	0	0	0
- Max. 1-Hour Concentration (pphm)		6.0	8.2	7.2	7.9	7.0
- Days 8-Hour Standard Exceeded	7 pphm ^a	0	0	0	0	0
- Max. 8-Hour Concentration (pphm)		5.3	6.6	5.7	5.1	5.4
Carbon Monoxide (CO)						
- Days 1-Hour Standard Exceeded	20 ppm ^a	0	0	0	0	0
- Max. 1-Hour Concentration (ppm)		0.6	0.8	0.7	0.8	0.7
- Days 8-Hour Standard Exceeded	9 ppm ^a	0	0	0	0	0
- Max. 8-Hour Concentration (ppm)		1.6	2.3	2.9	1.4	1.2
Suspended Particulates (PM₁₀)						
- Days 24-Hour Standard Exceeded ^c	50 µg/m ³ ^a	2	0	0	0	NA
- Max. 24-Hour Concentration (µg/m ³)		70	41	36	40	46
- Annual Average (µg/m ³)	20 µg/m ³ ^a	21.8	21.9	18.6	19.3 ^d	19.5
Suspended Particulates (PM_{2.5})						
- Days 24-Hour Standard Exceeded	35 µg/m ³ ^b	5	0	1	3	2
- Max. 24-Hour Concentration (µg/m ³)		45.2	29.4	35.5	45.3	47.5
- Annual Average (µg/m ³)	12 µg/m ³ ^a	10	12	12	10.5 ^d	9.5 ^d
Nitrogen Dioxide (NO₂)						
- Days 1-Hour Standard Exceeded	10pphm ^{b,e}	0	0	0	0	0
- Max. 1-Hour Concentration (pphm)		6.9	6.2	5.9	9.3	9.3
- Annual Average (µg/m ³)	3 pphm ^a	1.6	1.6	1.5	1.3	1.4
Sulfur Dioxide (SO₂)						
- Days 24-Hour Standard Exceeded	40 ppb ^a	0	0	NA	NA	NA
- Max. 24-Hour Concentration (ppb)		6	4	NA	NA	NA

NOTES: **Bold** values are in excess of applicable standard. "NA" indicates that data is not available.

ppm = parts per million; pphm = parts per hundred million; ppb=parts per billion;

µg/m³ = micrograms per cubic meter

^a State standard, not to be exceeded.

^b Federal standard, not to be exceeded.

^c Based on a sampling schedule of one out of every six days, for a total of approximately 60 samples per year.

^d Annual average based on federal method; state average not available.

^e The U.S. Environmental Protection Agency in 2010 adopted a new one-hour standard of 100 parts per billion, or 10 pphm.

SOURCE: California Air Resources Board data for Arkansas Street monitoring station, San Francisco. <http://www.arb.ca.gov/adam/topfour/topfour1.php>

Ozone

Ozone is not directly emitted by motor vehicles or other sources of pollution, but rather is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving ROG and NOx. The main sources of ROG and NOx, often referred to as ozone precursors, are combustion

processes (including 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 4.G-1, above, shows that, according to published data, the most stringent applicable standards (state 1-hour standard of 9 parts per hundred million (pphm) and the federal 8-hour standard of 8 pphm) were not exceeded in San Francisco between 2007 and 2011.

Carbon Monoxide (CO)

CO is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles; the highest emissions occur during low travel speeds, stop-and-go driving, cold starts, and hard acceleration. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue, impair central nervous system function, and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal. As shown in Table 4.G-1, page 4.G-2, no exceedances of state CO standards were recorded between 2007 and 2011. Measurements of CO indicate maximum 8-hour CO levels of no more than 35 percent of the allowable 8-hour standard. According to the BAAQMD, CO emissions have decreased dramatically since the introduction of the catalytic converter in 1975, and there have been no local exceedances of state or federal standards since 1991.³

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 manmade and natural sources. Particulate matter is typically 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 half of the Air Basin's particulates, through tailpipe emissions as well as brake pad and tire wear. Wood burning in fireplaces and stoves, industrial facilities, and ground-disturbing activities such as construction, as well as demolition and agricultural activities, are other sources of fine particulates. PM₁₀ and PM_{2.5} are small enough to be inhaled into the deepest parts of the human lung and can cause adverse health effects. PM_{2.5} poses an increased health risk because the particles can deposit deep in the lungs and may contain substances that are particularly harmful to human health. These fine particulates are strongly associated with premature deaths, respiratory diseases and reduced lung development in children, hospital admissions, and cardiopulmonary disease.⁴

Among the criteria pollutants that are regulated, particulates represent a serious ongoing health hazard. As long ago as 1999, the BAAQMD was reporting, in its *CEQA Air Quality Guidelines* published that year,

³ BAAQMD, *CEQA Air Quality Guidelines*, May 2012. This document is available online at: http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en, accessed on June 14, 2012; p. 6-1.

⁴ Bhatia, Rajiv and Thomas Rivard, San Francisco Department of Public Health, Occupational & Environmental Health Section, Program on Health, Equity, & Sustainability, "Assessment and Mitigation of Air Pollutant Health Effects from Intra-urban Roadways: Guidance for Land Use Planning and Environmental Review," p. 5, May 6, 2008. Available online at: <http://www.sfdph.org/dph/files/EHSDocs/AirQuality/MitigateRoadAQLUConflicts.pdf>, accessed on April 19, 2012. This document is also available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2007.0558E.

that studies had shown that elevated particulate levels contribute to the death of approximately 200 to 500 people per year in the Bay Area.⁵ High levels of particulates have also been known to exacerbate chronic respiratory ailments, such as bronchitis and asthma, and have been associated with increased emergency room visits and hospital admissions. Current evidence suggests that PM_{2.5} “is by far the most harmful air pollutant in [the Bay Area] in terms of the associated impact on public health.”⁶

Table 4.G-1 shows that exceedances of the state PM₁₀ standard have not occurred in San Francisco since 2007. The state 24-hour PM₁₀ standard of 50 micrograms per cubic meter is estimated to have been exceeded on up to 12 days in 2007, although no exceedances were recorded from 2008 through 2011.⁷ The BAAQMD began monitoring PM_{2.5} concentrations in San Francisco in 2002. The federal 24-hour PM_{2.5} standard of 35 micrograms per cubic meter was exceeded on five days in 2007, one day in 2009, and three days in 2011. The state annual average standard (12 micrograms per cubic meter) was not exceeded between 2007 and 2011.

Nitrogen Dioxide (NO₂)

NO₂ is a reddish brown gas that is a byproduct of combustion processes. NO₂ irritates the lungs and can cause breathing difficulties at high concentrations. According to the EPA, scientific evidence links short-term NO₂ exposures ranging from 30 minutes to 24 hours with adverse respiratory effects including increased asthma symptoms, respiratory illness, more difficulty controlling asthma, and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly for at risk populations, including children, the elderly, and asthmatics. NO₂ and other oxides of nitrogen are major contributors to the formation of ozone, and NO₂ also contributes to PM₁₀ levels. Automobiles and industrial operations are the main sources of NO₂, and concentrations of NO₂ near major roads are appreciably higher than those measured at monitors in the current regional monitoring network. NO₂ may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. The state standard for NO₂ is being met in the Bay Area, and pollutant trends suggest that the air basin will continue to meet these standards for the foreseeable future. In 2010, EPA established a new national 1-hour standard of 100 parts per billion, or 10 parts per hundred million (10 pphm), as indicated in Table 4.G-1. Currently, the California Air Resources Board (ARB) is recommending that the San Francisco Bay Area Air Basin be designated as attainment for the new federal standard.

Sulfur Dioxide (SO₂)

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

⁵ BAAQMD, CEQA Air Quality Guidelines, November 2009. This document is available online at: http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/Final_Draft_BAAQMD_CEQA_Guidelines_November_12_2009.ashx?la=en, accessed on April 21, 2012. This document has been superseded by the document referenced in Footnote 2, above.

⁶ BAAQMD, CEQA Air Quality Guidelines, May 2012. This document is available online at: http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en, accessed on June 14, 2012 p. 5-2.

⁷ PM concentrations are measured every six days, or approximately 60 days per year. Therefore, the number of exceedances can be estimated to be up to six times the number of recorded exceedances.

disease.⁸ The standard for SO₂ is being met in the Bay Area, and pollutant trends suggest that the air basin will continue to meet these standards for the foreseeable future. SO₂ has not been measured at the Arkansas Street station since 2008.

In 2010, the EPA implemented a new 1-hour SO₂ standard. The EPA anticipates initially designating areas based on 2008 – 2010 monitoring data, or refined dispersion modeling results if provided by the state by June 2012. Similar to the new federal standard for NO₂, the EPA has established requirements for a new monitoring network to measure SO₂ concentrations to be operational by January 2013. The new monitoring data may result in a need to change area designations in the future.

Lead

Leaded gasoline (phased out in the United States beginning in 1973), paint (on older houses, 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; children are at special risk. Some lead-containing chemicals cause cancer in animals. Lead levels in the air have decreased substantially since leaded gasoline was eliminated. Ambient lead concentrations are only monitored on an as-warranted, site-specific basis in California. In 2008, the EPA strengthened the national ambient air quality standard for lead by lowering it from 1.5 micrograms per cubic meter to 0.15 micrograms per cubic meter. The EPA revised the monitoring requirements for lead in December 2010. These requirements focus on airports and large urban areas, resulting in an increase of 76 monitors nationally.

Toxic Air Contaminants

Toxic air contaminants (TACs) are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

TACs are emitted from a variety of sources. Mobile source TACs are known or suspected to cause cancer or other serious health or environmental effects. Engine exhaust from diesel, gasoline, and other combustion engines, is a complex mixture of particles and gases, with collective and individual toxicological characteristics. Vehicle tailpipe emissions includes criteria air pollutants such as particulate matter and carbon monoxide, ozone precursor compounds such as NO_x and other hazardous air pollutants (e.g., TACs). The EPA has identified seven priority mobile source TACs, including benzene, 1,3-butadiene, formaldehyde, acetaldehyde, acrolein, naphthalene, and diesel exhaust. Similarly, the ARB has identified 10 TACs of concern, five of which are emitted by on-road mobile sources: benzene, 1,3-butadiene, formaldehyde, acetaldehyde, and diesel exhaust particulate matter. Benzene is of particular concern because it is a known carcinogen and most of the nation's benzene emissions come from mobile sources. Other sources of TACs generating health risks and hazards include gas stations, stationary diesel engines (i.e., backup generators), dry cleaners, crematories, spray booths, diesel-fueled

⁸ BAAQMD, *CEQA Air Quality Guidelines*, May 2012. This document is available online at: http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en, accessed on June 14, 2012; p. C-16.

railroads, major ports, rail yards, airports, oil refineries, power plants, and cement plants.⁹ Diesel particulate matter (DPM), which is emitted in diesel engine exhaust, was identified as a TAC by ARB in 1998, based on evidence demonstrating cancer effects in humans.¹⁰ The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Unlike TACs emitted from industrial and other stationary sources noted above, most DPM is emitted from mobile sources—primarily “off-road” sources such as construction and mining equipment, agricultural equipment, and truck-mounted refrigeration units, as well as trucks and buses traveling on freeways and local roadways. Agricultural and mining equipment are not relevant to San Francisco, while construction equipment typically operates for a limited time at changeable locations.

In addition to monitoring criteria pollutants, both the BAAQMD and ARB operate TAC monitoring networks in the San Francisco Bay Area. These stations measure 10 to 15 TACs, depending on the 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 significant risk. The BAAQMD operates an ambient TAC monitoring station at its Arkansas Street facility in San Francisco. 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 Bay Area as a whole.¹¹

TACs do not have ambient air quality standards, but are regulated by the BAAQMD using a risk-based approach. This approach uses a health risk assessment to determine what sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated, and considered together with information regarding the toxic potency of the substances, to provide quantitative estimates of health risks.¹²

TAC modeling determined that northeastern San Francisco, including much of the Project Area, has the highest annual DPM concentrations in the Bay Area.¹³ Of the estimated annual DPM concentration of 18.3 micrograms per cubic meter, almost 93 percent of the DPM exposure was attributable to transportation sources. Because of variations in source locations and localized atmospheric mixing, this annual DPM concentration for northeastern San Francisco represents a general indication of DPM exposure potential and is not necessarily indicative of DPM concentrations in any particular location of the Project Area.

In the Project Area, the primary source of TACs, including DPM, is on-road mobile sources (vehicles traveling on freeways and local roadways). Another major source of emissions in the Project area is

⁹ BAAQMD, *Recommended Methods for Screening and Modeling Local Risks and Hazards*, May 2011, p. 11.

¹⁰ California Air Resources Board, Fact Sheet, “The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines,” October 1998. This document is available online at <http://www.arb.ca.gov/toxics/dieseltac/factsht1.pdf>, accessed on February 27, 2012. This document is also available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2004.0093E.

¹¹ BAAQMD, Toxic Air Contaminant Control Program, Annual Report 2003, Volume I and Appendix B-3. August 2007.

¹² 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, then the applicant is subject to a health risk assessment for the source in question. Such an assessment generally evaluates chronic, long-term effects, calculating the increased risk of cancer as a result of exposure to one or more TACs.

¹³ Environ International Corp., *Demonstration Toxics Modeling for the Bay Area Using CAMx*, February 14, 2008. The grid resolution was 2 km x 2 km such that localized variations could not be determined.

diesel-powered Caltrain locomotives, which operate on tracks south of Townsend Street. Unlike stationary sources such as those noted above, both motor vehicles and Caltrain locomotives are considered non-permitted sources, in that no permit is required from the BAAQMD. Such mobile sources are regulated by EPA and ARB through engine manufacturing requirements for emission limits. As a result, the readily identifiable locations where DPM is emitted in the Project Area include high-traffic roadways and other areas with substantial truck and bus traffic. Therefore, DPM is discussed further under “Roadway-Related Health Effects,” page 4.G-8, below.

Other non-permitted sources (not necessarily in the Project Area) include hauling establishments and distribution centers where large concentrations of diesel trucks operate, and transit centers with heavy diesel bus traffic. Another non-permitted source of TACs in the Project Area is the existing Golden Gate Transit storage lot at Eighth and Harrison Streets (although this facility is planned for relocation outside the Project Area in connection with the new Transit Center currently under construction). Additionally, temporary emissions of DPM are associated with construction activities, notably building demolition and site excavation and grading, as off-road diesel equipment is prevalent in both of these phases of construction work.

There are more than 35 individual permitted sources of TACs in the Project Area. These sources primarily comprise gasoline stations, auto repair shops, natural-gas-fired boilers for building heating, and diesel-powered emergency (standby) generators, which are installed in critical facilities such as the Hall of Justice and County Jail on Bryant Street and Fire Station No. 8 on Bluxome Street. These “stationary sources” of pollutants require a permit from the BAAQMD; under existing regulations, a permit for a new stationary source is generally not issued unless the facility (including multiple stationary sources per facility) would emit TACs that are estimated to result in an excess lifetime cancer risk of less than 10 in 1 million (i.e., 10 cases per 1 million exposed persons, or “receptors”). Older generators, however, may continue to operate even if they have greater emissions. (For purposes of BAAQMD permitting, backup generator emissions are those emitted during routine testing, which typically involves operating the generator no more than 50 hours per year. Emissions during power failures or other “emergencies” are not subject to permit requirements.) Other common sources of TACs in an urban setting include dry cleaners that produce TACs as a byproduct of the cleaning process.¹⁴ However, no dry cleaning establishments permitted to operate a cleaning plant on-site is present in the Project Area.

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

¹⁴ Perchloroethylene (“Perc”), long the common dry cleaning solvent, is being phased out in the Bay Area. As of 2010, Perc may no longer be used once the cleaning equipment reaches 15 years of age; all Perc use will be banned by 2023.

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 the 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 Project Area are described in detail in Section 4.A, Land Use. Residential uses occur in the Project Area, with most located in the northern portion of the Project Area. Licensed child care centers in the Project Area include facilities at 1419 Howard Street, between 10th and 11th Streets, and at 685 Natoma Street, near Eighth Street. Facilities just outside the Project Area are located at 375 Seventh Street (in the Bessie Carmichael Elementary School); at Yerba Buena Gardens at Folsom and Fourth Streets; in the Federal Building at Seventh and Mission Streets; and at 1330 Stevenson Street (about two blocks west of the Project Area). Additional sensitive land uses in the Project Area are also in the immediate vicinity of the proposed 350 Eighth Street project site. These include the nearest residential receptors, in the Iron Works condominiums at 1221 Harrison Street, across Harrison from the 350 Eighth Street project site. The licensed child-care facility closest to the 350 Eighth Street project site is the Salvation Army Harbor House Childcare Center, also across Harrison Street, at 407 Ninth Street.

Roadway-Related Health Effects

Both criteria pollutants and TACs can result in adverse health impacts. Among criteria pollutants, fine particulate (PM_{2.5}) is of greatest concern. According to the BAAQMD, "A large body of scientific evidence indicates that both long-term and short-term exposure to PM_{2.5} can cause a wide range of health effects (e.g., aggravating asthma and bronchitis, causing visits to the hospital for respiratory and cardiovascular symptoms, and contributing to heart attacks and deaths). According to the San Francisco Department of Public Health, epidemiological research indicates that a concentration of 0.2 micrograms per cubic meter of PM_{2.5} can result in an approximately 0.28 percent increase in non-injury mortality, or an increase of approximately 21 "excess deaths" per year (e.g., deaths that would occur sooner than otherwise expected) per 1 million population in San Francisco.¹⁵⁻¹⁶

Epidemiologic studies have consistently demonstrated that children and adults 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 done in conjunction with epidemiological studies has confirmed that roadway-related health effects vary with modeled exposure to particulate matter and nitrogen dioxide. At this

¹⁵ "Excess deaths" (also referred to as premature mortality) refer to deaths that occur sooner than otherwise expected, absent the specific condition under evaluation; in this case, exposure to PM_{2.5}.

¹⁶ Bhatia, Rajiv, and Thomas Rivard, "Assessment and Mitigation of Air Pollutant Health Effects ..." (see note 4, p. 4.G-2).

time, it is not possible to attribute roadway-related health effects to a single type of roadway, vehicle, or type of fuel. Vehicle tailpipe emissions contain diverse forms of particulate matter as well as ozone precursor compounds such as NO_x and volatile organic compounds (VOC). Vehicles also contribute to particulates by generating road dust and through tire wear.

Air pollution studies have shown an association between respiratory and other non-cancer health effects and proximity to high traffic roadways. ARB community health risk assessments and regulatory programs have produced air quality information for consideration by local authorities when siting new residences, schools, day care centers, and medical facilities (i.e., sensitive land uses).¹⁷ Sensitive land uses deserve special attention because children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the non-cancer effects of air pollution. There is also substantial evidence that children are more sensitive to cancer-causing chemicals.¹⁸

In 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.¹⁹ California freeway studies show about a 70 percent drop-off in particulate matter concentrations at 500 feet from the roadway. Therefore, ARB recommends that new sensitive land uses (e.g., residences, schools, daycare centers, and medical facilities) not be located within 500 feet of a freeway or urban roads carrying 100,000 vehicles per day. This recommendation is put forth to minimize potential non-cancer health effects of exposure to pollutants known to increase incidence of asthma and other respiratory ailments, particularly fine particulates, as well as cancer risk from exposure to diesel particulates from truck and bus exhaust (discussed below) and benzene and 1,3-butadiene from automobile exhaust.

ARB notes that these recommendations are advisory and should not be interpreted as defined “buffer zones.” ARB acknowledges that land use agencies must balance other considerations, including housing and transportation needs, with the benefits of urban infill, community economic development priorities, and other quality of life issues. With careful evaluation of exposure, health risks, and affirmative steps to reduce risk where necessary, ARB’s position is that infill development, mixed-use, higher density, transit-oriented development, and other concepts that benefit regional air quality can be compatible with protecting the health of individuals at the neighborhood level.²⁰

The closest freeway to the Project Area is the elevated I-80 freeway, which runs through the Project Area, between Harrison and Bryant Streets, from Fourth to Eighth Streets. Surface streets in the Project Area also carry high volumes of traffic that can generate substantial levels of pollutants, including PM_{2.5}. Modeling conducted by the Department of Public Health reveals relatively high levels of PM_{2.5} along major roadways in the City, including I-80 and the major streets (i.e., excluding mid-block alleys) in the Project Area.

¹⁷ Parks and playgrounds are not normally considered sensitive receptors because of the lack of long-term exposure and active uses.

¹⁸ California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005. Available online at: <http://www.arb.ca.gov/ch/handbook.pdf>, accessed on April 19, 2012.

¹⁹ *Ibid.*, p. 6.

²⁰ *Ibid.*

Diesel Particulate Matter and Other Organic Gases

Diesel exhaust is a TAC that is of concern throughout California. Many of the toxic compounds found in diesel exhaust adhere to the diesel particles, which are very small and can penetrate deeply into the lungs. Mobile sources such as trucks, buses, and, to a much lesser extent, automobiles are some of the primary sources of diesel emissions. Studies show that DPM concentrations are much higher near heavily traveled highways and intersections. DPM is the TAC most relevant to the Project Area because of the relatively high levels of truck traffic in the Project Area and the presence of the elevated I-80 freeway, as well as the presence of diesel-powered locomotives, which operate at the Caltrain station and on the Caltrain tracks, across Townsend Street from the Project Area.

The estimated cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other toxic air pollutant routinely measured in the region. ARB estimated the average Bay Area cancer risk from DPM, based on a population-weighted average ambient DPM concentration, at about 480 in 1 million, as of 2000. The risk from DPM has declined from 750 in 1 million in 1990 and 570 in 1 million in 1995. ARB estimated the average statewide cancer risk from DPM at 540 in 1 million in 2000.^{21,22} Other studies have shown that diesel exhaust and other cancer-causing chemicals emitted from cars and trucks are responsible for much of the cumulative cancer risk from airborne toxics in California. Diesel exhaust also contains pulmonary irritants and hazardous compounds that could result in non-cancer health effects to sensitive receptors such as young children, senior citizens, or those susceptible to chronic respiratory disease such as asthma, bronchitis, and emphysema.

In 2000, ARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. The plan aims to develop and implement specific statewide regulations designed to reduce DPM emissions and the associated health risk 85 percent by 2020. In addition to implementing more stringent engine controls (diesel engines produced today have one-eighth the tailpipe exhausts of a truck or bus built in 1990), diesel fuel is required to have lower sulfur levels. As of June 1, 2006, at least 80 percent of on-road diesel fuel refined in the United States must be ultra-low sulfur diesel, which reduces sulfur emissions by 97 percent. All of the diesel fuel sold in California for use with on-road trucks is now ultra-low sulfur diesel.

Despite these dramatic reductions in emission rates, reducing DPM emissions will take time since older trucks will need to be retrofitted or phased out as part of fleet turnover. While these efforts are reducing DPM emissions on a statewide basis, they do not yet capture every site where diesel vehicles and engines operate.

Beyond DPM, other TACs emitted by non-diesel vehicles result in similar health risks, and EPA and/or ARB have developed specific risk factors for most TACs. These risk factors are used when modeling health risk. The BAAQMD recommends that DPM and other organic gases be evaluated when conducting health risk assessments to evaluate risk from traffic-generated pollutants.

²¹ ARB, *California Almanac of Emissions and Air Quality - 2009 Edition*, Table 5-44 and Figure 5-14. Available online at: <http://www.arb.ca.gov/Aqd/almanac/almanac.htm>, accessed on April 28, 2011.

²² This calculated cancer risk values from ambient air exposure in the Bay Area can be compared against the lifetime probability of being diagnosed with cancer in the United States, from all causes, which is more than 40 percent (based on a sampling of 17 regions nationwide), or greater than 400,000 in 1 million, according to the National Cancer Institute.

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 coffee roasters and auto body shops with spray booths, none of these uses exist in the Project Area. A review of odor complaints with the BAAQMD revealed little in the way of complaint activity in the Draft Plan Area or on the Adjacent Parcels over the three years prior to 2012: of 14 potential sources, BAAQMD records indicated receipt of two complaints, neither verified (both from auto body shops).²³

Regulatory Setting

Federal Ambient Air Quality Standards

The 1970 Clean Air Act (last amended in 1990, 42 United States Code [USC] 7401 et seq.) required that regional planning and air pollution control agencies prepare a regional air quality plan to outline the measures by which both stationary and mobile sources of pollutants will be controlled in order to achieve all standards by the deadlines specified in the Clean Air Act. The 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, known as sensitive receptors, including asthmatics, the very young, the elderly, people weak from other illness or disease, persons engaged in strenuous work or exercise, and residential areas, where people spend longer periods of time. Healthy adults can tolerate occasional exposure to air pollution levels that are somewhat above the ambient air quality standards before adverse health effects are observed.

The current attainment status for the Air Basin with respect to federal standards is summarized in **Table 4.G-2**, on the following page. In general, the Air Basin experiences low concentrations of most pollutants when compared to federal standards, except for ozone and particulate matter (both PM₁₀ and PM_{2.5}), for which standards are exceeded periodically. The Air Basin's attainment status for ozone has changed several times over the past decade, but the Basin is now designated "nonattainment" for the 1-hour federal ozone standard. The Air Basin is also designated "nonattainment" for the federal PM_{2.5} standard and "unclassified" for the federal PM₁₀ standard. The Air Basin is designated "attainment" for other criteria pollutants and "unclassified" with respect to hydrogen sulfide and visibility-reducing particles.

²³ BAAQMD response to public records request by ESA, received May 1 and May 2, 2012. This information is available at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2008.0877E.

**TABLE 4.G-2
STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS**

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	N	0.075 ppm	N ^d
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	0.1 ppm	U
	Annual	0.030 ppm	NA	0.053 ppm	A
Sulfur Dioxide (SO ₂)	1 hour	0.25 ppm	A	0.075	NA
	24 hour	0.04 ppm	A	0.14 ppm	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	N	NA	NA
Fine Particulate Matter (PM _{2.5})	24 hour	NA	NA	35 µg/m ³	N ^f
	Annual	12 µg/m ³	N	15 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
	Calendar qtr.	NA	NA	1.5 µg/m ³	A
	3-mo. average	NA	NA	0.15 µg/m ³	A
Hydrogen Sulfide	1 hour	0.03 ppm	U	NA	NA
Visibility-Reducing Particles	8 hour	See Note g	U	NA	NA

NOTES: A = Attainment; N = Nonattainment; U = Unclassified; NA = Not Applicable, no applicable standard; ppm = parts per million; µg/m³ = micrograms per cubic meter.

^a 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.

^b NAAQS = national ambient air quality standards. NAAQS, other than ozone, nitrogen dioxide, sulfur dioxide, 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 1-hour NO₂ standard and the 1-hour SO₂ standards are attained when the three-year average of the 98th percentile of the daily maximum 1-hour average at each monitor in an does not exceed the standard. 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.

^c The EPA revoked the national 1-hour ozone standard on June 15, 2005.

^d The EPA is anticipated to issue designations based on this standard in 2012, at which point it is expected that the Bay Area Air Basin will be designated as nonattainment.

^e State standard = annual geometric mean.

^f The EPA lowered the 24-hour PM_{2.5} standard from 65 µg/m³ to 35 µg/m³ in 2006. Effective in December 2009, EPA designated the Bay Area as nonattainment for the 35 µg/m³ PM_{2.5} standard. A State Implementation Plan for achievement of the federal standard must be submitted to EPA by December 14, 2012.

^g Statewide visibility-reducing particle standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

SOURCE: Bay Area Air Quality Management District (BAAQMD), Standards and Attainment Status. Available online at: http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm, accessed on January 15, 2010.

State Ambient Air Quality Standards

Although the federal Clean Air Act established national ambient air quality standards, individual states retained the option to adopt more stringent standards and to include other pollution sources. California had already established its own air quality standards by the time that federal standards were established, and because of the unique meteorological conditions in California, there are some differences between the state and national ambient air quality standards, as shown in Table 4.G-2, page 4.G-12. 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 4.G-2, page 4.G-12, the Bay Area Air Basin is designated as “nonattainment” for state ozone, PM₁₀, and PM_{2.5} standards. The Bay Area Air Basin is designated as “attainment” for all other pollutants listed in the table.

California Air Resources Board

ARB is the state agency responsible for regulating air quality. ARB’s responsibilities include establishing state ambient air quality standards, emissions standards, and regulations for mobile emissions sources (e.g., autos, trucks, etc.), as well as overseeing the efforts of countywide and multi-county air pollution control districts, such as the BAAQMD, which have primary responsibility over stationary sources.

Bay Area Air Quality Management District

The BAAQMD regulates air quality through its planning and review activities. The district has permit authority over most types of stationary emission sources and can require stationary sources to obtain permits; it can also impose emission limits, set fuel or material specifications, or establish operational limits to reduce air emissions. The BAAQMD regulates new or expanding stationary sources of TACs. However, the district has no direct regulatory authority over mobile sources (e.g., cars and trucks).

Air Quality Plans to Achieve Compliance with State and Federal Standards

Air quality plans developed to meet federal requirements are referred to as State Implementation Plans. The federal Clean Air Act and the California Clean Air Act require plans to be developed for areas designated as nonattainment (with the exception of areas designated as nonattainment for the State particulate matter standards, for which plans are not required by California Code of Regulations). In September 2010, the BAAQMD adopted the *2010 Bay Area Clean Air Plan*, which updated the *2005 Ozone Strategy*, and also functions as a “multi-pollutant plan to protect public health and the climate.”²⁴ This plan includes ozone control measures and also considers the impacts of these control measures on particulate matter, TACs, and greenhouse gas emissions (GHGs) in a single, integrated plan.

²⁴ BAAQMD, *2010 Clean Air Plan*, September 2010. Available on the internet at: <http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/Clean-Air-Plans.aspx>.

The 2010 *Clean Air Plan* explains how the basin will achieve compliance with the state 1-hour air quality standard for ozone as expeditiously as practicable and how the region will reduce transport of ozone and ozone precursors to neighboring air basins. The strategy also discusses related air quality issues of interest including the BAAQMD's public involvement process, climate change, fine particulate matter, the BAAQMD's Community Air Risk Evaluation program, local benefits of ozone control measures, the environmental review process, national ozone standards, and photochemical modeling.

In terms of federal ozone standards, the EPA revoked the 1-hour national standard in 2005. The current 8-hour national standard, adopted in 2008, is 0.075 ppm, or just above the state 8-hour standard of 0.07 ppm. EPA is considering reducing the federal standard, potentially to between 0.06 to 0.07 ppm, and the Bay Area will likely be designated as nonattainment if this new standard is adopted, as the Air Basin does not attain the 0.07 ppm state standard.

Local Policies and Ordinances

San Francisco General Plan Air Quality Element

The Air Quality Element of the *San Francisco General Plan* is composed of six sections, each of which focuses on different aspects of air quality improvement efforts. They are (1) adherence to air quality standards, (2) improvements related to mobile sources, (3) land use planning, (4) public awareness, (5) reduction of dust, and (6) energy conservation. The overarching 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." Objectives in the Air Quality Element include (1) Adhere to state and federal air quality standards and regional programs; (2) Reduce mobile sources of air pollution through implementation of the transportation element of the general plan; (3) Decrease the air quality impacts of development by coordination of land use and transportation decisions; (4) Improve air quality by increasing public awareness regarding the negative health effects of pollutants generated by stationary and mobile sources; (5) Minimize particulate matter emissions from road and construction sites; and (6) Link the positive effects of energy conservation and waste management to emission reductions. The Air Quality Element also references objectives and policies from other *General Plan* elements. No express conflict with policies of the Air Quality Element was identified in Chapter 3, Plans and Policies.

San Francisco Dust Control Ordinance

San Francisco Health Code Article 22B and *San Francisco Building Code* Section 106.A.3.2.6, collectively the Construction Dust Control Ordinance, require 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). 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.

The project sponsor and the contractor responsible for construction activities at the project site shall use the following practices to control construction dust on the site or other practices that result in equivalent dust control that are acceptable to the Director of DBI. Dust suppression activities may include watering all

active construction areas sufficiently to prevent dust from becoming airborne; increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water must be used if required by Article 21, Section 1100 et seq. of the San Francisco Public Works Code. If not required, reclaimed water should be used whenever possible. Contractors shall provide as much water as necessary to control dust (without creating runoff in any area of land clearing, and/or earth movement). During excavation and dirt-moving activities, contractors shall wet sweep or vacuum the streets, sidewalks, paths and intersections where work is in progress at the end of the workday. Inactive stockpiles (where no disturbance occurs for more than seven days) greater than 10 cubic yards or 500 square feet of excavated materials, backfill material, import material, gravel, sand, road base, and soil shall be covered with a 10-millimeter (0.01-inch) polyethylene plastic (or equivalent) tarp, braced down, or use other equivalent soil stabilization techniques. Additionally, contractors shall use dust enclosures, curtains, and dust collectors as necessary to control dust in the excavation area.

For project sites greater than one-half acre in size, the ordinance requires that the project sponsor submit a Dust Control Plan for approval by the San Francisco Health Department. DBI will not issue a building permit without written notification from the Director of Public Health that the applicant has a site-specific Dust Control Plan, unless the Director waives the requirement. Interior-only tenant improvements, even if over one-half acre, that will not produce exterior visible dust are exempt from the site-specific Dust Control Plan requirement.

Toxic Air Contaminant (TAC) Regulations

State Regulations

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, which altered five sections of Title 13 of the California Code of Regulations. The relevant changes are Sections 2480 and 2485, which 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.²⁵ Buses or vehicles also must turn off their engines upon stopping at a school and must not turn their engines on more than 30 seconds before beginning to depart from a school. Additionally, state law prohibits locating public schools within 500 feet of a freeway or busy traffic corridor.

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 federal (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 previous emissions standards (Tier 2 or Tier 3, depending on the

²⁵ There are 12 exceptions to this requirement (e.g., emergency situations, military, adverse weather conditions, etc.), including when a vehicle's power takeoff is being used to run pumps, blowers, or other equipment; when a vehicle is stuck in traffic, stopped at a light, or under direction of a police officer; when a vehicle is queuing beyond 100 feet from any restricted area; or when an engine is being tested, serviced, or repaired.

size of the engine²⁶) 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 early 2010, ARB suspended implementation of this aspect of the rule, and in December 2010, ARB formally delayed the start of repowering to 2014 for large fleets, 2017 for medium-sized fleets, and 2019 for small fleets.²⁷ 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 decrease by more than 75 percent.²⁸

Local Regulations and Plans

Air Quality Assessments for Urban Infill Projects

In 2008, the City and County of San Francisco adopted an ordinance (San Francisco Health Code, Article 38, Air Quality Assessment and Ventilation Requirement for Urban Infill Residential Development). Article 38 requires that public agencies in San Francisco take regulatory action to prevent future air quality health impacts on new residential uses of 10 units or more proposed near busy roadways. The regulation requires a screening analysis for new residential projects in proximity to traffic and modeling of the concentration of PM_{2.5} from traffic sources where traffic volumes suggest a potential hazard. If modeled levels of traffic-attributable PM_{2.5} at a project site exceed an action level (currently set

²⁶ 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.

²⁷ 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.

²⁸ 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 online at: <http://www.arb.ca.gov/regact/2010/offroadlsi10/offroadisr.pdf>, accessed on May 6, 2011.

at 0.2 micrograms per cubic meter), the project sponsor is required to incorporate ventilation systems, with particulate filtration if necessary, to remove 80 percent of PM_{2.5} from outdoor air. The regulation does not place any requirements on proposed residential uses if modeled air pollutant levels fall below the action level. This ordinance only considers impacts from on-road motor vehicles, not impacts related to construction equipment or stationary sources.

As described above under “Roadway-Related Health Effects,” page 4.G-8, most major streets in the Project Area have traffic volumes that could at least potentially result in a roadside concentration of PM_{2.5} that exceeds the “action level” contained in Article 38. This means that, under Article 38, nearly any subsequent development project in the Project Area that proposes to introduce 10 or more new residential units would be required to conduct dispersion modeling, based on traffic volumes on nearby streets, to determine whether the action level of 0.2 micrograms per cubic meter of PM_{2.5} would be exceeded at the project site. If the modeling shows that this level would be exceeded, an enhanced ventilation system, potentially with filtration, would be required to be incorporated into the project design. In some cases, placement of a building’s fresh-air intake at a level well above the ground (for example, on a building roof), along with installation of an enhanced ventilation system, can sufficiently reduce the PM_{2.5} for new residential receptors; under Article 38, the Department of Public Health reviews the modeling results and the ventilation system to determine its adequacy.

Article 38 requirements apply to the proposed 350 Eighth Street project, which is analyzed in this EIR at a project-specific level, because that project site is within an area mapped by the Department of Public Health as being potentially subject to traffic-generated concentrations of PM_{2.5} in excess of the Article 38 action level. Accordingly, dispersion modeling was conducted for the proposed 350 Eighth Street project, which revealed that portions of the 350 Eighth Street project site would experience PM_{2.5} concentrations greater than the 0.2 micrograms per cubic meter action level. Therefore, under Article 38, the 350 Eighth Street project would be required to incorporate into the project design measures to reduce residential exposure to traffic-generated PM_{2.5} concentrations. Article 38 requires, as part of the building permit approval process, the submittal to the Department of Public Health for review and approval of a ventilation system design, prepared by a licensed design professional that is capable of removing 80 percent of PM_{2.5} from outdoor air for all areas that exceed the action level.

Regulation of Odors

BAAQMD Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds. The limitations of this regulation limit 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.

Impacts and Mitigation Measures

Significance Criteria

In 1999, the BAAQMD adopted its *CEQA Guidelines – Assessing the Air Quality Impacts of Projects and Plans*, as a guidance document to provide lead government agencies, consultants, and project proponents with uniform procedures for assessing air quality impacts and preparing the air quality sections of environmental documents for projects subject to CEQA. These BAAQMD guidelines were revised and updated in May 2011 and May 2012, as the *BAAQMD CEQA Air Quality Guidelines*.

The 2011 *CEQA Air Quality Guidelines* is an advisory document intended to assist lead agencies in evaluating the air quality impacts of projects and plans in the Air Basin during the environmental review process.²⁹ The document describes the criteria that the BAAQMD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for use in determining whether projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts. In practice, most local agencies rely on the *BAAQMD CEQA Air Quality Guidelines* when assessing the significance of air quality impacts.

BAAQMD's adoption of the significance thresholds for CEQA air quality analysis is the subject of recent judicial actions. In a ruling dated March 5, 2012, Alameda County Superior Court Judge Frank Roesch found that, in adopting updated significance thresholds for air quality impacts, the BAAQMD violated CEQA by not first studying the potential environmental impacts of its new rules, and required that the thresholds be rescinded pending formal CEQA review.³⁰

Western SoMa Community Plan and Rezoning of Adjacent Parcels

Criteria Air Pollutants

The significance thresholds for assessment of a planning document, such as the proposed *Western SoMa Community Plan* and the *Rezoning of Adjacent Parcels*, involve an evaluation of whether:

- (1) The plan would be consistent with the control measures contained in the current regional air quality plan (the *2010 Clean Air Plan*) and would support the primary objectives of that plan and would not hinder implementation of that plan; and
- (2) The projected rate of increase in vehicle miles traveled or vehicle trips under the plan would be less than or equal to projected rate of population increase under the plan.

If the two foregoing questions can be answered in the affirmative, the Draft Plan would neither:

- Conflict with or obstruct implementation of the applicable air quality plan;

²⁹ BAAQMD, *CEQA Air Quality Guidelines*, May 2012. Available online at http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en, accessed on June 13, 2012; p 1-1.

³⁰ *California Building Industry Association v. Bay Area Air Quality Management District*, 2012. Statement of Decision. Case No. RG10-548693. Superior Court of the State of California in and for the County of Alameda.

- 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).³¹

Community Risk and Hazard Impacts

This analysis responds to the criterion that asks whether the proposed Draft Plan would:

- Expose sensitive receptors to substantial pollutant concentrations.

For plan-related health risks and hazards resulting from emissions of TACs, the BAAQMD *CEQA Air Quality Guidelines* (2011) recommend that overlay zones be established around existing and proposed land uses that emit TACs and PM_{2.5}. These overlay zones should be included in proposed plan policies, land use maps, and implementing ordinances. Additionally, the plan must “identify goals, policies, and objectives to minimize potential impacts.”³²

Odors

The Proposed Project 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. 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 1 or 2 miles, depending on use. In general, such setback distances would avoid the potential for significant odor impacts.

Proposed Transportation Improvements and 350 Eighth Street Project

For the proposed transportation improvements to be undertaken in the Draft Plan Area and for an individual development project such as the 350 Eighth Street project, the City relies on the quantitative thresholds of significance. **Table 4.G-3**, on the following page, summarizes these thresholds of significance. A discussion of each threshold is provided below.

³¹ The bulleted statements are the first three significance criteria in the City’s CEQA Initial Study checklist.

³² BAAQMD, *CEQA Air Quality Guidelines*, May 2011. Available online at <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Updated-CEQA-Guidelines.aspx>, accessed on April 19, 2012; p. 9-71.

**TABLE 4.G-3
AIR QUALITY SIGNIFICANCE THRESHOLDS**

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (pounds/day)	Average Daily Emissions (pounds/day)	Annual Average Emissions (tons/year)
Criteria Air Pollutants			
ROG	54	54	10
NO _x	54	54	10
PM ₁₀	82	82	15
PM _{2.5}	54	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards for New Sources			
Excess Cancer Risk	10 per 1 million	10 per 1 million	
Chronic or Acute Hazard Index	1.0	1.0	
Incremental annual average PM _{2.5}	0.3 µg/m ³	0.3 µg/m ³	
Health Risks and Hazards for Sensitive Receptors (Cumulative from all sources within 1,000 foot zone of influence) and Cumulative Thresholds for New Sources			
Excess Cancer Risk	100 per 1 million		
Chronic Hazard Index	10.0		
Annual Average PM _{2.5}	0.8 µg/m ³		

ppm – parts per million

µg/m³ – microgram per cubic meter

SOURCE: San Francisco Planning Department, 2012.

Ozone Precursors

As discussed previously, the Air Basin is currently designated as nonattainment for ozone and particulate matter (PM₁₀ and PM_{2.5}). The potential for a project to result in a cumulatively considerable net increase in criteria air pollutants, which may contribute to an existing or projected air quality violation, is based on the 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).³³ These levels represent emissions by which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants.

³³ BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*. October 2009; p. 17.

Although this regulation applies to new or modified stationary sources, land use development projects result in ROG and NO_x emissions as a result of increases in vehicle trips, architectural coating, and construction activities. Therefore, the above thresholds can be applied to the construction and operational phases of land use projects and those projects that result in 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 (PM₁₀ and PM_{2.5})

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.³⁴ Similar to ozone precursor thresholds identified above, land use development projects typically result in particulate matter emissions as a result of increases in vehicle trips, space heating and natural gas combustion, landscape maintenance, and construction activities. Therefore, the above thresholds can be applied to the construction and operational phases of a land use project. 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 land use 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.³⁵ As discussed previously, the Bay Area is in attainment for both CO and SO₂. Furthermore, the BAAQMD has demonstrated, based on modeling, that in order to exceed the California ambient air quality standard of 9.0 ppm (8-hour average) or 20.0 ppm (1-hour average) for CO, project traffic in addition to existing traffic would need to exceed 44,000 vehicles per hour at affected intersections (or 24,000 vehicles per hour where vertical and/or horizontal mixing is limited). Therefore, given the Bay Area's attainment status and the limited CO and SO₂ emissions that could result from a land use projects, land use projects would not result in a cumulatively considerable net increase in CO or SO₂, and quantitative analysis not required.

³⁴ *Ibid.*, p. 16.

³⁵ *Ibid.*, p. 27.

Fugitive Dust

Fugitive dust emissions are typically generated during construction phases. Studies have shown that the application of best management practices (BMPs) at construction sites significantly control fugitive dust.³⁶ Individual measures have been shown to reduce fugitive dust by anywhere from 30 percent to 90 percent.³⁷ The BAAQMD has identified a number of BMPs to control fugitive dust emissions from construction activities.³⁸ As discussed previously, the City's Construction Dust Control Ordinance requires a number of measures to control fugitive dust. The construction dust control ordinance has a mandate for "no visible dust." The BMPs employed in compliance with the City's Construction Dust Control Ordinance is an effective strategy for controlling fugitive dust.

Projects that include the measures required by the construction dust ordinance and result in emissions of NO_x, ROG, PM₁₀, and PM_{2.5} below the standards listed above during project operations or 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 from New or Modified Sources

Construction activities typically require the use of heavy-duty diesel vehicles and equipment, which emit DPM, designated a TAC. Land use projects that require a substantial amount of 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, 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.³⁹ Nevertheless, DPM is a known TAC and therefore, appropriate thresholds are identified to ensure that a project does not expose sensitive receptors to substantial pollutant concentrations. Projects that include the measures required by the construction dust ordinance and result in emissions of TACs, including DPMs below the standards listed above during project operations or construction would not:

- Expose sensitive receptors to substantial pollutant concentrations.

³⁶ Western Regional Air Partnership, *WRAP Fugitive Dust Handbook*, September 7, 2006. Available online at: http://www.wrapair.org/forums/dej/fdh/content/FDHandbook_Rev_06.pdf, accessed on February 16, 2012.

³⁷ BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009; p. 27.

³⁸ BAAQMD, *CEQA Air Quality Guidelines*, May 2012. This document is available online at: http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en, accessed on June 14, 2012; pp. 8-3 – 8-4.

³⁹ BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 29.

Similar to criteria pollutant thresholds identified above, the BAAQMD Regulation 2, Rule 5 sets cancer risk limits for new and modified sources of TACs at the maximally exposed individual (MEI). In addition to cancer risk, some TACs pose non-carcinogenic chronic and acute health hazards. Acute and chronic non-cancer health hazards are expressed in terms of a hazard index, or HI, which is a ratio of the TAC concentration to a reference exposure level (REL), a level below which no adverse health effects are expected, even for sensitive individuals.⁴⁰ In accordance with Regulation 2, Rule 5, the BAAQMD Air Pollution Control Officer shall deny any permit to operate a source that results in an increased cancer risk of 10 per million or an increase chronic or acute HI of 1.0 at the MEI. This threshold is designed to ensure that the source does not contribute to a cumulatively significant health risk impact.⁴¹

In addition, particulate matter, primarily associated with mobile sources (vehicular emissions) is strongly associated with mortality, respiratory diseases, and impairment of lung development in children, and other endpoints such as hospitalization for cardiopulmonary disease. Based on toxicological and epidemiological research, smaller particles and those associated with traffic appear more closely related to health effects.⁴² Therefore, estimates of PM_{2.5} emissions from a new source can be used to approximate broader potential adverse health effects. For developed urban areas, including much of San Francisco, the EPA has proposed a Significant Impact Level (SIL) of between 0.3 µg/m³ to 0.8 µg/m³. The SIL represents the level of incremental PM_{2.5} emissions that represents a significant contribution to regional nonattainment.⁴³ The BAAQMD has determined that on balance the annual average PM_{2.5} threshold of 0.3 µg/m³ will afford the same health protections as required by San Francisco Health Code Article 38.⁴⁴ Therefore the lower range of the EPA-recommended SIL of 0.3 µg/m³ is an appropriate threshold for determining the significance of a source's PM_{2.5} impact.

In determining the potential distance that emissions from a new source (construction sources or operational sources) may affect nearby sensitive receptors, a summary of research findings in ARB's *Land Use Compatibility Handbook* suggest that air pollutants from high volume roadways are substantially reduced or can even be indistinguishable from upwind background concentrations at a distance of 1,000 feet downwind from sources such as freeways and large distribution centers.⁴⁵ Given the scientific data on dispersion of TACs from a source, the Planning Department has determined that impacts of sources of TACs on nearby receptors should be assessed within a 1,000-foot radius.⁴⁶ This radius is also consistent with ARB's *Land Use Compatibility Handbook* and California Health and Safety Code Section 42301.6 (Notice for Possible Source Near School).⁴⁷

⁴⁰ *Ibid.*, p. D-35.

⁴¹ BAAQMD, *CEQA Air Quality Guidelines*, May 2011. Available online at <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Updated-CEQA-Guidelines.aspx>, p. D-40.

⁴² San Francisco Department of Public Health, *Assessment and Mitigation of Air Pollutant Health Effects for Intra Urban Roadways: Guidance for Land Use Planning and Environmental Review*, May 2008, p. 5.

⁴³ BAAQMD, *CEQA Air Quality Guidelines*, May 2011, available online at <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Updated-CEQA-Guidelines.aspx>, p. D-36.

⁴⁴ *Ibid.*, p. 41.

⁴⁵ BAAQMD, *CEQA Air Quality Guidelines*, May 2011. This document is available online at <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Updated-CEQA-Guidelines.aspx>, p. D-38.

⁴⁶ *Ibid.*, p. D-40.

⁴⁷ *Ibid.*, p. 40.

In summary, potential health risks and hazards from new sources on existing or proposed sensitive receptors are assessed within a 1,000-foot zone of influence and risks and hazards from new sources that exceed any of the following thresholds at the MEI are determined to be significant: excess cancer risk of 10 per 1 million, chronic or acute HI of 1.0, and annual average PM_{2.5} increase of 0.3 µg/m³.

Health Risks and Hazards for New Receptors

Sources of TACs have the greatest impact on receptors that are located in close proximity to pollutant sources. The further away from a significant source of TACs, the less a receptor is exposed to hazardous air pollutants. As described above, the Planning Department recommends that an analysis of the potential impacts to new receptors consider all cumulative sources of TACs within the 1,000-foot zone of influence. For projects siting new sensitive receptors, existing and proposed sources of TACs should not expose new sensitive receptors to an excess cancer risk greater than 100 per 1 million. This absolute limit is based on EPA guidance for conducting air toxic analyses and making risk management decisions at the facility and community-scale level.⁴⁸ 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,⁴⁹ the 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 1 million and (2) limiting to no higher than approximately one in ten thousand [100 in 1 million] the estimated risk that a person living near a plant would have if he or she were exposed to the maximum pollutant concentrations for 70 years.” The 100 per 1 million excess cancer cases is also consistent with the ambient cancer risk in the most pristine portions of the Bay Area based on BAAQMD regional modeling.⁵⁰ Therefore, when siting new sensitive receptors near sources of TACs and other hazardous air pollutants, the threshold for an incremental increase in cancer risk is 100 per million.

The BAAQMD’s Air Toxics Hot Spots (ATHS) program provides guidance for implementing the Air Toxics Hot Spots Information and Assessment Act (California Health and Safety Code Section 44300 et. seq.). Accordingly, the BAAQMD has established a non-cancer chronic HI of 10.0. Any sources exceeding this level are required to implement mandatory risk reduction levels. As such, a chronic non-cancer HI of 10.0 from cumulative sources of TACs is an appropriate threshold when siting sensitive land uses.⁵¹

As discussed previously, the EPA is proposing a SIL for PM_{2.5} ranging from 0.3 µg/m³ to 0.8 µg/m³. The SIL is intended to ensure that a source does not result in a cumulatively significant contribution to ambient PM_{2.5} levels. Therefore, the upper-bound SIL of 0.8 µg/m³ from all sources within 1,000 feet of a sensitive receptor is an appropriate level for determining a significant impact to new sensitive receptors.⁵²

⁴⁸ BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 67.

⁴⁹ 54 Federal Register 38044, September 14, 1989.

⁵⁰ BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 67.

⁵¹ BAAQMD, *CEQA Air Quality Guidelines*, May 2011. This document is available online at <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Updated-CEQA-Guidelines.aspx>, p. D-43.

⁵² *Ibid.*, p. D-43.

When siting new sensitive receptors, the thresholds identified above represent the cumulative limits from all sources within a 1,000-foot zone of influence from the new receptor; therefore single-source thresholds are unnecessary.

Projects that would result in emissions less than the health risk standards for new sources identified above and would not site new sensitive land uses in areas that exceed the health risk and hazard standards for new receptors would not:

- Expose sensitive receptors to substantial pollutant concentrations.

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. By nature, air quality is largely a cumulative impact, and no single project is sufficiently large to result in nonattainment of ambient air quality standards. Rather, each project's emissions contribute to cumulative air quality impacts, and whether the contribution is "considerable" is what determines whether a cumulative significant impact would arise.

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 cumulative regional air quality impacts.

With respect to localized health risks and hazards, as described above, the significance thresholds for new receptors represent a cumulative impact analysis as this analysis considers all potential sources that may result in adverse health impacts within a receptor's zone of influence. Similarly, new sources that contribute to health risks and hazards at nearby sensitive receptors that exceed these cumulative thresholds would result in a significant health risk and hazards impact to existing sensitive receptors.

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 Bay Area. 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. A consistency analysis of the proposed project in relation to the goals and objectives of the *Clean Air Plan* focuses on the proposed project's support of the primary goals in the *Clean Air Plan*, the proposed project's implementation of applicable control measures, and evaluation of any potential disruption to or hindrance of implementation of the *Clean Air Plan*. In determining whether a proposed project or plan would conflict with the *Clean Air Plan*, three criteria are evaluated: (1) whether would the Draft Plan implement the applicable control measures in the *Clean Air Plan*; (2) whether the Draft Plan would disrupt or hinder implementation of any of these control measures; and (3) whether the Draft Plan 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 1 or 2 miles, depending on use.

For the purposes of this EIR, the Proposed Project would result in a significant impact with respect to odors if it would:

- Create objectionable odors affecting a substantial number of people.

Approach to Analysis

Western SoMa Community Plan and Rezoning of Adjacent Parcels

As noted under Significance Criteria, above, plan-level analysis requires (1) evaluation of the Draft Plan's consistency with the Air Quality Control Measures in the *Clean Air Plan*, (2) comparison of the rate of growth in vehicle trips and that of population and employment increase, (3) determination of whether the Draft Plan would preclude the exposure of sensitive receptors to health risks from TACs, and (4) assessment of the Draft Plan's efficacy in avoiding exposure of persons to sources of unpleasant odors.

Proposed Transportation Improvements and 350 Eighth Street Project

Construction exhaust emissions and operational emissions of criteria air pollutants were estimated using the California Emission Estimator Model (CalEEMod) (version 2011.1.1) for the expected buildout of the specific transportation and development projects and compared to the identified significance thresholds. The model, developed in cooperation with California air districts, including the BAAQMD, quantifies direct emissions from construction and operation (including vehicle use), as well as indirect emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. It also identifies mitigation measures to reduce criteria pollutant emissions. Additionally, dispersion modeling was conducted using the CAL3QHCR model to evaluate whether the truck route signage proposed for posting in the Draft Plan Area would adversely affect local air quality. The resulting quantification is compared against the applicable thresholds of significance.

For the health risk assessment related to use of diesel-powered construction equipment a quantitative risk evaluation was conducted that involved dispersion modeling, using the AERMOD model, accounting for the construction equipment to be used, local meteorology, and nearby sensitive receptors, to determine whether applicable significance thresholds would be exceeded at any receptor location. For cancer risk and HI calculations, further computation was undertaken to convert the model's pollutant concentrations to risk numbers. Modeling was also employed to derive quantitative health risks for operational stationary sources, such as the emergency generator for the 350 Eighth Street project, as well as the impact of traffic from nearby freeways and local streets on receptors that would be located at the 350 Eighth Street site.⁵³

⁵³ 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. This report is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2008.0877E.

Impacts of the Western SoMa Community Plan and Rezoning of Adjacent Parcels (Program-Level Analysis)

Criteria Air Pollutants: Consistency with the 2010 Clean Air Plan

Impact AQ-1: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would conflict with or obstruct implementation of the 2010 Clean Air Plan, 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 criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard. (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 Draft Plan would implement the applicable control measures in the Clean Air Plan; whether the Draft Plan would disrupt or hinder implementation of any of these control measures; and whether the Draft 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 including 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.⁵⁴ The remaining 37 measures are grouped into Transportation, Mobile Source, Land Use and Local Impact, and Energy and Climate measures. The Clean Air Plan Control Measures are discussed in detail below.⁵⁵

The Control Measures most applicable to the Draft Plan and the Rezoning of Adjacent Parcels⁵⁶ are the Transportation Control Measures. The Transportation Control Measures concern improvements to 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. The Draft Plan, through implementation of existing City policies and new programs in the Draft 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, 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,"⁵⁷ and is discussed below.

⁵⁴ For example, Stationary Source Measures 11 and 12 will ultimately require that new furnaces in the Air Basin emit lower levels of NOx.

⁵⁵ 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.

⁵⁶ Although not a part of the Draft Plan Area, the Adjacent Parcels would be subject to citywide policies, including those in the General Plan Air Quality Element and other policies described above under "Local Policies and Ordinance, that would further consistency with the 2010 Clean Air Plan.

⁵⁷ BAAQMD, 2010 Clean Air Plan, September 2010. Available on the internet at: <http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/Clean-Air-Plans.aspx>; p. D-1.

Transportation Control Measures in the *2010 Clean Air Plan* (CAP) are identified in **Table 4.G-4**, below. 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 Draft Plan or explains why the strategy does not apply to the Draft Plan. As indicated in the table, the Draft 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 4.G-4, page 4.G-29, implementation of the Draft Plan would promote implementation of, and in some cases, go beyond, these measures.

The Rezoning of Adjacent Parcels would result in new zoning districts that would allow potentially dense residential, commercial, and light industrial uses in an area of the city that is well-served by public transportation and would also not preclude the implementation of the Transportation Control Measures in the *2010 Clean Air Plan*. Therefore the Draft Plan and Rezoning of Adjacent Parcels 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 building energy conservation and efficiency and renewable energy; reducing “urban heat island” effects by increasing reflectivity of roofs and parking lots; and promoting (low-VOC) tree planting.⁵⁸ Many of the City plans and programs that achieve consistency with and promote these measures are discussed in detail in Section 4.H, Greenhouse Gas Emissions. 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 Chapter 13C of the *San Francisco Building Code* (the green building regulations), as well as the street tree planting requirement of Planning Code Section 138.1(c)(1). Subsequent development projects in the Project Area would be required to comply with these City requirements, and therefore the Draft Plan and Rezoning of Adjacent Parcels would be consistent with the Energy and Climate Control Measures in the *2010 Clean Air Plan*. Subsequent development projects in the Draft Plan Area would also be subject to Draft Plan policies concerning sustainability, many of which would reduce emissions. For example, the Draft Plan proposes enhancement of “connection between building form and ecological sustainability by promoting use of renewable energy, energy-efficient building envelopes, passive heating and cooling, and sustainable materials” (Policy 5.2.8); strongly encourages “compliance with strict environmental efficiency standards for new buildings” (Policy 5.2.9); and requires “new development to meet minimum levels of ‘green’ construction” (Policy 5.2.2).

⁵⁸ BAAQMD, *2010 Clean Air Plan*, September 2010. Available on the internet at: <http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/Clean-Air-Plans.aspx>; p. 4-10.

TABLE 4.G-4
CONSISTENCY OF THE DRAFT PLAN WITH TRANSPORTATION CONTROL MEASURES OF THE
2010 CLEAN AIR PLAN

2010 CAP Control Measure	Elements of the Draft Plan Consistent with the Measure or Explanation of Non-Applicability
Transportation Control Measures	
TCM A-1 and A-2: Improve Local and Regional Bus and Rail Services	The Draft Plan proposes that Folsom Street become “a priority public transit corridor” (Policy 4.18.1); proposes transit improvements that would “reduce conflicts between transit vehicles, bicyclists and pedestrians on ‘Transit Preferential Streets’” (Policy 4.18.5); and proposes improved transit connectivity in the Draft Plan Area (Policies 4.19.2 and 4.19.3), as well as coordination with larger transit improvements (Policy 4.20.1). The Draft Plan recognizes that the larger South of Market neighborhood includes a number of regional transit facilities, such as the new Transbay Transit Center currently under construction at First and Mission Streets, the Caltrain Station at Fourth and King Streets, and BART stations on Market Street. Accordingly, the Draft Plan calls for the provision of better “links to local and regional transit services” (Policy 4.19.1). Phase 2 of Measure TCM-A-1 includes partial funding for Muni’s Van Ness Avenue Bus Rapid Transit project. Phase 2 of Measure TCM-A-2 includes partial funding for the Muni Metro Central Subway now under construction and for the downtown extension and systemwide electrification of Caltrain and the new Transbay Transit Center. All of these projects are proximate to the Project Area.
TCM B-1 through B-4: Improve Transportation System (freeways and arterials; transit; express lanes; goods movement) Efficiency	Although 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, San Francisco (Muni) participates in the 511 transit information system). The Draft Plan seeks to accommodate the variety of Project Area transportation needs by concentrating regional traffic and trucks traveling through the Project Area onto designated “regional streets” and truck routes (Ninth and 10th Streets and Harrison and Bryant Streets), while making transit, pedestrian, and bicycle improvements on many other streets within the Project Area.
TCM C-1: Voluntary Employer-Based Trip Reduction Programs	San Francisco employers operate (or contract for) numerous shuttle bus services, most of which serve parts of the Project Area. The City’s Commuter Benefits Ordinance (Section 421 of the Environment Code) requires that employers with more than 20 employees provide pre-tax purchase of transit passes, employer-paid passes, or employer-provided transit. The Draft Plan proposes that commercial developments provide Transportation Demand Management (TDM) programs such as carpool matching, car sharing, financial incentives for transit use, walking, and bicycling, preferential carpool/vanpool parking, and other features, to reduce trip generation (Policies 4.7.7 and 4.18.3). The Draft Plan also calls for residential development to make TDM benefits, including car-sharing, bicycle parking, and transportation information, available to residents.
TCM C-2: Safe Routes to School and Safe Routes to Transit	This measure funds pedestrian and bicycle improvements. While there are no elementary or secondary schools in the Project Area, Bessie Carmichael Elementary School, on Seventh Street near Harrison Street, is across the street from the Project Area. The Draft Plan proposes improvements to pedestrian and bicycle circulation, including improvements aimed at increasing pedestrian safety, including the installation of signalized mid-block crosswalks on Folsom Street between Seventh and Eighth Streets and between Eighth and Ninth Streets, and on Seventh, Eighth, and Ninth Streets at Minna and Natoma Streets. The Draft Plan also proposes traffic calming, particularly at freeway off-ramps, to improve pedestrian safety.

TABLE 4.G-4 (Continued)
CONSISTENCY OF THE DRAFT PLAN WITH TRANSPORTATION CONTROL MEASURES OF THE
2010 CLEAN AIR PLAN

2010 CAP Control Measure	Elements of the Draft Plan Consistent with the Measure or Explanation of Non-Applicability
Transportation Control Measures (cont.)	
TCM C-3: Ridesharing Services and Incentives	Through the 511 commuter information program, preferential vanpool parking, guaranteed ride home in emergencies, and carpool parking permits are provided in San Francisco. The Planning Code (Section 166) requires that car-share parking be provided in new parking garages. (See also the next measures.)
TCM C-4 and C-5: Public Outreach/Education and Smart Driving	These measures concern efforts to influence commuters' and drivers' behavior and are not directly relevant to the Draft Plan. However, subsequent development projects in the Project Area would be required under Section 163 of the Planning Code 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. (Section 163 applies to C-3 [Downtown] and to South of Market and Eastern Neighborhoods Mixed Use Districts.) As discussed under TCM C-1, the Draft Plan proposes extensive application of TDM programs and features.
TCM D-1 and D-2: Improvements to Bicycle and Pedestrian Facilities and Access.	The Draft Plan encourages pedestrian activity and bicycle use and would make streetscape and other improvements to encourage both. Policies 4.21.1 – 4.23.4 of the Draft Plan discuss pedestrian enhancements, while Policies 4.24.1 – 4.26.1 are concerned with improving bicycle circulation.
TCM D-3: Local Land Use Strategies (to encourage higher density and mixed uses).	The Draft Plan would continue the mixed-use character of the Draft Plan Area. In addition, consistent with other rezoning undertaken recently in San Francisco, the zoning districts proposed for the Draft Plan Area would have no maximum residential density; instead, density would be limited by height and bulk controls. This would also be true for the proposed MUO zoning on the majority of the Adjacent Parcels (but not on the eight parcels proposed for C-3-G zoning).
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 in the Draft Plan area.
TCM E-2: Promote Parking Policies to Reduce Motor Vehicle Travel	The Planning Code currently requires that new off-street parking provided for uses other than residential units and hotels in most of the Project Area north of Harrison Street be priced so as to discourage long-term commuter parking, while still providing adequate short-term parking. Section 155(g) of the Code 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 charge 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. Code Section 167 requires that residential parking be priced separately from dwelling units themselves. The Draft Plan would generally maintain these requirements, except that they would not apply in NC-T and RCD districts.
TCM E-3: Implement Transportation Pricing Reform	While not directly applicable to the Draft 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 Draft Plan's emphasis on pedestrian and bicycle travel, the Project Area is positioned to benefit from such potential changes.

SOURCE: 2010 Clean Air Plan; Environmental Science Associates, 2011.

Land Use and Local Impact Control Measures, also newly added in the *2010 Clean Air Plan*, and 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.”⁵⁹ These measures include reducing DPM and greenhouse gas emissions from trucks; development of an “indirect source review rule” primarily aimed at reducing emission 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 Draft Plan and Rezoning of Adjacent Parcels, by increasing development density in proximity to transit, the Draft Plan and Rezoning of Adjacent Parcels would further the district’s goals of reducing emissions from commuter travel.

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 Project Area, within the BAAQMD’s Community Air Risk Evaluation program that are generally exposed to higher levels of TACs than are other communities. Regional implementation actions set forth under this measure include regional 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. As noted in Chapter 2, Project Description, the Draft Plan proposes installation of truck route signs on Ninth, 10th, Harrison, and Bryant Streets to encourage trucks to avoid other streets. Because all of 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 Project Area, and because these truck routes would serve the Adjacent Parcels as well, the Draft Plan and Rezoning of Adjacent Parcels would be consistent with Control Measure LUM 1. In light of the foregoing, the Draft Plan and Rezoning of Adjacent Parcels 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 Draft Plan and Rezoning of Adjacent Parcels, 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

⁵⁹ BAAQMD, *2010 Clean Air Plan*, September 2010. Available online at: <http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/Clean-Air-Plans.aspx>, accessed on April 19, 2012; p. 4-9.

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, that most equipment on city-contracted construction projects use biodiesel fuel (minimum of 20 percent biodiesel, or B20) and employ Tier 2 diesel engines or “best available control technology.” Neither the Draft Plan nor the Rezoning of Adjacent Parcels would conflict with any of these measures, and therefore the Draft Plan and Rezoning of Adjacent Parcels would be consistent with the Mobile Source Control Measures in the *2010 Clean Air Plan*.

Moreover, neither the Draft Plan nor the Rezoning of Adjacent Parcels would 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 Draft Plan would foster implementation of the City’s *Bicycle Plan* in the Draft Plan Area through proposed streetscape improvements); precluding extension of a transit line (the Draft Plan aims to enhance transit use); or provision of excessive parking beyond parking requirements (the Draft Plan includes policies to more effectively manage parking supplies).

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 Draft Plan would be consistent with the *2010 Clean Air Plan* through implementation of its policies. Specifically, Policy 1.4.1 of the Draft Plan directs the project to minimize exposure of air pollutants from existing traffic sources to new residential developments, schools, day care and medical facilities. Additionally, Policy 4.14.6 directs the Draft Plan implementers to work with the Department of Public Health and Department of Building Inspection to develop new building code requirements to mitigate ambient air pollution hazards.

As described above, the Draft 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 on page 4.G-16 under “Regulatory Setting,” Article 38 of the San Francisco Health Code is intended to prevent future air quality health impacts to new residential uses of 10 units or more proposed near busy roadways. New development in the Project Area would be subject to this requirement, and therefore neither the Draft Plan nor the Rezoning of Adjacent Parcels would conflict with Article 38.

Greenhouse gas emissions are discussed in Section 4.H of this EIR, Greenhouse Gas Emissions, where it is determined that the Draft Plan and Rezoning of Adjacent Parcels would be consistent with a 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 Draft Plan and Rezoning of Adjacent Parcels would be consistent with the 2010 *Clean Air Plan* Control Measures, would support the primary goals of the plan, and would not hinder implementation of the plan.

Growth in Vehicle Trips Compared to Growth in Population

Consistency of the Draft Plan and Rezoning of Adjacent Parcels must also demonstrate that forecast growth in vehicle trips is not greater than projected population growth in the Project Area.⁶⁰ Growth projections prepared by the San Francisco Planning Department (and discussed in Section 4.C, Population and Housing) indicate that with implementation of the Proposed Project, the Project Area household population would increase from approximately 7,000 to 13,340 by 2030, the analysis horizon year. This represents an increase of 91 percent. This percentage increase is high relative to the overall change forecast citywide because the Project Area has a relatively small residential population under existing conditions. Accordingly, for purposes of a more realistic assessment, this analysis compares the growth in both population and employment to the growth in traffic. Employment is projected to grow from about 17,660 under existing conditions to approximately 24,000 by 2030, an increase of 36 percent. The combined population-employment (“service population”) increase with implementation of the Proposed Project, would therefore be approximately 51 percent $([13,340 + 24,000] \div [7,000 + 17,660] = 1.51)$. Based on output from the County Transportation Authority travel demand model, the number of vehicle trips made to and from the Project Area would increase by approximately 32 percent by 2030. Because the increase in vehicle trips would be less than the increase in “service population,” the Draft Plan and Rezoning of Adjacent Parcels (individually and in combination) would result in a less-than-significant impact with respect to regional criteria air pollutants. The Draft Plan includes goals and policies that would apply to development within the Draft 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 Draft Plan Area. The Draft Plan seeks to improve transit, pedestrian, and bicycle accessibility and connections, thereby minimizing the need for automobile travel. The transportation analysis for the Draft Plan reveals that 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 Draft Plan and Rezoning of Adjacent Parcels (individually and in combination) 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

⁶⁰ This comparison includes the entire Project Area—the Draft Plan Area plus the Adjacent Parcels—because the Adjacent Parcels represent too small an area in which to accurately forecast future growth, and because the Adjacent Parcels are within the same Traffic Analysis Zones (TAZs) as the Draft Plan Area and the TAZ is the forecasting unit. Moreover, the Adjacent Parcels are integral to the overall Project Area in terms of both growth potential and travel characteristics, and therefore would not have substantially different growth or travel characteristics. Finally, growth on the Adjacent Parcels would represent less than 5 percent of total growth in the Project Area, and thus would not meaningfully affect the comparison of growth in service population versus growth in vehicle trips.

emissions that demonstrates 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 Draft Plan and Rezoning of Adjacent Parcels, the maximum future (with Proposed Project) peak-hour traffic volume at any of the study intersections in the Project Area would be less than 5,000 vehicles, and the maximum at any of the study intersections would be fewer than 6,750 vehicles under cumulative conditions. Therefore, modeling of CO concentrations is not required, and neither the Draft Plan nor the Rezoning of Adjacent Parcels would be anticipated to exceed the state 1-hour or 8-hour CO standards. Therefore, effects related to CO would also be less than significant.

Mitigation: None required.

Impact AQ-2: Subsequent individual development projects in the Draft Plan Area and/or on the Adjacent Parcels (individually and in combination) 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 any criteria pollutant 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 threshold of significance for evaluation of a plan's emissions of criteria air pollutants is based on consistency with regional air quality planning. On the other hand, the significance of a subsequent individual development project is determined by a quantitative comparison to the project-level significance thresholds. (See the analysis of the 350 Eighth Street project, page 4.G-53.) It is possible that individual development projects, 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. For example, a project that generates more than 3,500 daily vehicle trips would likely result in operational emissions that would exceed one or more project-specific significance thresholds. Such projects would be required to undergo project-specific environmental review and, if mitigation could not reduce emissions to below the threshold(s), such projects could be subject to the requirement to prepare an EIR.

Consequently, the potential exists for individual development projects within the Project Area to generate vehicle trips that would result in a significant increase in criteria air pollutants. As set forth in Table 4.G-4, p. 4.G-29, the Draft Plan includes or would further a number of 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 Transit Impact Development Fee by non-residential projects (Section 411); and provision of on-site child care⁶¹ in office and hotel projects

⁶¹ This provision may be satisfied by an in-lieu fee, which would not necessarily result in the same trip reduction benefit.

(Section 414). 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, 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 Project Area, the individual projects are assumed to have the potential to result in emissions that would exceed applicable significance thresholds. The air quality impacts of subsequent individual projects, therefore, would be considered significant. Implementation of Mitigation Measure M-AQ-2, 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 would be considered **significant and unavoidable** with mitigation.

Mitigation Measure

M-AQ-2: Transportation Demand Management Strategies for Future Development. Potential operational criteria pollutant impacts identified for future individual projects in the Project Area would depend, among other things, on the number of motor vehicle trips generated by a project. Subsequent development projects in the Draft Plan Area and on Adjacent Parcels that would generate more than 3,500 daily vehicle trips,⁶² or would emit criteria pollutants in excess of one or more applicable significance thresholds, as determined by the Environmental Review Officer, shall develop and implement a Transportation Demand Management (TDM) plan as a requirement of project approval.

TDM strategies identified in the TDM plan shall include at a minimum the following measures, or other equally or more effective measures, as determined applicable by the Planning Department:

- Identify an on-site transportation manager who shall be responsible for orienting new residents or employees about transportation options, updating transportation information at display/kiosk, coordination of ridesharing, provision of transit passes, etc;
- Include in the price of rental/Home Owners Association fee a monthly Muni Fast Pass;
- Provide a transportation kiosk/display in the commercial or residential lobby, or other highly visible location, with regularly updated information about transportation choices;
- Provide and maintain a pool of bicycles for building residents;

⁶² The threshold of 3,500 vehicle trips is based on the number of trips that, depending on the precise nature of a project, would result in emissions of one or more criteria pollutants from project operation exceeding the City's significance thresholds. (Based on comparison of emissions calculations from several recent EIRs, including those for the 222 Second Street, 350 Mission Street, 8 Washington Street, Parkmerced, and Treasure Island projects). This analysis is available for review at the Planning Department in Case File No. 2008.0877E.

- Provide on-site bicycle rental/loaner bicycles to retail/commercial employees and hotel guests for local travel;
- Provide additional Class 1 bicycle parking spaces for resident or retail/commercial employee use;
- Provide bicycle parking (valet or Class 1 secure parking) for hotel guests;
- Provide Class 2 bicycle parking for retail/commercial and residential visitor use;
- Require retail/commercial employees to pay for on-site parking;
- Reduce amount of on-site vehicle parking for retail/commercial and residential land uses;
- Provide information on website (e.g., retail and/or commercial businesses, museums, hotels) about how to access the building via transit, walking, and bicycling;
- Provide on-site, and/or with reservation sale of one, three, and seven-day Muni Passports and/or pre-loaded Clipper Cards for hotels; and/or
- Offer other transit, ridesharing, bicycling, and walking incentives for employees.

Significance after Mitigation: The above measure is applicable to future individual development projects meeting specified criteria in the Project Area. However, without specific detail on the size and extent of these projects, it is not possible to estimate emissions or the effectiveness of the mitigation measure. Consequently, this impact is conservatively identified as **significant and unavoidable** with mitigation.

Community Risk and Hazard Impacts

Impact AQ-3: The implementation of the Draft Plan and Rezoning of Adjacent Parcels (individually and in combination) would expose new sensitive receptors to substantial concentrations of fine particulate matter (PM_{2.5}) and toxic air contaminants (TACs). (Significant and Unavoidable with Mitigation)

The Draft Plan and Rezoning of Adjacent Parcels would potentially result in the construction of new residences or other sensitive receptors that could be located in the proximity of both mobile and stationary sources of TACs and PM_{2.5}. The degree of impact on new sensitive receptors would depend on proximity to the sources, the degree of emissions from these sources and the effectiveness of existing Health Code regulations.

Mobile Sources

As stated under “Environmental Setting,” above, most major streets in the Project Area have traffic volumes high enough to potentially exceed the “action level” in Article 38 of the San Francisco Health Code. Therefore, subsequent development projects that include 10 or more residential units in most locations in the Draft Plan Area or on the Adjacent Parcels would be required to undergo modeling for PM_{2.5} concentrations and, if necessary, incorporate enhanced ventilations systems into building design and construction. This would ensure compliance with Article 38 and would, in most cases, also ensure that subsequent development projects that include sensitive receptors (primarily residential units) would

not result in significant impacts resulting from exposure to roadway-generated PM_{2.5} concentrations in excess of the applicable significance threshold given on page 4.G-20. Additionally, risk- and hazard-related significance determinations are made with respect to other pollutants, including both cancer risk and chronic and acute hazard index from TACs (both roadway- and stationary-source-generated). Implementation of the Draft Plan and Rezoning of Adjacent Parcels would potentially expose new receptors to roadway-generated concentrations of PM_{2.5} and TACs.

Stationary Sources

Stationary sources in the Draft Plan Area and/or on the Adjacent Parcels would result in potential health risks (primarily lifetime cancer risk) to sensitive receptors in new development projects, which would be expected to consist mostly of persons living in new residential projects developed in the Project Area.⁶³ Because of the relatively large number of stationary sources within the Project Area, there is no location within the Project Area that is not within 1,000 feet—the recommended “zone of influence” from a receptor at which sources should be assessed for potential impacts to the receptor—of at least one such source, and most locations are within 1,000 feet of several sources.

Potential risks to new sensitive receptors in the Draft Plan Area and on the Adjacent Parcels from new stationary sources would arise from diesel emissions from standby generators, along with exposure to TACs generated by stationary sources such as gasoline stations and other facilities such as auto body shops. It is also possible that new buildings constructed in the Project Area could include one or more of these emissions sources, although it would be speculative to try to quantify or otherwise analyze in detail those emissions, absent any detailed design proposals. Another potential source in new (generally, larger) projects could be buildings that operate their own cogeneration (combined heat and electricity) facilities, which would likely be fueled by natural gas.

Non-Permitted Sources

As noted under “Environmental Setting,” above, the major non-permitted source of TACs in the vicinity of the Project 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. Accordingly, dispersion modeling,⁶⁴ using the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) was conducted for emissions from Caltrain diesel locomotives, considering both running emissions from the tracks and idling emissions from trains at the station. The analysis considered various heights (because pollutants disperse with height) and found that, at a height of 5 meters (about 16 feet, which is the approximately height of the first residential floor of a typical multi-unit residential building), the lifetime cancer for residents risk due to exposure to Caltrain emissions exceeds

⁶³ Under standard health risk assessment protocols, lifetime cancer risks to residents are calculated based on assumed exposure for 24 hours per day over a 70-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 40 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 Project Area include children and infants at child-care centers, of which there are several in the Draft 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.

⁶⁴ 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. This report is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2008.0877E.

100 in 1 million in an area that encompasses an area slightly larger than the southern half of the block bounded by Fourth, Townsend, Fifth, and Brannan Streets, extending for a maximum distance of about 350 feet from the Caltrain station (see **Figures 4.G-1** and **4.G-2** on the following pages).⁶⁵

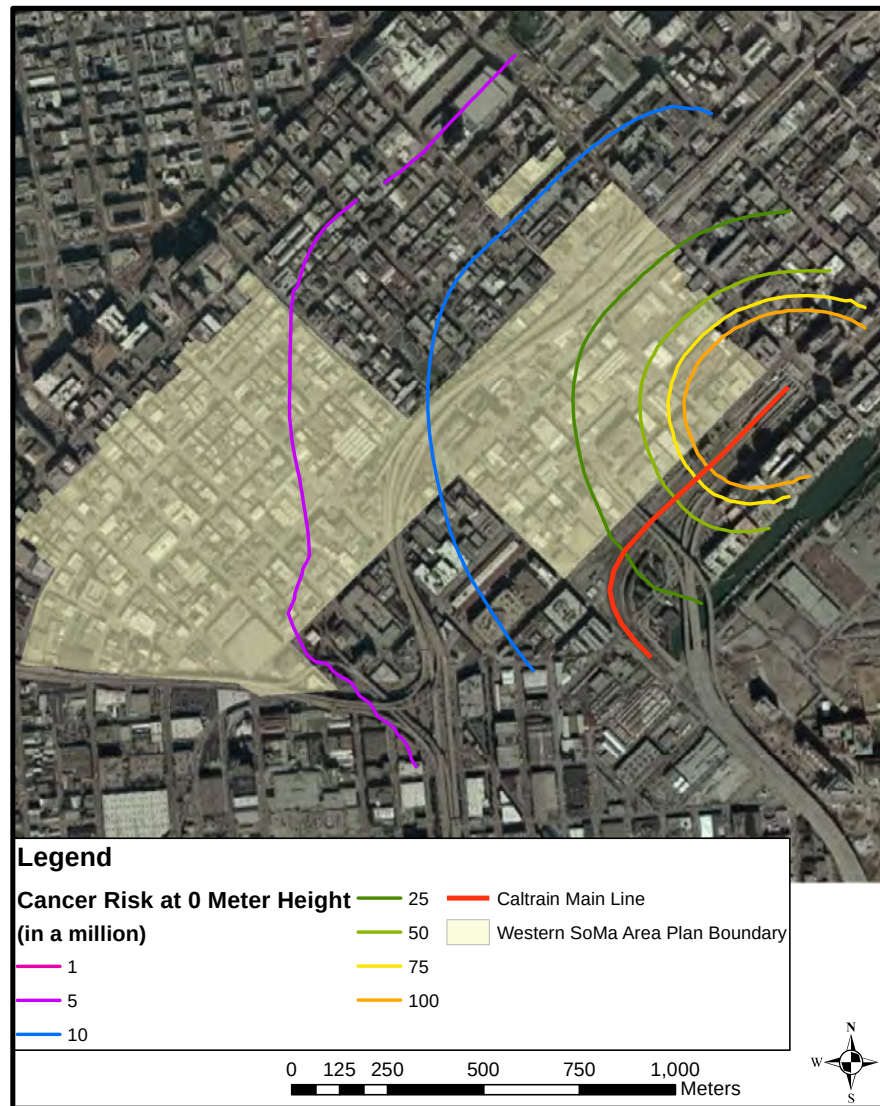
Because this result exceeds the applicable significance threshold for exposure from existing sources (see Table 4.G-3, page 4.G-20), a new residential project (or other project with sensitive receptors) proposed within this area would most likely be subject to a finding of significant impact that would require mitigation to reduce exposure to existing emissions of TACs. The portion of this area of greatest exposure to TACs that is within the Project Area (which extends to within about 175 feet of Fourth Street) is currently zoned SSO and is proposed for rezoning to Western SoMa MUO. Although the SSO use district permits residential development as a Conditional Use, the MUO district would not permit residential uses, which would avoid any new exposure of sensitive residential receptors to Caltrain emissions. Likewise, the SALI use district proposed to the northwest would not permit residential uses. However, a RED use district is proposed on the north side of Brannan Street west of Fourth Street. Based on the modeling of Caltrain emissions, the lifetime cancer risk near this location for a second-floor resident would be approximately 65 in 1 million, which would be a less-than-significant impact according to the significance criteria on page 4.G-20 if one were only exposed to emissions from this source. It is noted that this analysis may further be considered conservative because it does not account for the potential electrification of the Caltrain line between San Francisco and San José. Because this project is not fully funded, it is not considered in the analysis.⁶⁶ However, there would be no health risks or hazards from Caltrain upon electrification and, if Caltrain is electric-powered by the expected date (2028), risks and hazards reported here would no longer be present.

Reducing Impacts of TAC Exposure

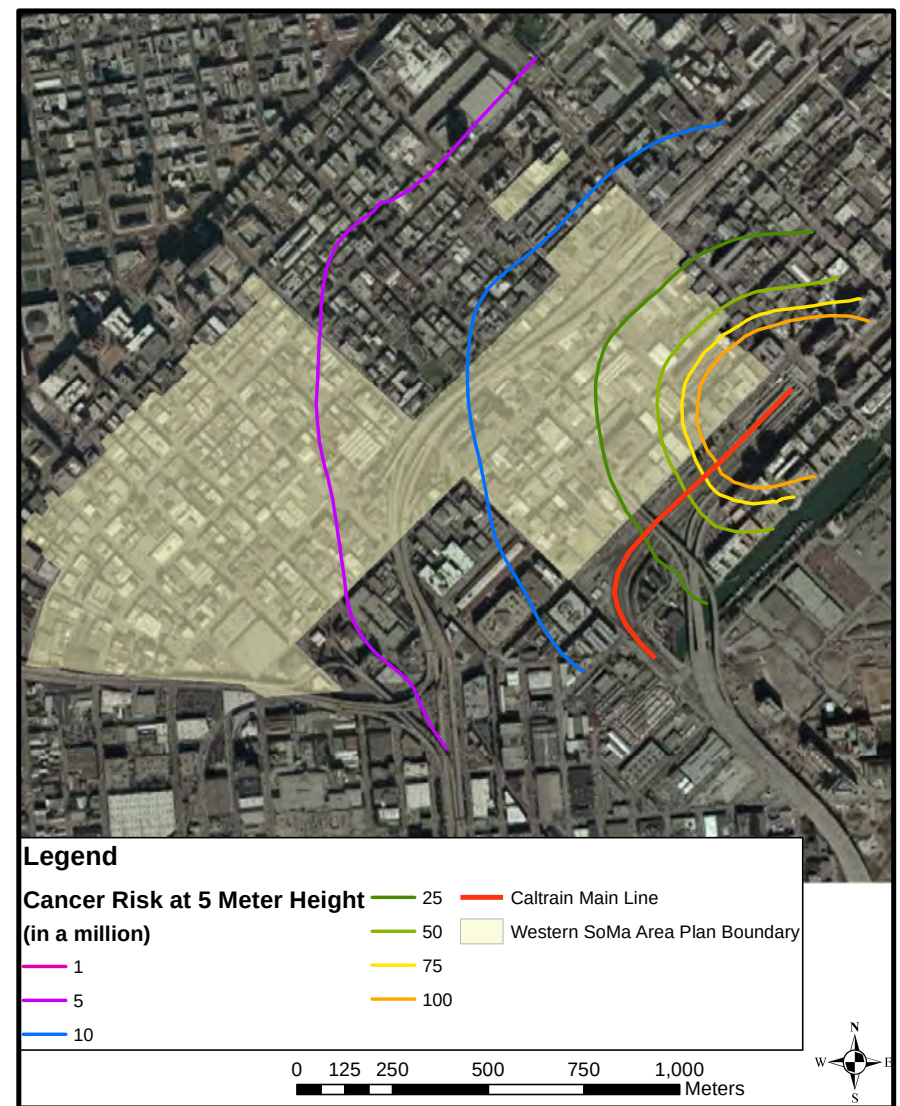
Potential significant air quality impacts on sensitive receptors due to exposure to roadway pollutants, stationary sources, and non-permitted sources, including PM_{2.5}, would be reduced through implementation of **Mitigation Measure M-AQ-3**, which would require that subsequent development projects in the Project Area be designed to reduce air quality impacts to residents through building design (e.g., ventilation and air filtration systems), where warranted by concentration(s) of PM_{2.5} along local streets or exposure to TACs from mobile, stationary, or non-permitted sources. This measure would apply to the entire Project Area because of the relatively large number of permitted and non-permitted stationary sources and the high percentage of streets with traffic volumes that could generate relatively high concentrations of PM_{2.5}, DPM, and other TACs throughout the Project Area and vicinity. Concerning “goals, policies, and objectives to minimize potential impacts,” the *San Francisco General Plan Air Quality Element* contains such policies and, as noted above under “Regulatory Setting,” the City has enacted other ordinances and policies to reduce air quality impacts.

⁶⁵ The analysis conservatively considered only residential receptors, because the standard protocol for health risk assessment assumes that residents are at home 24 hours per day for 350 days per year over a 70-year period. The analysis also included an age-specific adjustment to account for the greater risk to infants.

⁶⁶ In March 2012, the Metropolitan Transportation Commission (MTC) approved a Memorandum of Understanding (MOU) with the California High Speed Rail Authority, the Peninsula Corridor Joint Powers Board (operator of Caltrain), county transportation authorities in San Francisco, San Mateo, and Santa Clara Counties, the cities of San Francisco and San José, and the Transbay Joint Powers Authority (which is building the new Transbay Transit Center) that would help fund Caltrain electrification and extension to the Transit Center in conjunction with operation of high-speed rail on the Peninsula. However, not all of the funding sources identified in the MOU are fully secured.



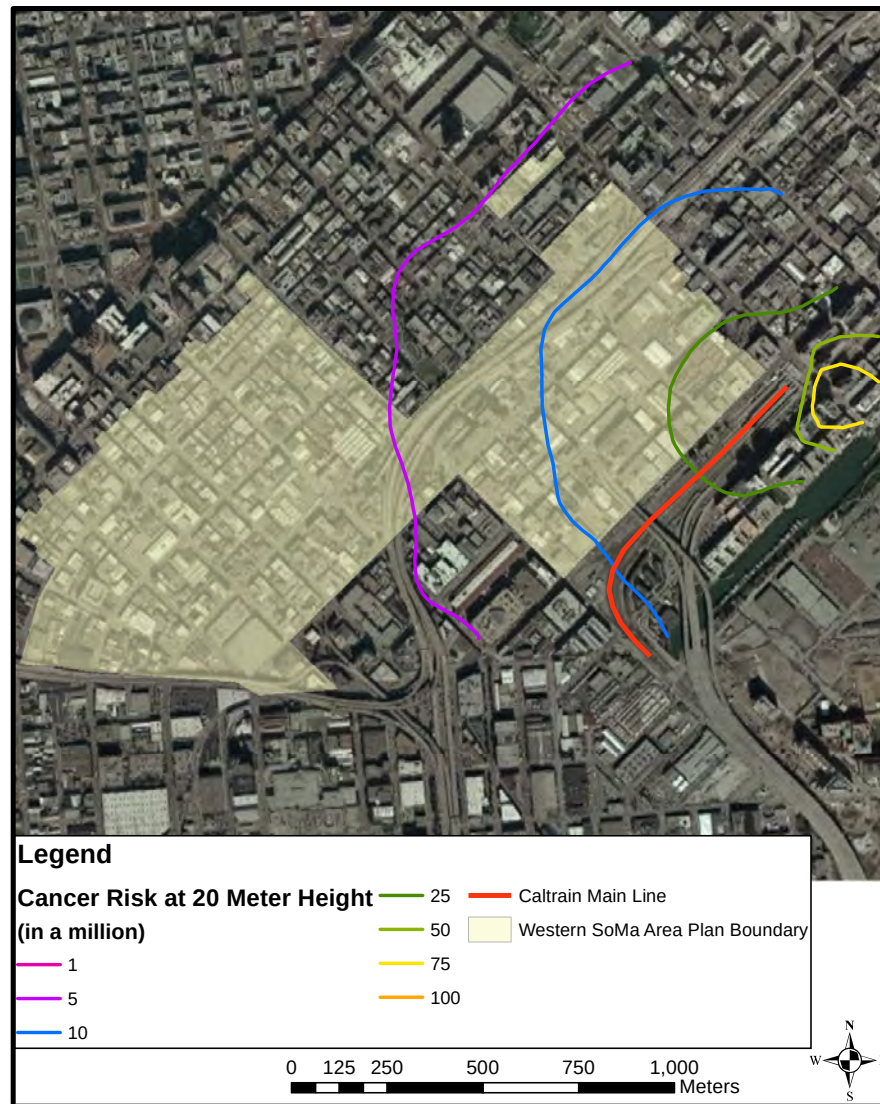
Cancer Risk at Ground Level



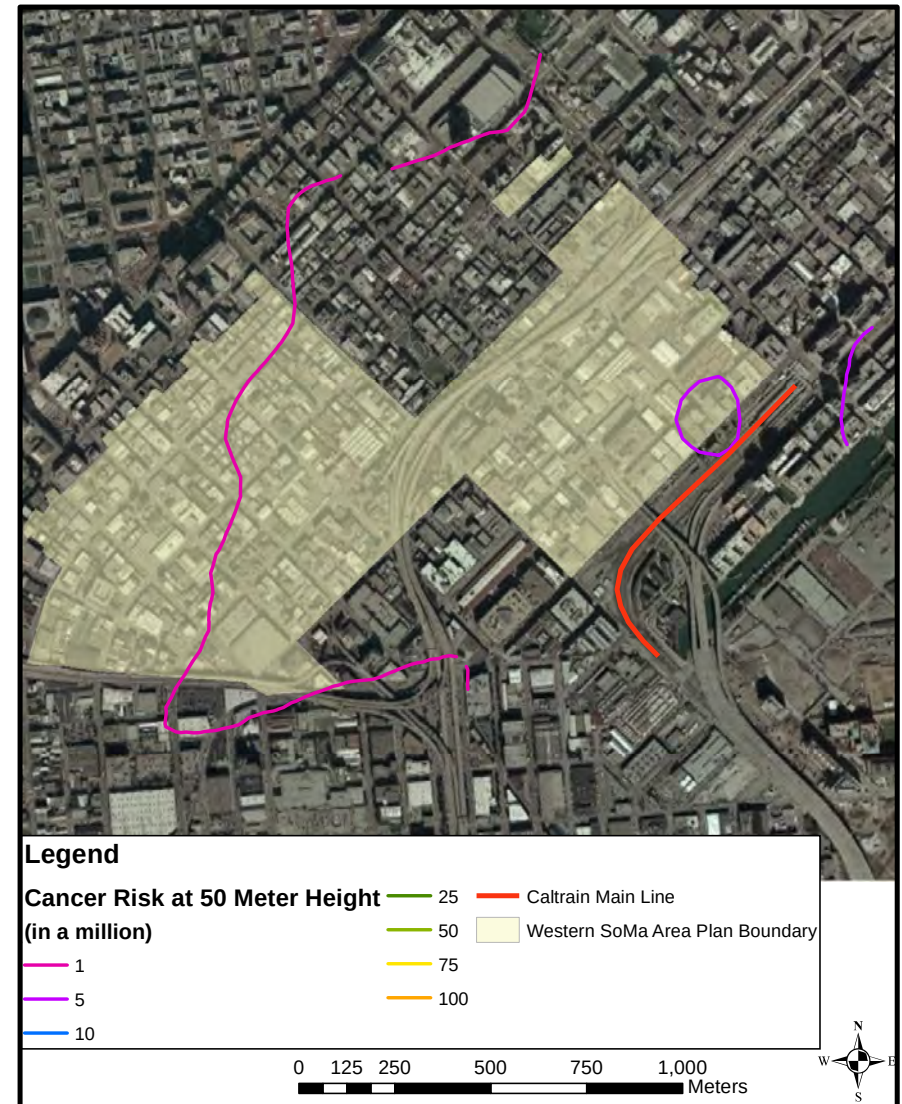
Cancer Risk at 5 Meters above grade

SOURCE: Environ

2008.0877E and 2007.1035E: Western SoMa Community Plan,
Rezoning of Adjacent Parcels, and 350 Eighth Street Project**Figure 4.G-1a**
Cancer Risks from Caltrain



Cancer Risk at 20 Meters above grade



Cancer Risk at 50 Meters above grade

SOURCE: Environ

2008.0877E and 2007.1035E: Western SoMa Community Plan,
Rezoning of Adjacent Parcels, and 350 Eighth Street Project**Figure 4.G-1b**
Cancer Risks from Caltrain

Mitigation Measure

M-AQ-3: Reduction in Exposure to Toxic Air Contaminants for New Sensitive Receptors. To reduce the potential health risk to new sensitive receptors resulting from exposure to roadways, stationary sources, and other non-permitted sources of fine particulate matter (PM_{2.5}) and toxic air contaminants (TACs), the Planning Department shall require analysis of potential site-specific health risks for all projects that would include sensitive receptors, based on criteria as established by the San Francisco Planning Department, as such criteria may be amended from time to time. 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.

Development projects in the Draft Plan Area and on the Adjacent Parcels that would include sensitive receptors shall undergo, during the environmental review process and no later than the first project approval action, an analysis of potential health risks to new sensitive receptors, consistent with methodology approved by the San Francisco Planning Department, to determine if health risks from pollutant concentrations would exceed applicable significance thresholds as determined by the Environmental Review Officer.

If one or more thresholds would be exceeded at the site of the subsequent project where sensitive receptors would be located, the project (or portion of the project containing sensitive receptors, in the case of a mixed-use project) shall be equipped with filtration systems with a Minimum Efficiency Reporting Value (MERV) rating of 13 or higher, as necessary to reduce outdoor-to-indoor infiltration of air pollutants by 80 percent. The ventilation system shall be designed by an engineer certified by the American Society of Heating, Refrigeration and Air-Conditioning Engineers, who shall provide a written report documenting that the system offers the best available technology to minimize outdoor to indoor transmission of air pollution. The project sponsor shall present a plan to ensure ongoing maintenance of ventilation and filtration systems and shall ensure the disclosure to buyers and/or renters regarding the findings of the analysis and inform occupants as to proper use of any installed air filtration.

Significance after Mitigation: The above measure would require development projects in the Project Area to undergo site-specific evaluation and to incorporate the maximum feasible mitigation for impacts resulting from PM_{2.5} or TAC levels in excess of significance thresholds or other appropriate standards as may be amended in the future. Mitigation Measure M-AQ-3 would implement protection from exposure in a similar manner to that required under San Francisco Health Code Article 38, but would be more health protective, in that this measure would consider additional sources of air pollutants in addition to roadway-generated PM_{2.5} emissions and would apply to other sensitive land uses, not only residential projects of 10 or more units. However, because it cannot be determined with certainty that this mitigation measure would reduce impacts to below the applicable significance thresholds, this impact is considered **significant and unavoidable**. However, it is noted that, in the case of individual development projects in the Draft Plan Area and on the Adjacent Parcels, site- and project-specific equipment and other

considerations may lead to a conclusion that the project-specific effect is less than significant or can be mitigated to a less-than-significant level.

Impact AQ-4: The implementation of the Draft Plan and Rezoning of Adjacent Parcels (individually and in combination) would expose existing and future sensitive receptors to substantial levels of fine particulate matter (PM_{2.5}) and toxic air contaminants (TACs) from new vehicles and equipment. (Significant and Unavoidable with Mitigation)

Certain subsequent development projects in the Draft Plan Area and on the Adjacent Parcels would generate potential health risks for existing and future sensitive receptors (primarily residents) in or near the Project 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* [2010]). Operation of these generators could expose nearby sensitive receptors to elevated concentrations of TACs and PM_{2.5}. This would be a significant impact.

Other potential sources of TACs include gasoline stations and auto body shops, as well as other specific commercial activities that emit TACs. (As noted in the setting, new dry cleaners are no longer permitted to use the cleaning solvent perchloroethylene.) However, most new stationary sources would require a permit from the BAAQMD, and BAAQMD permit requirements would generally avoid significant impacts 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 10 in 1 million for the maximally exposed receptor. However, it is possible that new stationary sources, especially sources that do not require a BAAQMD permit (including sources that include large numbers of trucks or buses), could result in health risks that would exceed the applicable significance criteria. This would be a significant impact.

In addition to specific types of land uses, all subsequent development projects would generate vehicle traffic that would contribute to health risks from traffic-generated pollutants, including PM_{2.5}, DPM, and other TACs. As discussed in Section 4.E, Transportation, traffic volumes would increase on Project Area streets. However, given the relatively small level of growth forecast in the Project Area, traffic volumes at intersections evaluated in Section 4.E would increase by no more than 16 percent with the addition of Project and cumulative traffic. These increases would total less than 8,000 daily vehicles. Given that 10,000 daily vehicles is a volume below which BAAQMD does not suggest considering an analysis of localized health risk and hazards from roadway sources, subsequent projects would not generate vehicle trips that would substantially increase exposure of sensitive receptors to roadway-related TACs. Therefore, traffic-generated pollutants resulting from most subsequent development projects (other than projects with heavy concentrations of diesel-powered vehicles) would not result in significant air quality impacts with respect to TACs.

Implementation of **Mitigation Measure M-AQ-4**, Siting of Uses that Emit PM_{2.5} or DPM and Other TACs, would reduce impacts of uses generating PM_{2.5} or DPM and other TACs, but not necessarily to a less-than-significant level.

Mitigation Measure

M-AQ-4: Siting of Uses that Emit PM_{2.5} or DPM and Other TACs. To minimize potential exposure of sensitive receptors to diesel particulate matter (DPM), from new development that includes uses that would be expected to generate substantial levels of toxic air contaminants (TACs) as part of everyday operations, whether from stationary or mobile sources, the San Francisco Planning Department shall require, during the environmental review process, 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, and assessment of the health risk from all potential stationary and mobile sources of TACs generated by the project. 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. If risks to nearby receptors are found to exceed applicable significance thresholds, then emissions controls shall be required prior to project approval to ensure that health risks would not be significant. For example, for a backup diesel generator or other diesel-powered engine such as a fire pump, a newer diesel engine could be required. The BAAQMD requires a health risk screening analysis for Authority to Construct and Permit to Operate for new or modified sources under its authority. Where the cancer risk would exceed 1 in 1 million, BAAQMD requires implementation of Best Available Control Technology for Toxics (known as T-BACT). BAAQMD will not generally permit a stationary emissions source that results in a cancer risk greater than 10 in 1 million. T-BACT may consist of emission control equipment or operational restrictions.

Significance after Mitigation: Because it cannot be determined with certainty that mitigation would result in health risks that would be below applicable BAAMQD significance thresholds, this impact is considered **significant and unavoidable**. However, it is noted that, in the case of individual development projects in the Project Area, site- and project-specific equipment and other considerations may lead to a conclusion that the project-specific effect can be mitigated to a less-than-significant level.

Construction Air Quality Impacts

Impact AQ-5: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels (individually or in combination) would result in construction-period dust emissions from subsequent individual development projects that would contribute to an existing or projected air quality violation or result in a cumulatively considerable increase in criteria pollutants, or expose sensitive receptors to substantial levels of construction dust. (Less than Significant)

Implementation of the *Western SoMa Community Plan* and the Rezoning of Adjacent Parcels would allow for development of new residential, retail, light industrial, office, and community/art space, including a greater amount of development than that which is currently permitted under existing land use controls. Additionally, the Draft Plan proposes streetscape improvements such as bicycle and pedestrian

circulation enhancements and reconfiguration of the travel lanes in certain streets. Most development projects in the Project Area would entail demolition and removal of existing structures 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, worker vehicle emissions, as well as fugitive dust⁶⁷ emissions associated with earth-disturbing activities and other demolition and construction work.

Fugitive dust emissions are typically generated during construction phases. Activities that generate dust include building and parking lot demolition, excavation, and equipment movement across unpaved construction sites. The BAAQMD has recommended that Basic Construction Mitigation (emissions control) Measures be applied to all construction projects.⁶⁸ Of these measures, those applicable to fugitive dust include (1) watering exposed surfaces twice daily, (2) covering trucks hauling loose materials, (3) wet-sweeping streets adjacent to construction sites, (4) limiting travel speeds on unpaved surfaces to 15 miles per hour, (5) paving or otherwise covering unpaved surfaces as soon as possible, and (6) posting signage with contact information for dust complaints.

Measure No. 2 (covering haul trucks) is generally required by law.⁶⁹ In San Francisco, Measures No. 1 (exposed surfaces shall be watered twice daily) and No. 3 (wet sweeping of streets) are required of all construction projects by the City's Dust Control Ordinance (discussed on page 4.G-14). Measure No. 4 (limit speeds to 15 miles per hour on unpaved roads) is not applicable to most projects in San Francisco because few in-city projects are developed on sites large enough to have unpaved roads, and this measure would certainly not be applicable to sites smaller than one-half acre (i.e., less than 21,780 square feet).

As explained above, any project that is subject to the City's Construction Dust Control Ordinance would be compliant with the BAAQMD Basic Construction Mitigation Measures with respect to construction dust. The project sponsors of subsequent individual projects would be required to designate an individual to monitor compliance with dust control requirements. Many of these measures (general dust control measures) apply to smaller sites, of less than one-half acre, in accordance with *San Francisco Building Code* Section 106A.3.2.6.1 (2010). In light of the foregoing analysis, impacts related to construction dust would be less than significant.

Mitigation: None required.

⁶⁷ "Fugitive dust" is dust that is generated during construction and that escapes from a construction site.

⁶⁸ BAAQMD, *CEQA Air Quality Guidelines*, May 2012. This document is available online at: http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en, accessed on June 14, 2012; Table 8-1, p. 8-3.

⁶⁹ California Vehicle Code Section 23114(a) states that "...a vehicle shall not be driven or moved on any highway unless the vehicle is so constructed, covered, or loaded as to prevent any of its contents or load ... from dropping, sifting, leaking, blowing, spilling, or otherwise escaping from the vehicle."

Impact AQ-6: The implementation of the Draft Plan and Rezoning of Adjacent Parcels (individually and in combination) would result in construction-period emissions of criteria air pollutants, including ozone precursors, from subsequent individual development projects that would contribute to an existing or projected air quality violation or result in a cumulatively considerable increase in criteria pollutants. (Significant and Unavoidable with Mitigation)

The BAAQMD has identified screening criteria that would allow determinations that specified projects would result in less-than-significant construction-generated emissions without a detailed air quality analysis, with respect to emissions of criteria air pollutants, assuming that district-recommended “basic” emissions control measures are incorporated into project construction (most of which are generally required of all sites in compliance with the Construction Dust Control Ordinance). Examples of projects whose construction-period emissions would be considered less than significant under the BAAQMD’s screening approach include an office building of no more than 277,000 square feet, a high-rise condominium project of no more than 252 dwelling units, and a hotel of no more than 554 rooms. The screening criteria were determined based on BAAQMD modeling for “typical” construction projects in the Bay Area, which primarily involve low- and mid-rise construction, and assume a larger construction size to accommodate the same square footage or number of residential units than would be the case for many projects in San Francisco. Therefore, some development projects in the Draft Plan Area or on the Adjacent Parcels, even if they do not exceed the development size screening criteria set forth by the BAAQMD, would require a detailed construction air quality analysis that demonstrates compliance with applicable thresholds at the time of development. On the other hand, such a detailed assessment might reveal that a project would result in less-than-significant construction impacts with respect to criteria air pollutants, even though it would exceed the BAAQMD screening criteria.

Criteria air pollutants would be emitted during construction activities from demolition and construction equipment, much of it diesel-powered. As noted above, other emissions during construction would result from trucks used to haul construction materials to and from sites, and from vehicle emissions generated during worker travel to and from sites. As described under “Regulatory Setting” under “Toxic Air Contaminant (TAC) Regulations,” page 4.G-15, the ARB and the EPA have in recent years adopted regulations to tighten emissions standards for off-road diesel engines, including those used in construction equipment, as well as for on-road diesel truck engines. As noted under “Toxic Air Contaminant (TAC) Regulations,” page 4.G-15, over the next approximately 20 years, these regulations are anticipated to result in a decrease in statewide diesel emissions of approximately 75 percent, even with population growth in California.

Still, larger projects in the Draft Plan Area and on the Adjacent Parcels could potentially generate emissions of criteria air pollutants that would exceed the significance criteria on page 4.G-20. For individual developments in the Project Area that exceed the BAAQMD screening criteria for size or are otherwise determined by the San Francisco Planning Department to require detailed analysis, quantification of estimated construction emissions of criteria pollutants would be undertaken through use of a standard air quality model. Some projects in the Draft Plan Area and on the Rezoned Adjacent Parcels could generate criteria air pollutant emissions during construction that exceed one or more of the applicable significance criteria, which would be a significant impact. Implementation of **Mitigation Measure M-AQ-6** would reduce this impact, but it would remain significant and unavoidable.

Mitigation Measure

M-AQ-6: Construction Emissions Minimization Plan for Criteria Air Pollutants. Subsequent development projects that may exceed the standards for criteria air pollutants shall be required to undergo an analysis of the project's construction emissions and if, based on that analysis, construction-period emissions may be significant, 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 for Criteria Air Pollutants (as well as TACs, see Impact AQ-7) shall be designed to reduce criteria 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 are available, portable diesel engines shall be prohibited;
 - b) All off-road equipment shall have:
 - i. Engines that meet or exceed either U.S. Environmental Protection Agency or California Air Resources Board Tier 2 off-road emission standards, *and*
 - ii. Engines that are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy (VDECS).⁷⁰
 - c) Exceptions:
 - i. Exceptions to A(1)(a) may be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that an alternative source of power is limited or infeasible at the project site and that the requirements of this exception provision apply. Under this circumstance, the sponsor shall submit documentation of compliance with A(1)(b) for onsite power generation.
 - ii. Exceptions to A(1)(b)(ii) may be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that a particular piece of off-road equipment with an ARB Level 3 VDECS is: (1) technically not feasible, (2) would not produce desired emissions reductions due to expected operating modes, (3) installing the control device would create a safety hazard or impaired visibility for the operator, or (4) there is a compelling emergency need to use off-road equipment that are not retrofitted with an ARB Level 3 VDECS and the sponsor has submitted documentation to the ERO that the requirements of this exception provision apply. If granted an exception to A(1)(b)(ii), the project sponsor must comply with the requirements of A(1)(c)(iii).

⁷⁰ Equipment with engines meeting Tier 4 Interim or Tier 4 Final emission standards automatically meet this requirement, therefore a VDECS would not be required.

- iii. If an exception is granted pursuant to A(1)(c)(ii), the project sponsor shall provide the next-cleanest pieces of off-road equipment as provided by the step down schedules in Table M-AQ-6 below.

TABLE M-AQ-6
OFF-ROAD EQUIPMENT COMPLIANCE STEP DOWN SCHEDULE*

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

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

** Alternative fuels are not a VDECS

2. The project sponsor shall require the idling time for off-road and on-road equipment be limited to no more than two minutes, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, Chinese) in designated queuing areas and at the construction site to remind operators of the two minute idling limit.
3. The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications.
4. The Plan shall include estimates of the construction timeline by phase with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information may include, but is not limited to: equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation. For 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 using alternative fuels, reporting shall indicate the type of alternative fuel being used.
5. The Plan shall be kept on-site and available for review by any persons requesting it and a legible sign shall be posted at the perimeter of the construction site indicating to the public the basic requirements of the Plan and a way to request a copy of the Plan. The project sponsor shall provide copies of Plan as requested.

Reporting. Monthly reports shall be submitted to the ERO indicating the construction phase and off-road equipment information used during each phase including the

information required in A(4). In addition, for off-road equipment using alternative fuels, reporting shall include actual amount of alternative fuel used.

Within six months of the completion of construction activities, the project sponsor shall submit to the ERO a final report summarizing construction activities. The final report shall indicate the start and end dates and duration of each construction phase. For each phase, the report shall include detailed information required in A(4). In addition, for off-road equipment using alternative fuels, reporting shall include actual amount of alternative fuel used.

Certification Statement and On-site Requirements. Prior to the commencement of construction activities, the project sponsor must certify (1) compliance with the Plan, and (2) all applicable requirements of the Plan have been incorporated into contract specifications.

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.

Significance after Mitigation: Notwithstanding implementation of Mitigation Measure M-AQ-6, it is possible that one or more of the development projects in the Draft Plan Area or on the Adjacent Parcels could result in project-specific construction exhaust emissions impacts that cannot be reduced to a less-than-significant level. Therefore, impacts associated with construction equipment exhaust emissions of criteria pollutants that would result from implementation of the Draft Plan and/or Rezoning of Adjacent Parcels are considered **significant and unavoidable**. It should be noted that the identification of this program-level significant impact does not preclude the finding of future less-than-significant impacts for subsequent projects that comply with applicable screening criteria.

Impact AQ-7: The implementation of the Draft Plan and Rezoning of Adjacent Parcels (individually and in combination) would expose sensitive receptors to substantial levels of toxic air contaminants (TACs) generated by construction equipment. (Significant and Unavoidable with Mitigation)

Diesel-powered construction equipment generates emissions of DPM, which is identified as a carcinogen by ARB. The BAAQMD has published a guide for a screening-level analysis of construction health risk that has determined that a potentially significant impact related to health risk from DPM would be attributable to construction of virtually any project, other than on a site smaller than 0.2 acres (approximately 8,750 square feet, that is within 100 meters (330 feet) of a sensitive receptor (e.g., residence, child care center, hospital, and the like).⁷¹ The BAAQMD notes that its screening methodology incorporates “many worst-case and conservative assumptions,” and states that a project-specific health

⁷¹ BAAQMD, “Screening Tables for Air Toxics Evaluation During Construction,” May 2010. Available online at: <http://www.baaqmd.gov/Home/Divisions/Planning%20and%20Research/CEQA%20GUIDELINES/Tools%20and%20Methodology.aspx>, accessed on September 1, 2010.

risk assessment would likely produce more accurate results. Nevertheless, projects that emit DPM and other TACs during construction in close proximity to sensitive land uses may result in significant impacts. (It is noted that a typical South-of-Market block between First and Eighth Streets measures 825 by 550 feet, while blocks between Eighth and Ninth Streets are 550 feet square and those between Ninth and 11th Streets are 410 feet by 550 feet. A typical North-of-Market block measures 412.5 by 275 feet; thus, a construction project on a North-of-Market block would be within the 330-foot screening distance of most, and in some cases all, other parcels on its block, while a project on even the smaller south of Market blocks might be within 330 feet of only half of the other parcels on its block.) Project-specific health risk assessments for construction of individual projects in San Francisco have identified significant impacts resulting from construction in proximity to sensitive receptors, in the form of an incremental increase in lifetime cancer risk in excess of 10 in 1 million and/or incremental increase in concentration of PM_{2.5} in excess of 0.3 micrograms per cubic meter, both of which are the applicable significance thresholds.

Modeling of construction equipment emissions has revealed that both cancer risk and concentration of PM_{2.5} could be reduced to less-than-significant levels at many, and in some cases, all receptor locations near construction sites (that is, the greatest risk and the greatest concentration would both be less than applicable significance thresholds) if all diesel construction equipment were to meet the interim Tier 4 diesel engine standards.⁷² As described under “Regulatory Setting” under “Toxic Air Contaminant (TAC) Regulations,” page 4.G-15, new diesel engines meeting the interim Tier 4 emissions standards, and Tier 2 or Tier 3 engines retrofitted with a Level 3 Verified Diesel Emissions Control System, can reduce DPM emissions by approximately 85 percent, and would result in a cancer risk that would not exceed 10 chances in 1 million at many sensitive receptor locations near a particular construction site. Additionally, emissions from construction can be reduced by employing certain equipment that is electrically powered or powered by non-diesel fuel such as propane or liquid natural gas (for example, for forklifts).

However, depending on the construction schedules for subsequent development projects, retrofitted Tier 2 and Tier 3 equipment/Tier 4 equipment may not be readily available. Because the Interim Tier 4 standard only took effect in January 2011 for most diesel equipment, and because retrofits are not yet required by ARB, it may take some time—probably several years—for these new engines to become a large part of construction equipment fleets. And, as also noted under “Regulatory Setting,” ARB has delayed implementation of standards for diesel-powered engines already in use by several years. Therefore, the availability of construction equipment with better emission controls and other technologies is uncertain. Implementation of **Mitigation Measure M-AQ-7** would reduce construction-period emissions but the impact would remain significant and unavoidable.

Mitigation Measure

M-AQ-7: Construction Emissions Minimization Plan for Health Risks and Hazards. To reduce the potential health risk resulting from project construction activities, the project sponsor of each development project in the Draft Plan Area and on the Adjacent Parcels shall undertake a project-specific construction health risk analysis to be performed by a

⁷² See, for example, the Transit Center District Plan and Transit Tower EIR (Case Nos. 2007.0558E and 2008.0789E; Final EIR certified May 24, 2012; p. 417.)

qualified air quality specialist, as appropriate and determined by the Environmental Planning Division of the San Francisco Planning Department, for diesel-powered and other applicable construction equipment, using the methodology recommended by the Bay Area Air Quality Management District (BAAQMD) and/or the San Francisco Planning Department. If the health risk analysis determines that construction emissions would exceed health risk significance thresholds identified by the BAAQMD and/or the San Francisco Planning Department, the project sponsor shall develop a Construction Emissions Minimization Plan for Health Risks and Hazards designed to reduce health risks from construction equipment to less-than-significant levels.

All requirements in the Construction Emissions Minimization Plan must be included in contract specifications. The Construction Emissions Minimization Plan is described in Mitigation Measure M-AQ-6, Construction Emissions Minimization Plan for Criteria Air Pollutants.

Significance after Mitigation: Implementation of the Mitigation Measure M-AQ-7 would result in the maximum feasible reduction of diesel emissions that would contribute to construction-period health risk to which sensitive receptors near certain subsequent development projects would be exposed. Although in many cases, the use of interim Tier 4 or Tier 2 or better equipment would reduce the health risk to a level that would not exceed any of the applicable significance thresholds, because it cannot be stated with certainty at this time that health risks would be reduced to below the applicable significance thresholds, and because of the uncertainty concerning the availability and feasibility of various construction equipment that meets the requirements of Mitigation Measure M-AQ-6, Construction Emissions Minimization Plan for Criteria Air Pollutants, this impact is conservatively judged to be **significant and unavoidable**. However, identification of this program-level significant impact does not preclude the finding of future less-than-significant impacts for subsequent development projects in the Draft Plan Area and on the Adjacent Parcels that meet applicable thresholds of significance.

Impact AQ-8: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels (individually and/or in combination) would expose a substantial number of people to objectionable odors. (Less than Significant)

As stated under “Environmental Setting,” above, likely potential sources of odors in the Project Area are generally limited to coffee roasters and auto body shops. Some people may find odors from some restaurants objectionable at times, although restaurants are unlikely to generate a substantial number of complaints. Given the limited odor complaint history for existing uses in the Project Area, as described in the Setting, and given that few, if any, major new odor sources are likely to be developed in the Draft Plan Area or on the Adjacent Parcels, odor impacts would be less than significant.

Mitigation: None required.

Transportation Improvements in the Draft Plan Area (Project-Level Analysis)

Impact AQ-9: The proposed street network improvements would not result in substantial emissions of criteria air pollutants or expose sensitive receptors to substantial pollutant concentrations. (Less than Significant)

As described in Chapter 2, Project Description, this EIR analyzes four specific improvements to the Draft Plan Area transportation network at a project-specific level. These improvements are posting of “truck route” signs on Ninth, 10th, Harrison, and Bryant Streets in the Draft Plan Area; installation of new signalized pedestrian mid-block crossings on Folsom Street; installation of new signalized mid-block pedestrian crossings on Minna and Natoma Streets; and installation of streetscape and traffic calming improvements on Minna, Natoma, and Ringold Streets. Air quality-related effects of these improvements are analyzed here.

Posting of truck route signs would not involve any construction activity. Installation of new signalized crosswalks would involve a very small amount of excavation for installation of electrical lines and signal controllers, as well as the signal lights themselves. Installation of streetscape and traffic calming improvements on Minna, Natoma, and Ringold Streets would involve demolition of portions of the existing sidewalks, installation of new concrete and/or brick sidewalks and bulb-outs, including raised sidewalks across the ends of the mid-block alleys, and new paving, as well as planting of new landscaping. However, this work would be expected to last for less than six months, and therefore would not generate substantial construction-period emissions that would adversely affect nearby receptors. Furthermore, all work done under a City contract would be required to comply with the City’s Clean Construction Ordinance, which requires use of Tier 2 equipment and biodiesel fuel, as described in the Setting. Therefore, construction impacts of the proposed transportation improvements would be less than significant. Because of the limited construction activity involved, the proposed transportation improvements are evaluated below with respect to potential operational air quality impacts.

Truck Route Signs

Truck route signs are proposed to be installed on Ninth Street between Bryant and Mission Streets, 10th Street between Bryant and Mission Streets, Harrison Street between Fourth and 13th Streets, and Bryant Street between Fourth and 13th Streets. For consistency with the transportation analysis in Section 4.E, Transportation and Circulation, of this EIR, this analysis assumes that the posting of truck route signs on these streets would double the percentage of truck traffic on these streets. This shift in truck traffic would only result in relocation of existing trips and would not increase VMT in the region or affect regional air quality. However, consolidation of diesel-powered trucks on these roads would have the potential to affect local PM_{2.5} concentrations and risks from DPM

The transportation analysis found that the increased truck traffic would have little effect on street capacity or peak-hour intersection operations, adding 2.5 seconds of delay or less at all but one intersection. The increased volume of trucks would add more than 9 seconds of delay at the intersection of Fifth and Bryant Streets and the I-80 eastbound on-ramp in the p.m. peak hour, but would not alter the level of service (LOS), which is LOS E and would remain so with the increased truck traffic.

A Health Risk Assessment⁷³ (HRA) was prepared for the proposed project, which presents estimated operational localized health risk impacts. Modeling of DPM and PM_{2.5} concentrations was performed to determine whether sensitive receptors would be exposed to a substantial incremental increase in TAC emissions. The HRA estimates of DPM and PM_{2.5} that would be generated by project construction activities utilized the AMS/EPA Regulatory Model Improvement Committee [AERMIC] model (AERMOD), the EPA-recommended air dispersion model, to determine annual average and peak 1-hour concentrations of DPM and PM_{2.5}, to identify the on-site and off-site MEISR, and to evaluate long-term health risks and hazards resulting from the exposure of the MEISR to redistributed truck emissions.

For each street evaluated, the potential cancer risk and PM_{2.5} concentration was calculated for a hypothetical ground-floor residential receptor at the property line closest to the street, both with existing truck volumes and with the assumed doubling of truck volumes. The modeling indicated that the excess lifetime cancer risk to the hypothetical residential receptors that is attributable to traffic emissions would increase by approximately 35 percent on each affected street, with the greatest increase, 4 in 1 million, on the east (downwind) side of Ninth Street and the south (downwind) side of Harrison Street. This is less than the project-specific significance threshold of 10 in 1 million, as shown on page 4.G-20. The increase would be no more than 2.2 in 1 million on any of the other streets modeled. For PM_{2.5} concentrations, the greatest increase would be 0.1 micrograms per cubic meter. This is less than the project-specific significance threshold of 0.3 micrograms per cubic meter, as shown on page 4.G-20. It is noted that this analysis is conservative because there are relatively few residential units or other sensitive receptors at the ground floor on the streets evaluated. Nevertheless, neither of these results would exceed the applicable significance thresholds, and therefore the truck redistribution impact from installation of truck route signs would be less than significant.

Mid-Block Crosswalks

New mid-block signalized crosswalks would be installed on Folsom Street at Rausch Street (between Seventh and Eighth Streets), on Folsom Street mid-block between Eighth and Ninth Streets, at Seventh and Minna Streets, and at Eighth and Natoma Streets. The new traffic signals would facilitate pedestrian crossing of the major streets where they would be installed, but would not alter the number of vehicles traveling on any of these streets. The new signals would be coordinated with signals at the nearby major intersections, so that minimal delay and disruption of existing traffic flows would be anticipated. As a result, no substantial air quality impacts would ensue, and the impact of installation of mid-block crosswalks would be less than significant.

Pedestrian Improvements on Mid-Block Alleys

Pedestrian improvements would be installed on Minna Street between Seventh and Ninth Streets, on Natoma Street between Seventh and Ninth Streets, and on Ringold Street between Eighth and Ninth Streets. The proposed improvements have not been designed but could include chicanes (widened sidewalks that create a circuitous vehicular route), pavement treatments, sidewalk bulb-outs, and enhanced entrance/exits that would also serve as traffic calming measures. Because traffic volumes on

⁷³ 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. This report is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2008.0877E.

these mid-block streets are very low, these improvements would result in minimal changes in traffic patterns, particularly because most traffic on these streets is presumably local. To the extent that the pedestrian improvements might discourage existing cut-through traffic, the volumes in question are so small as to not represent a meaningful impact relative to vehicular emissions. Therefore, no substantial air quality impacts would ensue, and the impact of installation of pedestrian improvements would be less than significant.

Mitigation: None required.

Impacts of the 350 Eighth Street Project (Project-Level Analysis)

Air quality impacts from the proposed 350 Eighth Street project would fall into two categories: short-term impacts due to construction, and long-term impacts due to project operation. These potential impacts are consistent with those described above for development in the Project Area as a whole. First, during project construction, the 350 Eighth Street project would affect local particulate concentrations primarily due to fugitive dust sources, and would also generate emissions of both criteria air pollutants and TACs from construction equipment exhaust. Over the long term, the 350 Eighth Street project would result in an increase in emissions primarily due to increased motor vehicle trips, as well as from operation of on-site stationary sources—in this case, a backup generator. Area sources (such as landscaping and the use of consumer products) would generate lesser quantities of air pollutants.

Construction Air Quality Impacts

Impact AQ-10: Construction of the 350 Eighth Street project would not result in emissions of criteria air pollutants, including ozone precursors, that would contribute to an existing or projected air quality violation or result in a cumulatively considerable increase in criteria pollutants, and would not result in substantial construction dust. (Less than Significant)

Demolition, grading and new construction activities would temporarily affect local air quality during the 350 Eighth Street project's proposed three-year construction schedule, causing temporary increases in particulate dust and other pollutants. Emissions generated from construction activities include combustion emissions of criteria air pollutants (ROG, NO_x, CO, SO_x, and PM₁₀ and PM_{2.5}) primarily from construction equipment and worker vehicles, evaporative criteria pollutant emissions (ROG) from asphalt paving and architectural coating applications, and dust (including PM₁₀ and PM_{2.5}) primarily from "fugitive" sources; that is, dust generated by construction activities and that escapes from the construction site.

Criteria Air Pollutants

Criteria pollutant emissions of ROG, NO_x, PM₁₀, and PM_{2.5} from construction equipment during construction of the 350 Eighth Street project would incrementally add to the regional atmospheric loading of these pollutants. The Planning Department requires quantification of project-related exhaust emissions and comparison of the emissions to applicable significance thresholds.

The HRA for the proposed Plan included an estimate of construction criteria air pollutant impacts specific to the 350 Eighth Street Project. Average daily criteria air pollutant emissions from project construction were estimated using the California Emissions Estimator Model (CalEEMod). Averaged daily construction criteria air pollutant emissions are based on estimates of construction phasing and equipment expected to be used, as provided by the project sponsor. Where project-specific data were not available (e.g., equipment horsepower and load factors) default assumptions from CalEEMod and ARB's 2011 In-Use Off-Road Equipment Emissions Inventory Model were used to estimate construction emissions. Additional modeling parameters are detailed in the HRA prepared for the proposed project. Average daily emissions are presented in **Table 4.G-5**, page 4.G-54. The methodology used to estimate construction-period emissions is described under "Approach to Analysis" on page 4.G-26.⁷⁴

TABLE 4.G-5
350 EIGHTH STREET PROJECT CONSTRUCTION EXHAUST EMISSIONS ESTIMATES

Construction Phase	Estimated Daily Emissions (pounds per day) ^a			
	ROG	NO _x	PM ₁₀ ^b	PM _{2.5} ^b
Demolition	28	88	16	16
Grading	88	628	28	28
Building Construction	1,600	6,100	288	288
Architectural Coating	11,700	720	76	76
Total Construction Emissions	13,146	7,536	408	408
Average Daily Emissions^c	18	10	0.6	0.6
<i>Significance Threshold</i>	54	54	82	54
Significant?	No	No	No	No

^a Project construction emissions estimates are based on output from CalEEMod v. 2011.1.1 air quality model, using the model's default assumptions. Assumes construction starts in 2013 and ends in 2015.

^b Vehicle exhaust only.

^c Based on 730-day construction schedule

SOURCE: Environ International, 2012

As indicated in Table 4.G-6, emissions from the construction of 350 Eighth Street project would not exceed the applicable significance thresholds for criteria pollutants, and construction-related air pollutant impacts would be less than significant.

Fugitive Dust

Dust can be an irritant causing watering eyes or irritation to the lungs, nose and throat. Demolition, excavation, grading and other construction activities can cause wind-blown dust to add to particulate matter in the local atmosphere. Depending on exposure, adverse health effects can occur due to this

⁷⁴ CalEEMod output sheets are presented in the health risk assessment (see footnote 53), which is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2008.0877E.

particulate matter in general and also due to specific contaminants such as lead or asbestos that may be constituents of soil.

In response, as noted under “Regulatory Setting” (page 4.G-14), the San Francisco Board of Supervisors approved a series of amendments to the *San Francisco Building Code* and *San Francisco Health Code* generally referred hereto as the Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008).

Implementation of a Dust Control Plan as provided for in the Construction Dust Control Ordinance would be consistent with BAAQMD guidance that all construction projects employ basic emissions control measures, including watering all exposed surfaces (e.g., staging areas, soil piles, graded areas) twice daily; covering all haul trucks transporting loose material; daily wet street sweeping of visible mud or dirt onto adjacent public streets; minimizing the time that soils are uncovered; and posting contact information for dust complaints.

At approximately 3.3 acres, the 350 Eighth Street project would be required to prepare a Dust Control Plan as specified in the ordinance.

The regulations and procedures set forth by the *San Francisco Building Code* and *San Francisco Health Code*, including preparation of a Dust Control Plan, would ensure that potential dust-related air quality impacts would be less than significant.

Mitigation: None required.

Impact AQ-11: Construction of the 350 Eighth Street project would expose sensitive receptors to substantial levels of toxic air contaminants (TACs) generated by construction equipment. (Significant and Unavoidable with Mitigation)

To determine if construction emissions could result in adverse health effects at nearby receptors, a health risk assessment and PM_{2.5} analyses were conducted as part of the HRA.⁷⁵ The analysis considered nearby residential units and other sensitive receptors, such as child care centers. The analysis calculated mass emissions of PM₁₀, which was used as a surrogate for DPM, and PM_{2.5} exhaust from on-site heavy-duty diesel-powered construction equipment. The estimated mass emissions were entered into the AERMOD dispersion model using meteorological data from the Mission Bay station to estimate ambient concentrations of PM₁₀ (DPM) and PM_{2.5} associated with the 350 Eighth Street project’s construction activities, as well as other TACs emitted in equipment exhaust. An analysis of cumulative construction risks was undertaken to evaluate whether adjacent and nearby projects would add substantially to cumulative health risks of the 350 Eighth Street project. The review of these other projects within

⁷⁵ 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. This report is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2008.0877E.

1,000 feet of the 350 Eighth Street project site indicated that there are no nearby projects that would make a considerable contribution to cumulative construction air quality impacts.⁷⁶

The analysis determined that the 350 Eighth Street project's construction-related emissions would generate a cancer risk of up to 22 in 1 million for child (infant) receptors, at the maximally exposed individual (MEI). Because this risk exceeds the applicable significance threshold of 10 in 1 million, the construction-related cancer risk exposure impact of the 350 Eighth Street Project would be significant.⁷⁷

The maximum concentration of PM_{2.5} at any of the sensitive receptors associated with the 350 Eighth Street project's construction activities would reach an annual average of 0.13 micrograms per cubic meter. This would not exceed the significance threshold of 0.3 micrograms per cubic meter, and the construction-related PM_{2.5} exposure impact would be less than significant.

The Hazard Indices associated with exposure to construction-period TACs would be less than 1 (0.025 Chronic Hazard Index and 0.04 Acute Hazard Index), and the construction-related hazard exposure impact would be less than significant.

It is noted that the foregoing discussion does not represent an impact unique to the proposed 350 Eighth Street project. Rather, the assessment of health risks from construction emission health risk would be similar for any comparably sized construction project in a densely developed area that contains a mix of land uses.

The project-specific health risk analysis for the proposed 350 Eighth Street project includes a number of conservative assumptions. For example, lifetime cancer risks to residents are calculated based on assumed exposure for 24 hours per day over a 70-year period (scaled to a two year construction period), with additional risk factors included for infants and children because of their greater sensitivity. In reality, most people do not spend this much time daily at home. For exposure of children at child care centers, the analysis assumes exposure for 10 hours per day, meaning that children are present and exposed to ambient outdoor air for 10 hours per day. In reality, children may spend perhaps half or more of the day indoors. However, without detailed knowledge of the building or the operation of nearby child care centers, the 350 Eighth Street project health risk assessment defaulted to more conservative exposure assumptions. However, the foregoing assumptions are consistent with standard protocols for health risk analysis and are therefore incorporated into the analysis for consistency and comparability with other similar analyses.

To reduce the cancer risk to less than the 10 in 1 million significance threshold would require a reduction in DPM emissions from construction of approximately 55 percent. Implementation of **Mitigation Measure M-AQ-11** would minimize construction emissions but not necessarily to a less-than-significant

⁷⁶ Karl F. Heisler, Environmental Science Associates, memorandum to Jessica Range, San Francisco Planning Department, April 11, 2012. Available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2008.0877E.

⁷⁷ According to the BAAQMD, the estimated lifetime cancer risk from all toxic air contaminants in the Bay Area is approximately 400 in 1 million, while the total lifetime cancer risk for all causes is approximately 400,000 in 1 million (BAAQMD, 2010 *Clean Air Plan*, September 2010. Available online at: <http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/Clean-Air-Plans.aspx>; p. 1-17), accessed on September 2, 2010.

level. The construction-related cancer risk impact of the 350 Eighth Street project would therefore remain significant and unavoidable.

Mitigation Measure

M-AQ-11: Construction Emissions Minimization Plan. To reduce the potential health risk resulting from 350 Eighth Street project construction activities, the 350 Eighth Street project sponsor shall prepare a Construction Emissions Minimization Plan designed to reduce construction emissions by a minimum of 55 percent as compared to the emissions calculated in the analysis conducted for this EIR. Depending on the precise construction equipment used, this mitigation could likely be achieved through use of diesel equipment with newer, cleaner engines (such as those meeting the ARB and EPA Interim Tier 4 standards); installation of exhaust filters (ARB-certified Level 3 Verified Diesel Emissions Control System, or VDECS; and/or use of certain equipment that is electrically powered or powered by non-diesel fuel such as propane or liquid natural gas (for example, for forklifts).

All requirements in the Construction Emissions Minimization Plan must be included in contract specifications. The Construction Emissions Minimization Plan may include, but is not limited to, the following requirements designed to reduce construction-period emissions:

- Limit idling times by either shutting equipment off when not in use or reducing the maximum idling time to two minutes;
- Use Interim Tier 4 equipment where such equipment is available and feasible for use (the primary option);
- Use equipment meeting Tier 2 or higher emissions standards;
- Use other late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and add-on devices such as particulate filters;
- Require that construction contractors not use diesel generators for construction purposes where feasible alternative sources of power are available (hydroelectric power, electric power, propane, etc), and that all diesel generators used for 350 Eighth Street project construction meet Tier 4 emissions standards; and/or
- Employ other options as such become available.

The 350 Eighth Street project sponsor shall submit the Construction Emissions Minimization Plan (Plan) to the Environmental Review Officer (ERO) for review and approval by an Environmental Planning Air Quality Specialist prior to the commencement of construction activities. Should the Construction Emissions Minimization Plan determine that it is infeasible to reduce construction-period emissions to below the 55 percent emissions reduction standard required, the plan must document, to the satisfaction of the ERO, that the sponsor has implemented all feasible mitigation measures to reduce construction emissions and why additional measures to meet the plan's performance

standard are infeasible. 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.

Significance after Mitigation: Implementation of the above measure would result in the maximum feasible reduction of diesel emissions that would contribute to construction-period health risk, thereby lowering both lifetime cancer risk and the concentration of PM_{2.5} to which receptors would be exposed. However, Tier 4 equipment is not readily available at this time. Both federal (EPA) and ARB Interim Tier 4 standards took effect in January 2011 for new equipment, and it is anticipated that it will take several years, at a minimum, for this equipment to be placed in widespread use, because heavy construction equipment typically has a useful life of 15 years or more. Meanwhile, as also noted above under “Toxic Air Contaminant (TAC) Regulations,” ARB has delayed implementation of emissions standards for existing off-road diesel engines, including requirements that construction equipment use so-called Best Available Control Technology or that each operator’s fleet of equipment meet a specified average emissions standards. Moreover, retrofitting of off-road equipment with Level 3 VDECS is not yet required by ARB.

It is noted that construction emissions could be lower if newer equipment is employed or less powerful or smaller diesel equipment is used than assumed in the analysis. Emissions could be higher if more or larger diesel equipment is used. Depending on the regulations in place at the time construction begins, and depending on the precise mix of diesel-powered construction equipment employed, it is possible that the impact would be reduced to a less-than-significant level. However, because it cannot be stated with certainty that estimated excess cancer risk from construction emissions would be reduced to below the applicable significance thresholds, and because of the uncertainty concerning the availability and feasibility of using construction equipment that meets the performance requirements of Mitigation Measure M-AQ-11, this impact is conservatively judged to be **significant and unavoidable**.

Operational Air Quality Impacts

Impact AQ-12: Operation of the proposed 350 Eighth Street project would not conflict with the 2010 Clean Air Plan, violate or contribute to violation of an air quality standard, or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment, either individually or cumulatively. (Less than Significant)

Based on the Proposed Project transportation analysis,⁷⁸ the 350 Eighth Street project would generate approximately 1,870 vehicle trips per day. Operational emissions from project traffic and from operation of the proposed building were calculated using the CalEEMod (version 2011.1.1) model, and are presented in **Table 4.G-6**, page 4.G-59. As shown in Table 4.G-7, emission increases attributable to the 350 Eighth Street project would be substantially below the applicable significance thresholds. Therefore, the 350 Eighth Street project’s effects of regional criteria pollutant emissions would be less than significant.

⁷⁸ LCW Consulting, *Western SoMa Community Plan Transportation Study*, June 15, 2012

TABLE 4.G-6
350 EIGHTH STREET PROJECT ESTIMATED DAILY REGIONAL EMISSIONS (2016)

	Daily Projected Emissions (Pounds per Day) ^{a,b,c}			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Area-Source Emissions	12	1	<1	<1
Mobile-Source (Vehicle) Emissions	15	27	22	2
TOTAL	27	29	22	2
<i>Significance Threshold</i>	<i>54</i>	<i>54</i>	<i>82</i>	<i>54</i>
Significant?	No	No	No	No

	Annual Projected Emissions (Tons per Year) ^{a,b,c}			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Area-Source Emissions	2.3	0.3	<0.1	<0.1
Mobile-Source (Vehicle) Emissions	0.8	1.4	1.3	0.1
TOTAL	3.1	1.6	1.4	0.1
<i>Significance Threshold</i>	<i>10</i>	<i>10</i>	<i>15</i>	<i>10</i>
Significant?	No	No	No	No

NOTES:

^a Emission factors were generated by the CalEEMod (v. 2011.1.1) model for San Francisco County, and assume a default vehicle mix. All daily estimates are the average of summer and winter conditions. Traffic generated emissions based on trip generation from the project transportation study.

^b Columns may not total due to rounding.

^c Emergency generator emissions not included, as they were modeled in the SCREEN3 model and found to amount to less than 0.002 pounds per day of any pollutant averaged over the course of the year, and less than 0.02 pounds per day of any pollutant on a day when the generator is tested.

SOURCE: Environ International, 2012; Environmental Science Associates, 2012.

The proposed 350 Eighth Street project would be generally consistent with the *San Francisco General Plan*, as proposed for amendment by the *Western SoMa Community Plan*. Additionally, the General Plan, Planning Code, and City Charter implement various Transportation Control Measures identified in the *2010 Clean Air Plan* through the City's Transit First Program, bicycle parking requirements, transit development impact fees applicable to commercial uses, and other actions.

Consistency with this *2010 Bay Area Clean Air Plan* is the basis for determining whether the proposed project would conflict with or obstruct implementation of an applicable air quality plan. A consistency analysis of the proposed project in relation to the goals and objectives of the *Clean Air Plan* focuses on the proposed project's support of the primary goals in the *Clean Air Plan*, the proposed project's implementation of applicable control measures in the *Clean Air Plan*, and evaluation of any potential disruption to or hindrance of implementation of the *Clean Air Plan*. In determining whether a proposed project or plan would conflict with the *Clean Air Plan*, three criteria area evaluated: would the Project implement the applicable control measures in the *Clean Air Plan*; would the Project disrupt or hinder implementation of any of these control measures; and would the Project support the primary goals of the *Clean Air Plan*?

The Draft Plan would be consistent with the Transportation Control Measures in the *2010 Clean Air Plan*, as described in the analysis under Impact AQ-1, above, and the 350 Eighth Street project would be an integral part of the Draft Plan. The 350 Eighth Street project would not demonstrably interfere with any of the *Clean Air Plan* control measures, and would actively support measures TCM D-1 (bicycle access and facilities improvement), by providing on-site bicycle storage; TCM D-2 (pedestrian access and facilities improvement), by providing a pedestrian extension of Gordon Alley to Ringold Street; TCM D-3 (local land use strategies), by developing a mixed-use project at a residential density greater than currently permitted on the site; LUM 5 (reduction of health risk), through compliance with Article 38 of the San Francisco Health Code; ECM 1 (energy efficiency), through compliance with the City's *Green Building Code* requirements. As described in Impact AQ -9 and AQ-11, construction and operation of the proposed project would not contribute substantially to a projected air quality violation or result in a cumulatively considerable net increase of any criteria air pollutant for which the SFBAAB is in nonattainment construction emissions. In light of the above, the 350 Eighth Street project would not make a considerable contribution to cumulative air quality impacts, nor would it interfere with implementation of the *2010 Clean Air Plan*, which is the applicable regional air quality plan developed to improve air quality and to effectively meet the state and federal ambient air quality standards.

Mitigation: None required.

Local Air Quality Impacts

Impact AQ-13: Operation of the proposed 350 Eighth Street project would not result in emissions of carbon monoxide that would exceed state or federal standards, either individually or cumulatively. (Less than Significant)

The San Francisco Bay Area Air Basin is designated as "attainment" for carbon monoxide (CO). (CO emissions, and thus ambient concentrations of CO, have decreased dramatically since the catalytic converter was introduced in 1975.) No exceedances of the state (California) ambient air quality standards or national ambient air quality standards for CO have been recorded at nearby monitoring stations since 1991."⁷⁹ Accordingly, as noted in under "Significance Criteria," above, CO impacts are not expected to exceed the applicable air quality standard if a project would not increase traffic volumes at local intersections to more than 44,000 vehicles per hour. As described under Impact AQ-1, above, the greatest volume at any of the study intersections would be approximately 6,750 vehicles per hour (under cumulative conditions). Therefore, effects related to CO concentrations from operations of the 350 Eighth Street project would be less than significant.

Mitigation: None required.

⁷⁹ BAAQMD, *CEQA Air Quality Guidelines*, May 2012. This document is available online at: http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en, accessed on June 14, 2012; p. 6-1.

Impact AQ-14: The proposed 350 Eighth Street project would not generate TACs that would affect on- or off-site receptors. (Less than Significant)

An emergency 400 horsepower diesel generator would be installed and periodically tested at the 350 Eighth Street project site. This generator would be the only operational source of TACs generated at the proposed Project site. The health risk assessment conducted for the project included an evaluation of risks from emissions of the proposed generator assuming maximum hours of operation per year allowed by BAAQMD. Dispersion modeling was conducted using SCREEN3 and worst case meteorological assumptions as well as algorithms to account for the downwash effects of the proposed and adjacent buildings. Risks were calculated for both on-site and off-site receptors.

For off-site receptors, the estimated cancer risk is 1.4 in 1 million and the chronic non-cancer HQ would be 0.00053. The estimated excess lifetime cancer risk and chronic noncancer HQ would be below the significance thresholds of 10 in 1 million and 1.0, respectively. The maximum acute non-cancer HI associated with exposure to the single peak hour of emissions from the emergency generator is estimated to be 0.12, which is below the significance threshold of 1.0. The estimated maximum concentration of PM_{2.5} is estimated to be 0.0026 micrograms per cubic meter, which would be below the significance threshold of 0.03 micrograms per cubic meter.

For on-site receptors, the estimated cancer risk, the chronic non-cancer HQ the maximum acute non-cancer HI and the estimated maximum concentration of PM_{2.5} are estimated to be the same as the off-site receptor, all below significance thresholds. Consequently, the proposed 350 Eighth Street project would have a less than significant impact with regard to generation of TAC emissions that would expose sensitive receptors to substantial pollutant concentrations.

Mitigation: None required.

Impact AQ-15: The proposed 350 Eighth Street project would not expose sensitive receptors at the 350 Eighth Street project site to substantial levels of toxic air contaminants (TACs). (Less than Significant)

As stated under the discussion of project-level significance criteria, page 4.G-19, the applicable criteria for determining significance of community risk and hazard impacts when siting a new receptor are an increase in lifetime cancer risk of 100 chances in 1 million, an increase in the non-cancer risk equivalent to a chronic or acute "Hazard Index" greater than 10.0, or an increase in the annual average concentration of PM_{2.5} in excess of 0.8 micrograms per cubic meter. The BAAQMD recommends that evaluation of the health risk to new receptors from the combination of all existing sources, within a 1,000-foot radius of the new receptor—in this case, 350 Eighth Street. Because residents would not occupy the site until after construction is complete, on-site residents would not be exposed to construction-related health risks.

To evaluate the risk to 350 Eighth Street project residents, modeling was undertaken for high-volume roadways, Caltrain locomotives, and stationary sources of TACs within 1,000 feet of the 350 Eighth Street

project site.⁸⁰ Also included was the proposed emergency diesel generator that would be installed at the 350 Eighth Street project site and addressed in Impact AQ-14. Beyond Caltrain operations, the 350 Eighth Street project site vicinity contains no major non-permitted stationary sources, such as transit depots, warehousing and distribution centers, or manufacturing facilities that emit large volumes of diesel exhaust or other TACs, with the exception of the existing Golden Gate Transit bus storage yard on the 350 Eighth Street project site, which is planned to be relocated.⁸¹

Assessment of cumulative health risks to proposed residents was conducted using data from a variety of sources. Dispersion modeling using AERMOD was conducted to determine concentrations of TACs and PM_{2.5} from Caltrain operations and the Harrison Street Shell Station while CAL3QHCR model was used to estimate TAC and PM_{2.5} concentrations from roadways. For stationary sources other than the Harrison Street Shell station, risk data was provided by BAAQMD. Risks from the proposed generator were estimated using the SCREEN3 model.

Existing sources within 1,000 feet, include several streets (including project traffic on these streets); Caltrain locomotives; and a number of stationary sources including two gasoline stations, two other non-publicly-accessible gasoline filling stations, several auto body shops, other commercial establishments, and three emergency generators. The modeling undertaken for the health risk assessment indicates that these sources would not result in exposure of 350 Eighth Street project residents to an incremental additional lifetime cancer risk in excess of 100 in 1 million, a PM_{2.5} concentration in excess of 0.8 micrograms per cubic meter, or a health index in excess of 1.0 (see **Table 4.G-7**, page 4.G-63). Because the results would all be below the applicable significance thresholds on page 4.G-20, the impact of risk and hazard exposure of new sensitive receptors of the 350 Eighth Street Project would be less than significant.

As noted under “Regulatory Setting,” Article 38 of the San Francisco Health Code requires air quality modeling for new residential projects of 10 or more units located in proximity to high-traffic roadways. As the 350 Eighth Street project would include residential units, dispersion modeling was conducted in accordance with Article 38. Traffic volumes on the elevated I-80 freeway and on nearby streets were included in the analysis. The results indicate that 350 Eighth Street project residents would be exposed to PM_{2.5} concentrations in excess of the Article 38 action level of 0.2 micrograms per cubic meter. Therefore, under Article 38, the 350 Eighth Street project would be required to comply with Article 38 by incorporating into the project design measures to reduce PM_{2.5} concentrations indoors by an 80 percent performance standard. Article 38 requires, as part of the building permit approval process, the submittal to the Department of Public Health for review and approval of a ventilation system design, prepared by a licensed design professional, that is capable of removing 80 percent of PM_{2.5} from outdoor air.

Mitigation: None required.

⁸⁰ 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. This report is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2008.0877E.

⁸¹ Golden Gate Transit is scheduled to relocate its bus storage yard to Perry Street between Harrison and Bryant Streets in 2013.

TABLE 4.G-7
HEALTH RISKS AT THE 350 EIGHTH STREET PROJECT SITE (WITH TRUCK ROUTE SIGNAGE)

Roadway Health Risk^a					
Street	Daily Volume	Distance^b	Cancer Risk^c	Chronic HI^d	PM_{2.5} Conc.^e
Seventh Street	29,135	930	0.25	0.00022	0.005
Eighth Street	17,785	20	1.13	0.00102	0.02
Ninth Street	34,810	150	2.8	0.00212	0.04
10 th Street	15,230	650	0.64	0.00048	0.01
Folsom Street	12,705	200	0.56	0.00051	0.01
Harrison Street	25,770	15	2.4	0.00172	0.03
Bryant Street	11,225	670	0.012	0.00009	0.002
I-80 Freeway	123,200	525	8.1	0.00583	0.10
I-80 Ramps	Varies	Varies	3.1	0.00224	0.04
U.S. 101 Ramps	Varies	Varies	0.14	0.00010	0.002
Project-Generated Traffic			0.4	0.00374	0.0150
Non-Permitted Sources		Distance^f	Cancer Risk^c	Chronic HI^d	PM_{2.5} Conc.^e
Caltrain Locomotive Operations		Varies	5.4	0.00199	0.01
Stationary Sources					
Use^g	Address	Distance^f	Cancer Risk^c	Chronic HI^d	PM_{2.5} Conc.^e
Project Generator ^h	350 Eighth Street	n/a	1.4	0.00053	0.0026
16342-Chow's Auto	384 Seventh St.	925	0.0	0.000	0.00
5701-Trinis Body Shp	1150 Howard St.	250	0.0	0.000	0.00
G11284-Chevron	1298 Howard St.	925	0.21	0.00010	0.00
13323-AA Auto Rpr.	255 10th Street	720	0.0	0.000	0.00
16069-Chilton Auto	320 10th Street	650	0.0	0.000	0.00
12454-Martinelli Grfx	1370 Harrison St.	525	0.0	0.000	0.00
17512-Costco (Gener.)	450 10th Street	720	6.9	0.0024	0.012
16874-Intl. Sprt. Mtrs.	440 Ninth Street	750	0.0	0.000	0.00
2585-Hoeck Iron Wks.	1184 Harrison St.	670	0.0	0.000	0.00
G12276-Shell ⁱ	1201 Harrison St.	90	2.0	0.0014	0.00
G8808-CHP	455 Eighth Street	365	3.8	0.003	0.00
11187-CHP	455 Eighth Street	365	0.02	0.000	0.00
9874-First Calif. Press	1075 Folsom St.	990	0.0	0.000	0.00
17675-SF Jail (Gener.)	425 Seventh St.	975	0.65	0.00024	0.0012
17614-German Mtrs.	1150 Harrison St.	740	0.0	0.000	0.00
8120-Meyers Sht. Mtl.	447 10 th Street	655	0.0	0.000	0.00
9753-Matt's Auto Bdy	1465 Folsom St.	935	0.0	0.000	0.00
G6153-CCSF gasoline	950 Bryant St.	750	0.34	0.00042	0.00
Total Risk			40	0.03	0.30
Significance Thresholds			100.0	10.0	0.8
Significant?			No	No	No

NOTES: **Bold-face** indicates exceedance of significance threshold.

^a Roadway risk modeled in the CAL3QHCR air quality model.

^b Distance from edge of nearest travel lane to maximally exposed individual (MEI) at the project site.

^c Cancer risk in chances (cases) per 1 million

^d Chronic HI – Chronic Hazard Index

^e PM_{2.5} concentration in micrograms per cubic meter

^f Distance from source to closest project site receptor.

^g Number preceding name of source indicates BAAQMD-designated source identification.

^h Risk from project's emergency generator modeled in SCREEN3 air quality model. Generator assumed to comply with current EPA and California Air Resources Board emissions standard and would therefore meet EPA/ARB Tier 4 Final standard. Because the placement of the generator is not known at this time, modeling assumes exhaust stack on roof; results reported are worst-case for roof stack location.

ⁱ Shell gasoline station health risk modeled using AERMOD air quality model; for other stationary sources, risks calculated using BAAQMD screening methodology.

SOURCE: Environ International, 2012

Impact AQ-16: Operation of the proposed 350 Eighth Street project would not create objectionable odors affecting a substantial number of people. (Less than Significant)

The proposed 350 Eighth Street project does not include any uses that would be expected to generate odors that would be likely to disturb project residents or persons living or working nearby. Therefore, impacts related to odors would be less than significant.

Mitigation: None required.

Cumulative Impacts

Impact C-AQ-1: The implementation of the Proposed Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would contribute considerably to cumulative air quality impacts from emissions of criteria air pollutants. (Significant and Unavoidable with Mitigation)

As stated on page 4.G-19, the BAAQMD considers criteria air pollutant impacts to be cumulative by nature. As indicated in Impact AQ-5, construction of subsequent projects in the Draft Plan Area and/or on the Adjacent Parcels, would potentially result in significant unavoidable impacts with respect to criteria pollutant emissions from construction activities. Accordingly, the Draft Plan and the Rezoning of Adjacent Parcels would result in a significant cumulative impact on air quality. Implementation of Mitigation Measure M-AQ-5 would reduce this impact, but it would remain significant and unavoidable. However, because neither the proposed transportation improvements nor the 350 Eighth Street project would result in construction-related criteria air pollutants in excess of the project-level significance thresholds, neither project would make a considerable contribution to this cumulative impact.

Operational criteria air pollutant emissions of the Draft Plan and Rezoning of Adjacent Parcels, addressed individually and cumulatively in Impact AQ-1, would not make a considerable contribution to regional emissions of criteria air pollutants, given the Draft Plan's and the proposed Rezoning's consistency with the *Clean Air Plan*. However, subsequent individual projects could emit criteria air pollutants in excess of 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 M-AQ-2. However, because it cannot be stated with certainty that M-AQ-2 would reduce cumulative criteria air pollutant impacts to less than significant levels, this impact is considered significant and unavoidable with mitigation. The proposed transportation improvements would result in no operational emissions, as they would affect air quality only during construction. With respect to the 350 Eighth Street project, as described in Impact AQ-12, operational emissions of criteria pollutants would be below levels considered to represent a cumulatively considerable contribution to air quality, and therefore cumulative operational criteria air pollutant impacts of this project would be less than significant, as well.

Mitigation Measures

M-C-AQ-1: Implement **Mitigation Measure M-AQ-2**, Transportation Demand Management Strategies for Future Development, p.4.G-35, and **Mitigation Measure M-AQ-6**, Construction Emissions Minimization Plan for Criteria Air Pollutants, discussed on page 4.G-46.

Significance after Mitigation: Even with implementation of these mitigation measures, cumulative impacts with respect to the Draft Plan and the Rezoning of Adjacent Parcels would be **significant and unavoidable**.

Impact C-AQ-2: The implementation of the Proposed Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would result in cumulative exposure of sensitive receptors to substantial levels of toxic air contaminants (TACs). (Significant and Unavoidable with Mitigation)

As described above in Impacts AQ-3, AQ-4 and AQ-7, above, the Draft Plan and Rezoning of Adjacent Parcels would result in significant effects with respect to exposure to health risks from emissions of TACs related to the siting of new sensitive receptors, the siting of new stationary sources of TACs, and construction. These emissions would contribute considerably to cumulative effects with respect to health risks. Therefore, the Draft Plan and the Rezoning of Adjacent Parcels would result in a significant impact with respect to cumulative TAC emissions.

With respect to the 350 Eighth Street project and similar to the assessment of risk and hazard impacts for on-site receptors addressed in Impact AQ-15, the applicable criteria for determining significance of community risk and hazard impacts when siting a new receptor are an increase in lifetime cancer risk of 100 chances in 1 million, an increase in the non-cancer risk equivalent to a chronic or acute "Hazard Index" greater than 10.0, or an increase in the annual average concentration of PM_{2.5} in excess of 0.8 micrograms per cubic meter. However, the assessment of off-site receptor impact includes health risks and hazard increments from construction activities as well as other operational sources relating to the project.

Assessment of cumulative health risks to maximally impacted off-site receptor was conducted using data from a variety of sources. Dispersion modeling using AERMOD was conducted to determine the concentration of TACs and PM_{2.5} from construction, Caltrain operations and the Harrison Street Shell Station while CAL3QHCR model was used to estimate TAC and PM_{2.5} concentrations from roadways. For stationary sources other than the Harrison Street Shell station, risk data was provided by BAAQMD. Risks from the proposed generator were estimated using the SCREEN3 model.

The modeling undertaken for the health risk assessment indicates that existing sources within 1,000 feet, including several streets (including project traffic on these streets); construction activities of the project, Caltrain locomotives; and a number of stationary sources including two gasoline stations, two other non-publicly-accessible gasoline filling stations, several auto body shops, other commercial establishments, and three emergency generators, would not result in exposure of the maximally exposed off-site receptor

to an incremental additional lifetime cancer risk in excess of 100 in 1 million, a PM_{2.5} concentration in excess of 0.8 micrograms per cubic meter, or a health index in excess of 1.0 (see **Table 4.G-8**, page 4.G-67). Because the results would all be below the applicable significance thresholds on page 4.G-18, cumulative health risks in the vicinity of the 350 Eighth Street project would be less than significant.

Mitigation Measures

M-C-AQ-2: Implement **Mitigation Measure M-AQ-3**, Reduction in Exposure to Toxic Air Contaminants for New Sensitive Receptors, page 4.G-41, **Mitigation Measure M-AQ-4**, Siting of Uses that Emit PM_{2.5} or DPM and Other TACs, page 4.G-43, and **Mitigation Measure M-AQ-7**, Construction Emissions Minimization Plan for Health Risks and Hazards, page 4.G-49.

Significance after Mitigation: Even with implementation of these mitigation measures, cumulative impacts with respect to emissions of TACs from the Draft Plan and the Rezoning of Adjacent Parcels would be **significant and unavoidable**.

TABLE 4.G-8
CUMULATIVE HEALTH RISKS AT MAXIMALLY EXPOSED OFF-SITE RECEPTOR (WITH TRUCK ROUTE SIGNAGE)

Roadway Health Risk^a				
Street	Daily Volume	Cancer Risk^c	Chronic HI^d	PM_{2.5} Conc.^e
Seventh Street	29,135	0.15	0.00013	0.003
Eighth Street	17,785	0.53	0.00047	0.01
Ninth Street	34,810	8.8	0.00657	0.12
10 th Street	15,230	1.21	0.00090	0.02
Folsom Street	12,705	0.67	0.00061	0.01
Harrison Street	25,770	2.5	0.00187	0.03
Bryant Street	11,225	0.09	0.00006	0.001
I-80 Freeway	123,200	4.9	0.00353	0.06
I-80 Ramps	Varies	1.2	0.00088	0.02
U.S. 101 Ramps	Varies	0.18	0.00013	0.002
Project-Generated Traffic		0.4	0.00374	0.0150
Non-Permitted Sources		Cancer Risk^c	Chronic HI^d	PM_{2.5} Conc.^e
Project Construction		22	0.025	0.13
Caltrain Locomotive Operations		4.4	0.00163	0.0082
Stationary Sources				
Use^g	Address	Cancer Risk^c	Chronic HI^d	PM_{2.5} Conc.^e
Project Generator ^h	350 Eighth Street	1.4	0.00053	0.0026
16342-Chow's Auto	384 Seventh St.	0.0	0.000	0.00
5701-Trinis Body Shp	1150 Howard St.	0.0	0.000	0.00
G11284-Chevron	1298 Howard St.	0.19	0.00009	0.00
13323-AA Auto Rpr.	255 10th Street	0.0	0.000	0.00
16069-Chilton Auto	320 10th Street	0.0	0.000	0.00
12454-Martinelli Grfx	1370 Harrison St.	0.0	0.000	0.00
17512-Costco (Gener.)	450 10th Street	5.2	0.0018	0.009
16874-Intl. Sprt. Mtrs.	440 Ninth Street	0.0	0.000	0.00
2585-Hoeck Iron Wks.	1184 Harrison St.	0.0	0.000	0.00
G12276-Shell ⁱ	1201 Harrison St.	0.3	0.0002	0.00
G8808-CHP	455 Eighth Street	3.8	0.003	0.00
11187-CHP	455 Eighth Street	0.02	0.000	0.00
9874-First Calif. Press	1075 Folsom St.	0.0	0.000	0.00
17675-SF Jail (Gener.)	425 Seventh St.	0.65	0.00024	0.0012
17614-German Mtrs.	1150 Harrison St.	0.0	0.000	0.00
8120-Meyers Sht. Mtl.	447 10 th Street	0.0	0.000	0.00
9753-Matt's Auto Bdy	1465 Folsom St.	0.0	0.000	0.00
G6153-CCSF gasoline	950 Bryant St.	0.21	0.00025	0.00
Total Risk		59	0.05	0.44
Significance Thresholds		100.0	10.0	0.8
Significant?		No	No	No

NOTES: **Bold-face** indicates exceedance of significance threshold.

^a Roadway risk modeled in the CAL3QHCR air quality model.

^b Distance from edge of nearest travel lane to maximally exposed individual (MEI) at the project site.

^c Cancer risk in chances (cases) per 1 million

^d Chronic HI – Chronic Hazard Index

^e PM_{2.5} concentration in micrograms per cubic meter

^f Distance from source to closest project site receptor.

^g Number preceding name of source indicates BAAQMD-designated source identification.

^h Risk from project's emergency generator modeled in SCREEN3 air quality model. Generator assumed to comply with current EPA and California Air Resources Board emissions standard and would therefore meet EPA/ARB Tier 4 Final standard. Because the placement of the generator is not known at this time, modeling assumes exhaust stack on roof; results reported are worst-case for roof stack location.

ⁱ Shell gasoline station health risk modeled using AERMOD air quality model; for other stationary sources, risks calculated using BAAQMD screening methodology.

SOURCE: Environ International, 2012

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4.H. Greenhouse Gas Emissions

This section provides a description of global climate change, greenhouse gas (GHG) emissions, the existing regulatory framework governing GHG emissions, and an analysis of the potential impacts related to GHGs associated with implementation of the Proposed Project, consisting of the *Western SoMa Community Plan*, the Rezoning of Adjacent Parcels, and the 350 Eighth Street project. The Proposed Project is evaluated for compliance with San Francisco's *Strategies to Address Greenhouse Gas Emissions*, recognized as meeting the criteria of a qualified GHG Reduction Strategy by the Bay Area Air Quality Management District (BAAQMD).

Environmental Setting

Greenhouse Gases and Global Climate Change

Gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs) because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHGs has been implicated as a driving force for global climate change. The primary GHGs are carbon dioxide, methane, nitrous oxide, ozone, and water vapor.

Individual projects contribute to the cumulative effects of climate change by emitting GHGs during demolition, construction, and operational phases. While the primary GHGs in the atmosphere are naturally occurring, carbon dioxide (CO₂), methane, and nitrous oxide are largely emitted from human activities, accelerating the rate at which these compounds occur within the earth's atmosphere. Emissions of carbon dioxide are largely by-products of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural practices and landfills. Other GHGs include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes. Emissions of GHGs are typically reported in "carbon dioxide-equivalent" (CO₂E) measures.¹

There is international scientific consensus that human-caused increases in GHGs have contributed and will continue to contribute to global warming. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years.² Secondary effects are likely to include global rise in sea level, impacts on agriculture, changes in disease vectors, and changes in habitat and biodiversity.

Greenhouse Gas Emissions in California and the Bay Area

The California Air Resources Board (ARB) estimated that in 2008 California produced about 478 million gross metric tons (MMT CO₂E; about 525 million U.S. tons) of CO₂E GHG emissions.³ ARB found that transportation is the source of 37 percent of the state's GHG emissions, followed by electricity generation

¹ Because of the differential heat absorption potential of various GHGs, GHG emissions are frequently measured in "carbon dioxide-equivalents," which present a weighted average based on each gas's heat absorption (or "global warming") potential.

² California Climate Change Portal. Frequently Asked Questions About Global Climate Change. Available online at: <http://www.climatechange.ca.gov/publications/faqs.html>, accessed on January 1, 2011.

³ The abbreviation for "million metric tons" is MMT; thus, "million metric tons of CO₂ equivalents" is written as MMT CO₂E.

(both in-state and out-of-state) at 24 percent and industrial sources at 19 percent. Commercial and residential fuel use (primarily for heating) accounted for 9 percent of GHG emissions.⁴

In the Bay Area, fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) and the industrial/ commercial sector were the two largest sources of GHG emissions, each accounting for about 36 percent of the Bay Area's 95.8 MMTCO₂E (105.4 million U.S. tons) of GHG emissions in 2007. Industrial and commercial sources (including office and retail uses) were the second largest contributors of GHG emissions with about 34 percent of total emissions. Electricity production accounts approximately 16 percent of the Bay Area's GHG emissions, followed by residential fuel usage (e.g., home water heaters, furnaces, etc.) at 7 percent, off-road equipment at 3 percent, and agriculture at 12 percent. Among industrial sources, oil refining currently accounts for more than 40 percent of GHG emissions, or approximately 15 percent of the total Bay Area GHG emissions.⁵

California has taken a leadership role in addressing the trend of increasing GHG emissions, with the passage in 2006 of California Assembly Bill 32 (AB 32), the Global Warming Solutions Act. This legislation is discussed below, under "Regulatory Setting."

Regulatory Setting

Federal Actions

Currently, there is no federal legislation requiring reductions in GHG emissions. Rather, the United States Environmental Protection Agency (EPA) administers a variety of voluntary programs and partnerships with GHG emitters in which the EPA partners with industries producing and utilizing synthetic GHGs to reduce emissions of particularly potent GHGs. There are federal actions requiring increasing automobile efficiency, an endangerment finding for CO₂, and a recently finalized regulation requiring large sources of GHG emissions to report their emissions to the EPA. In addition, there are several bills pending in Congress that are attempting to regulate GHG emissions in the United States; most of these bills require a cap and trade program in which GHG emissions would be reduced overall through a market-driven approach.

In December 2009, in response to a U.S. Supreme Court ruling, the EPA made a finding under the Clean Air Act that current and projected atmospheric concentrations of the six generally recognized GHGs—CO₂, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride—"threaten the public health and welfare of current and future generations," and that emissions of these gases from new cars and trucks "contribute to the greenhouse gas pollution which threatens public health and welfare."⁶ While not in itself imposing any regulatory requirements, this "endangerment finding" under the Clean Air Act was required before EPA could issue regulations, and allowed the agency to adopt GHG emissions standards that it proposed in September 2009, in conjunction with new fuel economy

⁴ California Air Resources Board, "California Greenhouse Gas Inventory for 2000-2008—by Category as Defined in the Scoping Plan." Available online at: http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-08_2010-05-12.pdf, accessed on January 1, 2011.

⁵ BAAQMD, *Source Inventory of Bay Area Greenhouse Gas Emissions: Base Year 2007*, December 2008. Available online at: http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Emission%20Inventory/regionalinventory2007_003_00_0_000_000.ashx, accessed on April 19, 2012.

⁶ EPA website: <http://www.epa.gov/climatechange/endangerment.html>. Reviewed January 2, 2011.

standards simultaneously proposed by the National Highway Traffic Safety Administration of the U.S. Department of Transportation. The standards, published in the Federal Register in May 2010, and effective in July 2010, apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016, and require automakers to improve fleet-wide fuel economy and reduce fleet-wide greenhouse gas emissions by approximately five percent each year. They require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide (CO₂) per mile in model year 2016, equivalent to 35.5 miles per gallon (mpg) if the automotive industry were to meet this CO₂ level entirely through fuel economy improvements.⁷

In May 2010, EPA issued a final rule that establishes thresholds for GHG emissions that define when permits are required for new and existing industrial facilities. Facilities responsible for nearly 70 percent of the national GHG emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation's largest GHG emitters—power plants, refineries, and cement production facilities. The rule took effect in 2011.

In September 2010, the two agencies published a Notice of Intent for the development of new GHG and fuel economy standards for model year 2017-2025 vehicles. The agencies published a Supplemental Notice of Intent in December 2010. Draft regulations are anticipated in 2011, with a final rule due to be adopted in 2012.⁸

In a related action, in June 2009, EPA granted California a waiver under the federal Clean Air Act, allowing the state to impose its own, stricter GHG regulations for vehicles beginning in 2009 (see below).

Statewide Actions

Greenhouse Gas Reduction Measures

As early as 2002, with the passage of Assembly Bill 1493, the California legislature directed ARB to adopt regulations to reduce GHG emissions from cars and light trucks beginning in 2009. Because the so-called Pavley standards (named for the bill's author, current state Senator Fran Pavley) would impose stricter standards than those under the federal Clean Air Act, California applied to the EPA for a waiver under the Clean Air Act; this waiver was denied by the Bush Administration in 2008. As noted above, in 2009, EPA granted the waiver. California has now agreed to cooperate with the federal GHG and Corporate Average Fuel Economy standards under development so that there will be a single national standard.

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows: by 2010, reduce GHG

⁷ National Highway Traffic Safety Administration, "NHTSA and EPA Establish New National Program to Improve Fuel Economy and Reduce Greenhouse Gas Emissions and for Passenger Cars and Light Trucks," fact sheet, May 2010. Available online at: http://www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/CAFE-GHG_Fact_Sheet.pdf, accessed on June 12, 2010.

⁸ 75 Federal Register 76337, December 8, 2010. Available online at: http://www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/Supplemental_Notice_FR_12082010.pdf; Fact Sheet, "NHTSA and EPA Issue a Supplemental Notice in the Process for Setting Future Greenhouse Gas and Fuel Economy Standards for Passenger Cars and Light Trucks, November 2010. Available on the internet at: http://www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/Supplemental_NOI_CAFE_2017_Fact_Sheet.pdf, accessed on January 2, 2011.

emissions to 2000 levels (approximately 458 MMTCO₂E); by 2020, reduce GHG emissions to 1990 levels (an estimated 427 MMTCO₂E); and by 2050, reduce GHG emissions to 80 percent below 1990 levels (approximately 85 MMTCO₂E).⁹

In 2006, California passed the California Global Warming Solutions Act of 2006 (Assembly Bill No. 32; California Health and Safety Code Division 25.5, Sections 38500, et seq., or AB 32), which requires ARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25-percent reduction in emissions).

Pursuant to AB 32, ARB adopted a Scoping Plan in December 2008, outlining measures to meet the 2020 GHG reduction limits. In order to meet these goals, California must reduce its GHG emissions by almost 30 percent below projected 2020 business as usual emissions levels, or about 11 percent from today's levels. The Scoping Plan estimates a reduction of 174 MMT (about 191 million U.S. tons) of CO₂E. Approximately one-third of the emissions reductions strategies fall within the transportation sector and include the following: California Light-Duty Vehicle GHG standards, the Low Carbon Fuel Standard, Heavy-Duty Vehicle GHG emission reductions and energy efficiency, and medium and heavy-duty vehicle hybridization, high speed rail, and efficiency improvements in goods movement. These measures are expected to reduce GHG emissions by 57.3 MMT (63 million U.S. tons) of CO₂E. Emissions from the electricity sector are expected to reduce another 49.7 MMT (55 million U.S. tons) of CO₂E. Reductions from the electricity sector include building and appliance energy efficiency and conservation, increased combined heat and power, solar water heating (AB 1470), the renewable energy portfolio standard (33 percent renewable energy by 2020), and the existing million solar roofs program. Other reductions are expected from industrial sources, agriculture, forestry, recycling and waste, water, and emissions reductions from cap-and-trade programs. Regional GHG targets are also expected to yield a reduction of 5 MMT (5.5 million U.S. tons) of CO₂E.¹⁰

Measures that could become effective during implementation of projects in the Project Area (including the Draft Plan, the Rezoning of Adjacent Parcels, and the 350 Eighth Street project) pertain to construction-related equipment and building and appliance energy efficiency. Some proposed measures will require new legislation to implement, some will require subsidies, some have already been developed, and some will require additional effort to evaluate and quantify. Additionally, some emissions reductions strategies may require their own environmental review under CEQA or the National Environmental Policy Act (NEPA). Some applicable measures that are ultimately adopted will become effective during construction and operation of the Proposed Project and the Proposed Project would be subject to these requirements.

Most of the Scoping Plan's GHG reduction measures (except for those pertaining to Agriculture, Forestry, and Industry, which would not be applicable to the Proposed Project) are set forth in **Table 4.H-1**, below. While ARB has identified a GHG reduction target of 15 percent from current levels for actions by local

⁹ California Air Resources Board, Climate Change Scoping Plan: A Framework for Change, December 2008. Available online at : <http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>, accessed on January 2, 2011.

¹⁰ *Ibid.*

TABLE 4.H-1
GREENHOUSE GAS REDUCTION MEASURES IN CALIFORNIA AIR RESOURCES BOARD SCOPING PLAN¹

Measure No.	Measure Description	GHG Reductions (Annual MMTCO ₂ e)
Transportation		
T-1	Pavley I and II – Light Duty Vehicle Greenhouse Gas Standards	31.7
T-2	Low Carbon Fuel Standard (Discrete Early Action)	15.0
T-3 ²	Regional Transportation-Related Greenhouse Gas Targets	5.0
T-4	Vehicle Efficiency Measures	4.5
T-5	Ship Electrification at Ports (Discrete Early Action)	0.2
T-6	Goods Movement Efficiency Measures. • Ship Electrification at Ports • System-Wide Efficiency Improvements	3.5
T-7, 8	Medium- and Heavy-Duty Vehicle Measures • Aerodynamic Efficiency (Discrete Early Action) • Hybridization	1.4
T-9	High Speed Rail	1.0
		62.3
Electricity and Natural Gas		
E-1	Energy Efficiency (32,000 GWh of Reduced Demand) • Increased Utility Energy Efficiency Programs • More Stringent Building & Appliance Standards Additional Efficiency and Conservation Programs	15.2
E-2	Increase Combined Heat and Power Use by 30,000 GWh (Net reductions include avoided transmission line loss)	6.7
E-3	Renewables Portfolio Standard (33% by 2020)	21.3
E-4	Million Solar Roofs (including California Solar Initiative, New Solar Homes Partnership and solar programs of publicly owned utilities) • Target of 3000 MW Total Installation by 2020	2.1
CR-1	Energy Efficiency (800 Million Therms Reduced Consumptions) • Utility Energy Efficiency Programs • Building and Appliance Standards • Additional Efficiency and Conservation Programs	4.3
CR-2	Solar Water Heating (AB 1470 goal)	0.1
		49.7
Green Buildings		
GB-1	Green Buildings	26
Recycling and Waste		
RW-1	Landfill Methane Control (Discrete Early Action)	1
RW-2	Additional Reductions in Landfill Methane	TBD†
RW-3	High Recycling/Zero Waste	9†
Water		
W-1	Water Use Efficiency	1.4†
W-2	Water Recycling	0.3†
W-3	Water System Energy Efficiency	2.0†

TABLE 4.H-1 (Continued)
GREENHOUSE GAS REDUCTION MEASURES IN CALIFORNIA AIR RESOURCES BOARD SCOPING PLAN¹

Measure No.	Measure Description	GHG Reductions (Annual MMTCO ₂ e)
Water (cont.)		
W-4	Reuse Urban Runoff	0.2†
W-5	Increase Renewable Energy Production	0.9†
W-6	Public Goods Charge (Water)	TBD†

¹ Table excludes GHG reduction measures for Agriculture, Forestry, and Industry (including high-global warming potential gases).

² This is not the SB 375 regional target. ARB will establish regional targets for each Metropolitan Planning Organization (MPO) region following the input of the regional targets advisory committee and a consultation process with MPOs and other stakeholders per SB 375.

† GHG emission reduction estimates are not included in calculating the total reductions needed to meet the 2020 target.

SOURCE: ARB, 2008

governments themselves, it has not yet determined what amount of GHG emissions reductions it recommends from local government land use decisions. However, the Scoping Plan does state that successful implementation of the plan relies on local governments' land use planning and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. ARB further acknowledges that decisions on how land is used will have large effects on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. As can be seen in Table 4.H-1, many of the measures in the Scoping Plan—such as implementation of increased fuel efficiency for vehicles (the “Pavley” standards), increased efficiency in utility operations, and development of more renewable energy sources—require statewide action by government, industry, or both. Some of the measures are at least partially applicable to development projects, such as increasing energy efficiency in new construction, installation of solar panels on individual building roofs, and a “green building” strategy. The City has already implemented several of these measures that require local government action, such as implementing a Green Building Ordinance, a Zero Waste strategy, a Construction and Demolition Debris Recovery Ordinance, and a solar energy generation subsidy program, to realize meaningful reductions in GHG emissions. (See discussion under “Local Actions,” below.)

In addition to policy directly guided by AB 32, the legislature in 2008 passed Senate Bill (SB) 375, which provides for regional coordination in land use and transportation planning and funding to help meet the AB 32 GHG reduction goals. SB 375 requires regional transportation plans (RTPs) developed by the state's 18 Metropolitan Planning Organizations (in the Bay Area, the Metropolitan Transportation Commission [MTC]), to incorporate a “sustainable communities strategy” in their regional transportation plans that will achieve GHG emission reduction targets set by ARB. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development. MTC's 2013 RTP will be its first plan subject to SB 375.

SB 375 requires ARB to establish regional GHG reduction targets. ARB appointed a 21-member Regional Targets Advisory Committee to recommend factors to be considered and methodologies used in setting the regional goals; this committee provided its recommendations to ARB in September 2009.

In addition, the state establishes energy standards for new construction as part of the California Building Standards Code (Title 24 of the California Code of Regulations). In general, Title 24 standards require the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The state Building Code and other standards for appliances and other consumer products apply throughout California, and they limit GHG emissions in California by reducing energy demand.

CEQA Guidelines Provisions Regarding Greenhouse Gases

Senate Bill 97 (SB 97) required the Office of Planning and Research (OPR) to amend the state CEQA *Guidelines* to address the feasible mitigation of GHG emissions or the effects of GHGs. In response, OPR amended the CEQA *Guidelines* to provide guidance for analyzing GHG emissions. Among other changes to the CEQA *Guidelines*, the amendments add a new section to the CEQA checklist (CEQA *Guidelines* Appendix G) to address questions regarding the project's potential to emit GHGs.

These revisions include a new section (Section 15064.4) specifically addressing the significance of GHG emissions. Section 15064.4 calls for a "good-faith effort" to "describe, calculate or estimate" GHG emissions; Section 15064.4 further states that the significance of GHG impacts should include consideration of the extent to which the project would increase or reduce GHG emissions; exceed a locally applicable threshold of significance; and comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions." The revisions also state that a project may be found to have a less-than-significant impact if it complies with an adopted plan that includes specific measures to sufficiently reduce GHG emissions (Section 15064(h)(3)).

Regional Actions

The BAAQMD is the regional agency with jurisdiction over the nine-county region located in the Bay Area Air Basin. The BAAQMD is responsible for attaining and/or maintaining air quality in the Air Basin within federal and state air quality standards. The BAAQMD has established a Climate Protection Program with the goal of integrating climate protection activities into the district's existing programs. The BAAQMD provides recommendations for lead agencies to follow in protecting air quality, including reducing GHG emissions, through implementation of CEQA review. Notably, in June 2010, the BAAQMD adopted revised *CEQA Air Quality Guidelines* that include quantitative thresholds for determining significance of GHG emissions and provides an extensive list of mitigation measures that can be applied to reduce operational emissions, including of GHGs. The BAAQMD recommends that local agencies adopt a Greenhouse Gas Reduction Strategy consistent with AB 32 goals.

In March 2012, the Alameda County Superior Court ordered the BAAQMD to set aside its approval of its *CEQA Air Quality Guidelines* and thresholds of significance on the grounds that the District had not undertaken environmental review under CEQA prior to adoption of the *Guidelines* and thresholds. As of

May 2012, the BAAQMD was “no longer recommending that the Thresholds be used as a generally applicable measure of a project’s significant air quality impacts.”¹¹ In May 2012, the BAAQMD appealed the Superior Court ruling to the California Court of Appeal. Although the thresholds of significance indentified in the CEQA Air Quality Guidelines (2011) are the subject of judicial actions, the Planning Department has determined that Appendix D of these Guidelines in addition to the Revised Draft Options and Justification Report (2009) provide substantial evidence to support the conclusions reached in this EIR.

Specifically, the BAAQMD 2010 *CEQA Air Quality Guidelines* set forth the requirements for a GHG Reduction Strategy to be considered consistent with the state’s GHG reduction goals as codified through AB 32. Projects that are consistent with such qualified GHG Reduction Strategies can be found to have a less-than-significant impact in terms of GHG emissions and climate change. BAAQMD standards for a qualified GHG Reduction Strategy include:

- a) quantification of GHGs for existing (baseline) and future years (2020 or other forecast year) that includes future emissions under a “business-as-usual” scenario;
- b) an adopted GHG reduction goal of (i) 1990 GHG emission levels, (ii) 15 percent below baseline (2008 or earlier) emission levels, or (iii) a per-service-population emissions rate of 6.6 MMTCO₂E, the specified general plan significance criterion in the BAAQMD *CEQA Air Quality Guidelines*;
- c) analysis of anticipated GHG emissions resulting from local and state policies and regulations that may be planned or adopted but not implemented;
- d) identification of specific feasible reduction measures to meet the identified target on a project-by-project basis, including quantification of each measure’s effectiveness in GHG reduction;
- e) establishment of a monitoring program, including identification of which measures apply to different types of new development projects, a mechanism for reviewing and determining if all applicable mandatory measures are being applied, implementation steps and parties responsible for ensuring implementation of each action and a schedule for implementation, procedures for monitoring and updating the GHG inventory and reduction measures at three- to five-year intervals, and annual review and reporting on the progress of implementation; and
- f) adoption through a public process following environmental review.

Because few local agencies have completed all of these steps, the BAAQMD recognizes that a local agency can demonstrate equivalency with a qualified GHG Reduction Strategy if its climate change ordinances, policies, and programs are consistent with AB 32 and include requirements or feasible measures to reduce GHG emissions to 1990 levels, 15 percent below 2008 levels, or 6.6 MMTCO₂E. San Francisco has developed a GHG Reduction Strategy, which is discussed in the next portion of this section.

¹¹ BAAQMD “CEQA Guidelines” webpage, reviewed May 24, 2012, at: <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES.aspx>.

Local Actions

The City and County of San Francisco (City) has a history of environmental protection policies and programs aimed at improving the quality of life for residents and reducing impacts on the environment. A comprehensive assessment of these policies, programs and ordinances as they relate to reducing GHG emissions has been compiled into the City's *Strategies to Address Greenhouse Gas Emissions in San Francisco*,¹² collectively referred to as San Francisco's GHG Reduction Strategy. The GHG Reduction Strategy includes measures applicable to this project that would decrease the amount of GHGs emitted into the atmosphere and thus decrease San Francisco's overall contribution to climate change.

The City's GHG Reduction Strategy includes, following an introduction, chapters that address each of the requirements, a through f, noted above. Chapter II of the GHG Reduction Strategy sets forth the City's GHG inventory as contained in the City's *Climate Action Plan: Local Strategies to Reduce Greenhouse Gas Emissions* (Climate Action Plan), published in 2004 by the City's Department of the Environment and Public Utilities Commission.¹³ The Climate Action Plan was called for in the City's 2002 Greenhouse Gas Emissions Reduction Resolution. The Plan provides the context of climate change in San Francisco and examines strategies to meet the 20 percent GHG reduction target.

The Climate Action Plan estimated that in 1990 San Francisco's GHG emissions were approximately 8.26 MMT of CO₂ equivalent (about 9.1 million U.S. tons). Just over half of these emissions in 1990 were from motor vehicles, with the remainder generated by building energy use. The Climate Action Plan estimated year 2000 GHG emissions at 8.8 MMT of CO₂E (about 9.7 million U.S. tons) and projected 2012 GHG emissions at 9.8 MMT of CO₂E (about 10.8 million U.S. tons) based on a business-as-usual scenario (without citywide actions to reduce GHG emissions). The Climate Action Plan estimated that GHG emissions are projected to rise approximately 9 percent from 2000 levels in the transportation sector, and 14 percent from 2000 levels in the building energy sector. In 2008, San Francisco commissioned an independent third party to conduct a review the City's baseline communitywide GHG emissions for years 1990, 2000 and 2005. The independent report generally confirmed the Plan's 1990 and 2000 emissions estimates and found that 2005 GHG emissions were approximately 7.78 MMT of CO₂e (about 8.56 million U.S. tons), a decrease of about 5 percent from 1990.¹⁴

Chapter II of the GHG Reduction Strategy also sets forth the City's GHG reduction targets, established by the 2008 Greenhouse Gas Reduction Ordinance:

- Reduce greenhouse gas emissions by 25 percent below 1990 levels by 2017;
- Reduce greenhouse gas emissions by 40 percent below 1990 levels by 2025; and
- Reduce greenhouse gas emissions by 80 percent below 1990 levels by 2050.

Chapter III of the GHG Reduction Strategy lists objectives and policies within the *San Francisco General Plan* that address climate change, categorizing the policy language into one or more of five GHG emission

¹² San Francisco Planning Department, *Strategies to Address Greenhouse Gas Emissions in San Francisco*, November 2010. Available online at: http://sfmea.sfplanning.org/GHG_Reduction_Strategy.pdf. Accessed June 1, 2012.

¹³ San Francisco Department of the Environment and San Francisco Public Utilities Commission, *Climate Action Plan for San Francisco, Local Actions to Reduce Greenhouse Emissions*, September 2004.

¹⁴ Contained in Appendix C to the GHG Reduction Strategy. Available online at: <http://www.sfplanning.org/index.aspx?p=1570>, accessed on April 19, 2012.

sectors: Transportation, Energy Efficiency, Renewable Energy, Waste, and Environment/Conservation. Policies from both plan elements and area plans are included.

Chapter IV of the GHG Reduction Strategy describes “actions or categories of actions that, when implemented, will achieve a specified GHG emissions level.” This includes the four categories of actions set forth in the *Climate Action Plan*, which are the same as the first four sectors identified in the preceding paragraph, and the added category of Environment/Conservation, which includes “other climate change-related policies, such as street planting and landscaping, policies that increase carbon sequestration, and those that encourage conservation of the natural environment.”

Chapter IV of the GHG Reduction Strategy identifies six main Transportation-related actions to reduce GHG emissions by more than 874,000 metric tons of CO₂e (963,000 U.S. tons) per year, including increasing the use of public transit; increasing ridesharing; increasing bicycling and walking; support of employer-based trip-reductions programs; “discourage driving”; and increasing the use of clean air vehicles and improving fleet efficiency. In Chapter VI, Progress Towards Emissions Reductions, the Strategy recognizes declines in per-capita vehicle ownership and vehicles per household, as well as decreases in driving and small increases in transit use and bicycling and a greater increase in persons working at home.

Energy Efficiency Actions include increasing incentives, direct installation, and technical assistance for improvements to residential, commercial, and municipal buildings; expanding education and outreach; and strengthening legislation, codes, and standards (estimated reduction of 727,000 metric tons (800,000 U.S. tons) CO₂e per year). In Chapter VI, the GHG Reduction Strategy notes that the Department of the Environment’s Energy Watch Program, in 2009, saved 27,000,000 gross kWh and 53,000 therms of gas.

Renewable Energy Actions include development of renewable solar, wind, and biomass projects; conducting pilot projects for emerging technologies; and supporting and developing green power projects (estimated reduction of 500,000 metric tons (550,000 U.S. tons) of CO₂e per year). Accomplishments noted in Chapter VI include progress in the development of solar power and biodiesel; closure of the Hunters Point Power Plant in 2006 (the Potrero Power Plan closed in 2011); installation of more than 1,600 photovoltaic systems (capacity of 8.5 megawatts); installation of solar panels at the Sunset Reservoir to generate 5 megawatts of electricity; the use and development of biofuels, including the SFGreasecycle program in which the City picks up used cooking oil and grease from local establishments and converts the oil into biodiesel; and biodiesel use by City fleets.

Solid Waste Actions include increasing residential recycling and composting; increasing commercial recycling and composting; and expansion of construction and demolition debris recycling (estimated reduction of 270,000 metric tons (300,000 U.S. tons) of CO₂e per year). Chapter VI notes that the City has recently mandated recycling and composting program for all residents and businesses.

In the area of Environment/Conservation, Chapter VI states, “The City’s efforts to design a more sustainable streetscape have culminated in the Better Streets Plan [that] provides design guidelines for streetscape improvement projects, including guidelines for the number and placement of street trees and guidelines for increasing the City’s permeable surfaces.”

Additional GHG reduction strategies are set forth in Chapter V. These include the 2008 GHG ordinance noted above, which calls upon the San Francisco Department of the Environment to coordinate GHG reduction efforts; implementation of various City departments' climate action plans; specific actions by the San Francisco Planning Department, Department of Building Inspection, and Department of Public Works with respect to project review; City Administrator and San Francisco Public Utilities Commission efforts to reduce municipal GHG emissions; and consideration of future legislation to develop or utilize available market-based compliance mechanism. In 2008, the Department of the Environment released *SForward*, an environmental plan for the city that identifies eight policy areas to be developed: climate action, renewable and efficient energy, clean transportation, green buildings, urban forest, zero waste, environmental justice, and toxics reduction. The San Francisco Carbon Fund, created in response to Executive Directive 07-13 and codified in Chapter 52 of the City Administrative Code, will fund carbon-offset activities exclusively within San Francisco. Programs funded have included a waste grease biodiesel facility in the Dogpatch neighborhood, the planting of fruit trees in, among other places, one of San Francisco's larger public housing developments, and kiosks at San Francisco International Airport that the calculation of a flight's carbon footprint and the purchase carbon offsets to support local projects.

Other key GHG reduction strategies described in Chapter V include San Francisco's Transit First Policy (Section 16.102 of the City Charter), instituted in 1973 with the goal of reducing the City's reliance on freeways and meeting transportation needs by emphasizing mass transportation (the Transit First Policy gives priority to public transit investments; adopts street capacity and parking policies to discourage increased automobile traffic; and encourages the use of transit, bicycling and walking rather than use of single-occupant vehicles); the Green Taxi Fleet (the Taxi Commission passed a resolution in 2007 calling for the San Francisco taxi industry to reduce GHG emissions by 20 percent from 1990 levels and 50 percent from current levels by 2012, as well as to work to offset remaining emissions with investments in renewable energy or energy efficiency by 2015, and to move to a Zero Emissions taxi fleet by 2020); the Municipal Transportation Agency (MTA) Zero Emissions 2020 Plan (hybrid diesel-electric buses have replaced older diesel buses, newer diesel vehicles have been retrofitted, and certain vehicles are using a blend of 20 percent biodiesel with regular diesel) and draft MTA Climate Action Plan.

Chapter V of the GHG Reduction Strategy also discusses the contribution of the City's denser-than-typical land use pattern to reducing vehicle travel and vehicular GHG emissions; other environmental policies and programs such as tree planting and protection, and business programs such as the City's Green Business Program that helps San Francisco businesses adopt environmental practices that are sustainable and profitable.

Chapter VI of the GHG Reduction Strategy discusses progress made to date, including the 5-percent reduction in communitywide GHG emissions from 1990 to 2005 discussed above. Also discussed are increases in bicycling, walking, and transit ridership, energy savings, and reductions in waste disposed of at landfills.

Chapter VII sets forth a future GHG emissions monitoring strategy.

Chapter VIII of the Strategy identifies other ongoing GHG reduction efforts, including the Department of the Environment 2010-2012 Strategic Plan and the Climate Action Plans of San Francisco International

Airport and the Public Utilities Commission, while Chapter IX describes a large number of regulations that are applicable to new development and renovations that are expected to yield greenhouse gas (GHG) reductions. These include, among others, the Transit Impact Development Fee, Commuter Benefits Ordinance, Transportation Management Program requirement for larger projects, bicycle parking and car-sharing requirements, limitations on vehicle parking, the City's Green Building Ordinance, newly enacted stormwater controls, and mandatory recycling and composting.

The following plans, policies, and legislation, most referenced in the GHG Reduction Strategy, demonstrate San Francisco's continued commitment to environmental protection.

Transit First Policy. In 1973, the City instituted the Transit First Policy, which added Article 8A, Section 8A.115 to the City Charter with the goal of reducing San Francisco's reliance on freeways and meeting transportation needs by emphasizing mass transportation. The Transit First Policy gives priority to public transit investments; adopts street capacity and parking policies to discourage increased automobile traffic; and encourages the use of transit, bicycling, and walking instead of single-occupant vehicles.

San Francisco Sustainability Plan. In July 1997, the Board of Supervisors endorsed the Sustainability Plan for the City and County of San Francisco, which establishes sustainable development as a fundamental goal of municipal public policy.

The Electricity Resource Plan (Revised December 2002). The City adopted the Electricity Resource Plan to help address growing environmental health concerns in San Francisco's southeast community, the site of two power plants. The plan presents a framework for assuring a reliable, affordable, and renewable source of energy for the future of San Francisco.

The Climate Action Plan for San Francisco. In February 2002, the San Francisco Board of Supervisors passed the Greenhouse Gas Emissions Reduction Resolution (Number 158-02) that set a goal for the City to reduce GHG emissions to 20 percent below 1990 levels by the year 2012. In September 2004, the San Francisco Department of the Environment and San Francisco Public Utilities Commission published the Climate Action Plan for San Francisco: Local Actions to Reduce Greenhouse Gas Emissions.¹⁴⁰ This climate action plan provides the context of climate change in San Francisco and examines strategies to meet the 20 percent GHG emissions reduction target. Although the Board of Supervisors has not formally committed the City to perform the actions addressed in the plan, and many of the actions require further development and commitment of resources, the plan serves as a blueprint for GHG emissions reductions, and several actions have been implemented or are now in progress.

San Francisco Municipal Transportation Agency's Zero Emissions 2020 Plan. The Zero Emissions 2020 Plan focuses on the purchase of cleaner emission transit buses, including hybrid diesel-electric buses. Under this plan, hybrid buses will replace the oldest diesel buses, some dating back to 1988. The hybrid buses emit 95 percent less particulate matter (soot) than the buses they replace; they produce 40 percent less nitrogen oxides and reduce GHGs by 30 percent.

Zero Waste. In 2004, the City committed to a goal of diverting 75 percent of its waste from landfills by 2010, with the ultimate goal of zero waste by 2020. In 2010, San Francisco exceeded this goal.¹⁵

GoSolarSF. On July 1, 2008, the San Francisco Public Utilities Commission launched its “GoSolarSF” program to San Francisco’s businesses and residents, offering incentives in the form of a rebate program that could pay for approximately half the cost of installation of a solar power system and more to those qualifying as low-income residents.

The San Francisco Planning Department and the San Francisco Department of Building Inspection have also developed a streamlining process for solar photovoltaic permits and priority permitting mechanisms for projects pursuing Leadership in Energy and Environmental Design (LEED®) Gold certification.

San Francisco Planning Code. The *San Francisco Planning Code* reflects the latest smart growth policies and includes electric vehicle refueling stations in city parking garages, bicycle storage facilities for commercial and office buildings, and zoning that is supportive of high-density mixed-use infill development. The City’s more recent area plans, such as the Rincon Hill Area Plan and the Market and Octavia Area Plan, provide transit-oriented development policies that allow for neighborhood-oriented retail services and limit off-street parking to accessory parking spaces. At the same time, there is a communitywide focus on ensuring that San Francisco’s neighborhoods are “livable,” reflected in the San Francisco Better Streets Plan, which provide streetscape policies throughout the city; the Transit Effectiveness Project, which aims to improve transit service; and the San Francisco Bicycle Plan. All of these plans and projects are intended to promote alternative transportation options for residents and visitors.

Construction and Demolition Debris Recovery Ordinance. In 2006, the City adopted Ordinance No. 27-06, requiring all construction and demolition debris to be transported to a registered facility that can divert a minimum of 65 percent of the material from landfills. This ordinance applies to all construction, demolition, and remodeling projects within the city.

Greenhouse Gas Reduction Ordinance. In May 2008, the City adopted an ordinance amending the San Francisco Environment Code to establish GHG emissions targets and departmental action plans, to authorize the San Francisco Department of the Environment to coordinate efforts to meet these targets, and to make environmental findings. (These targets are discussed above, on p. 4.H-9.) The ordinance also specifies requirements for City departments to prepare climate action plans that assess GHG emissions associated with their activities and activities regulated by them, report the results of those assessments to the San Francisco Department of the Environment, and prepare recommendations to reduce emissions. In particular, the San Francisco Planning Department is required to (1) update and amend the City’s applicable General Plan elements to include the emissions reduction limits set forth in this ordinance and policies to achieve those targets; (2) consider a project’s impact on the City’s GHG emissions reduction limits specified in this ordinance as part of its review under CEQA; and (3) work with other City departments to enhance the Transit First Policy to encourage a shift to sustainable modes of transportation, thereby reducing emissions and helping to achieve the targets set forth by the ordinance.

¹⁵ San Francisco Department of the Environment, Zero Waste webpage: <http://sfenvironment.org/zero-waste>. Accessed June 1, 2012.

City and County of San Francisco's Green Building Ordinance. On August 4, 2008, then-Mayor Gavin Newsom signed into law San Francisco's Green Building Ordinance for newly constructed residential and commercial buildings and renovations to existing buildings. The ordinance specifically requires newly constructed commercial buildings over 5,000 square feet, residential buildings over 75 feet in height, and renovations on buildings over 25,000 square feet to be subject to an unprecedented level of required Leadership in Energy and Environmental Design (LEED®) Green Building Rating System™ certifications, which makes San Francisco the city with the most stringent green building requirements in the nation. In addition, green building standards are required for all newly constructed buildings, regardless of size or occupancy, as well as renovations to areas greater than 25,000 square feet undergoing major structural, mechanical or electrical upgrades. According to the ordinance, the cumulative benefits of this ordinance include reducing CO₂ emissions by 60,000 tons, saving 220,000 megawatt-hours of power, saving 100 million gallons of drinking water, reducing waste and stormwater by 90 million gallons, reducing construction and demolition waste by 700 million pounds, increasing the valuations of recycled materials by \$200 million, reducing 540,000 automobile trips, and increasing generation of green power by 37,000 megawatt-hours. The Green Building Ordinance also continues San Francisco's efforts to reduce local GHG emissions to 20 percent below 1990 levels by the year 2012, a goal outlined in the City's 2004 climate action plan. In addition, by reducing San Francisco's emissions, this ordinance furthers efforts to reduce GHG emissions statewide, as mandated by the California Global Warming Solutions Act of 2006.

City and County of San Francisco Commuter Benefits Ordinance. The City adopted an ordinance, effective January 19, 2009, that allows commuters to deduct a specified amount per month, pretax, for transit and vanpool expenses. These commuter benefits must be offered by any employer with 20 employees or more that operates within the city. To qualify for these benefits, employees must work at least 10 hours per week averaged over a calendar month. Although not required by the ordinance, employers can offer the commuter benefits to employees who work fewer than 10 hours per week averaged over a month.

City and County of San Francisco Mandatory Recycling and Composting Ordinance. The City adopted an ordinance, effective October 21, 2009, that requires all businesses and residences to compost food scraps and biodegradable products. Green, blue, and black bins have been distributed to businesses and residents to sort their food and other biodegradable waste, recycling, and trash into their designated color bins. Businesses and residences that do not comply with the ordinance are subject to fines, depending on the level and duration of non-compliance.

San Francisco has been actively pursuing cleaner energy, alternative transportation, and solid waste policies, many of which have been codified into regulations as discussed above. In an independent review of San Francisco's communitywide emissions, it was reported that San Francisco has achieved a 5 percent reduction in communitywide GHG emissions below the Kyoto Protocol 1990 baseline levels. The 1997 Kyoto Protocol sets a GHG reduction target of 7 percent below 1990 levels by 2012. The "community-wide inventory" includes GHG emissions generated by San Francisco—from residents, businesses, and commuters as well as from municipal operations. The inventory also includes emissions from both transportation and building energy sources.¹⁶

¹⁶ IFC International, "City and County of San Francisco: Community GHG Inventory Review," San Francisco, CA, August 1, 2008. Prepared for the San Francisco Department of the Environment. Contained as Appendix C of the GHG Reduction Strategy and available online at: http://www.sf-planning.org/ftp/files/MEA/GHG-Reduction_ApxC.pdf.

The City's 2017 and 2025 GHG reduction goals are more aggressive than the State's GHG reduction goals as outlined in AB 32, and consistent with the State's long-term (2050) GHG reduction goals. San Francisco's GHG Reduction Strategy identifies the City's actions to pursue cleaner energy, energy conservation, alternative transportation and solid waste policies, and concludes that San Francisco's policies have resulted in a reduction in GHG emissions below 1990 levels, meeting statewide AB 32 GHG reduction goals. As reported, San Francisco's 1990 GHG emissions were approximately 8.26 million metric tons (MMT) CO₂E and 2005 GHG emissions are estimated at 7.78 MMTCO₂E, representing an approximately 5 percent reduction in GHG emissions below 1990 levels.

The BAAQMD has reviewed the City's GHG Reduction Strategy and concluded that "Aggressive GHG reduction targets and comprehensive strategies like San Francisco's help the Bay Area move toward reaching the State's AB 32 goals, and also serve as a model from which other communities can learn."

To evaluate whether a project is consistent with the City's GHG Reduction Strategy, the San Francisco Planning Department has prepared a Greenhouse Gas Analysis Compliance Checklist that is used to compare a project's attributes with various components of the Strategy. This compliance checklist is discussed further under "Impacts and Mitigation Measures," below.

Impacts and Mitigation Measures

Significance Criteria

For purposes of this EIR, the Proposed Project would result in a significant impact with respect to greenhouse gas emissions if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

Approach to Analysis

As discussed above, SB 97 required OPR to amend the state CEQA *Guidelines* to address the feasible mitigation of GHG emissions or the effects of GHGs. In response, OPR amended the CEQA *Guidelines* to provide guidance for analyzing GHG emissions. Among other changes to the CEQA *Guidelines*, the amendments add a new section to the CEQA Checklist (CEQA *Guidelines* Appendix G) to address questions regarding the project's potential to emit GHGs. The significance thresholds identified above are based on the CEQA *Guidelines* and CEQA checklist, as amended by SB 97. Moreover, Section 15064.4 of CEQA *Guidelines* calls for a "good-faith effort" to "describe, calculate or estimate" GHG emissions; Section 15064.4 further states that the significance of GHG impacts should include consideration of the extent to which the project would increase or reduce greenhouse gas emissions; exceed a locally applicable threshold of significance; and comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions." The revisions also state that a project may be found to have a less-than-significant impact if it

complies with an adopted plan that includes specific measures to sufficiently reduce GHG emissions (Section 15064(h)(3)).

The Proposed Project's impacts with respect to GHG emissions are based on compliance with local and state plans, policies and regulations adopted for the purpose of reducing the cumulative impacts of climate change. GHG emissions are analyzed in the context of their contribution to the cumulative effects of climate change because a single land use project could never generate enough GHG emissions to noticeably change the global average temperature. As discussed above, the AB 32 Scoping Plan is the State's overarching plan for addressing climate change. The AB 32 Scoping Plan recommendations are intended to curb projected business-as-usual growth in GHG emissions and reduce those emissions to 1990 levels. Therefore, meeting AB 32 GHG reduction goals would result in an overall annual net decrease in GHGs as compared to current levels and accounts for projected increases in emissions resulting from anticipated growth. The BAAQMD has conducted an analysis of the effectiveness of meeting AB 32 goals from the actions outlined in the scoping plan and determined that in order for the Bay Area to meet AB 32 GHG reduction goals, the Bay Area would need to achieve an additional 2.3 percent reduction in GHG emissions from the land use-driven sector.¹⁷

At a local level, the City has developed a number of plans and programs to reduce the City's contribution to global climate change. As identified in San Francisco's GHG Reduction Strategy, the City has implemented a number of mandatory requirements and incentives that have measurably reduced GHG emissions including, but not limited to, increasing the energy efficiency of new and existing buildings, installation of solar panels on building roofs, implementation of a green building strategy, adoption of a zero waste strategy, a construction and demolition debris recovery ordinance, a solar energy generation subsidy, incorporation of alternative fuel vehicles in the City's transportation fleet (including buses), and a mandatory recycling and composting ordinance. The strategy also identifies 42 specific regulations for new development that would reduce a project's GHG emissions.

San Francisco's GHG Reduction Strategy identifies the City's actions to pursue cleaner energy, energy conservation, alternative transportation and solid waste policies, and concludes that San Francisco's policies have resulted in a reduction in GHG emissions below 1990 levels, exceeding statewide AB 32 GHG reduction goals. As reported, San Francisco's 1990 GHG emissions were approximately 8.26 MMTCO₂E and 2005 GHG emissions are estimated at 7.82 MMTCO₂E, representing an approximately 5 percent reduction in GHG emissions below 1990 levels.

In summary, the two applicable GHG reduction plans, the AB 32 Scoping Plan and the City's GHG Reduction Strategy, are intended to reduce GHG emissions below current levels. Given that the City's local greenhouse gas reduction targets are more aggressive than the State's 2020 GHG reduction targets, and consistent with the long-term 2050 reduction targets, the City's GHG Reduction Strategy is consistent with the goals of AB 32. Therefore, projects that are consistent with the City's GHG Reduction Strategy would be consistent with the goals of AB 32 and would not conflict with either plan or generate GHG emissions that

¹⁷ Bay Area Air Quality Management District (BAAQMD). *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*. October 2009, p. 42. Available online at: <http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/Revised%20Draft%20CEQA%20Thresholds%20%20Justification%20Report%20Oct%202009.ashx?la=en>. Reviewed June 1, 2012.

would make a considerable contribution to global climate change. As such, a project's impact with respect to GHG emissions is analyzed based on compliance with the City's GHG Reduction Strategy.

It is noted that transportation and street network improvements that would be implemented as part of the Draft Plan would not have any impacts on greenhouse gases, other than as related to increases of traffic on certain streets that would, in turn, increase greenhouse gas emissions. Such GHG increases are assumed under the discussion of the Proposed Project in this section. The transportation and street network improvements would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. For this reason, these impacts are not discussed any further in this section.

Impacts of the Western SoMa Community Plan and Rezoning of Adjacent Parcels (Program-Level Analysis)

Impact C-GG-1: The Draft Plan and the Rezoning of Adjacent Parcels would be consistent with the City's GHG Reduction Strategy and the AB 32 Scoping Plan, and therefore would not result in cumulatively considerable GHG emissions. (Less than Significant)

Adoption and implementation of the *Western SoMa Community Plan* and the Rezoning of Adjacent Parcels would not directly result in GHG emissions. However, implementation of subsequent development projects in the Draft Plan Area and on the Adjacent Parcels would result in GHG emissions.

The *Western SoMa Community Plan* includes goals and policies that would apply to development within the Draft Plan Area. These policies are generally consistent with the City's *Strategies to Address Greenhouse Gas Emissions*. The Draft Plan would support reductions in GHG emissions by generally providing for additional high-density mixed-use development in an area with an extensive array of transit service. Of the GHG reduction sectors listed in the City's *Strategies to Address Greenhouse Gas Emissions* (i.e., Transportation, Energy Efficiency, Renewable Energy, Waste, and Environment/Conservation), many of the Draft Plan policies would reduce transportation impacts, by increasing the mix of residential zoning and designated mixed-use locations, to allow for the creation of more "neighborhood completeness," and by increasing density. Other policies encourage adaptive building reuse and infill development. Additionally, a series of transportation improvements are also planned that would directly discourage auto-oriented uses of the Draft Plan Area. In particular, the following policies from the Draft Plan are among those that would serve to reduce potential GHG emissions by concentrating growth near transit, discouraging use of single-occupancy vehicles for commuter travel, encouraging alternative forms of travel, and minimizing building construction activities:

- *Policy 1.1.4:* Encourage increased height and density in the "Downtown Folsom" neighborhood serving commercial corridor between 7th and 10th Streets.
- *Policy 1.1.7:* Establish vertical zoning standards in locations encouraging new mixed-use development and preserving a mix of uses.
- *Policy 1.2.3:* Establish a mid-rise business corridor on Townsend Street designated for office uses and an explicit preference for 21st Century high tech and digital-media uses.

- *Policy 2.1.2:* Promote a wide range of neighborhood-serving commercial uses north of Harrison Street.
- *Policy 2.1.4:* Create incentives for adaptive re-use of existing commercial buildings throughout the Western SoMa SUD.
- *Policy 2.1.7:* Encourage innovation, creativity and start-up business opportunities through adaptive re-use programs that encourage building rehabilitation over demolition and new construction proposals.
- *Policy 2.2.4:* Encourage mixed-use development of new use large retail sites throughout the Western SoMa SUD.
- *Policy 2.2.12:* Develop land use controls that promote Folsom Street and the main neighborhood shopping and ceremonial street in the Western SoMa SUD.
- *Policy 2.2.13:* Clearly designate and differentiate streets and their associated zoning for functional goods and services movement from streets with pedestrian and bicycle orientations.
- *Policy 2.2.14:* Provide adequate customer parking and goods loading areas in a manner that minimizes negative impacts on transit, bike and pedestrian movements on neighborhood commercial streets.
- *Policy 3.1.3:* Expand the identification of the diverse character and formal recognition of existing residential enclaves.
- *Policy 3.2.2:* Encourage in-fill housing production that continues the existing built housing qualities in terms of heights, prevailing density, yards and unit sizes.
- *Policy 3.2.3:* Provide additional housing production incentives for areas identified as most appropriate for housing production.
- *Policy 4.1.1:* Introduce treatments that effectively improve the pedestrian experience in alleys.
- *Policy 4.1.4:* Provide pedestrian crossings that unite alleys on both sides of a neighborhood-serving street.
- *Policy 4.2.1:* Restrict the entry of motor vehicles in alleys.
- *Policy 4.3.1:* Develop commercial uses on specific streets, making them easily accessible by transit and non-motorized transportation.
- *Policy 4.3.2:* Reduce the supply of on-street parking on some neighborhood-serving streets, in order to accommodate transit and bicycle lanes.
- *Policy 4.3.3:* Promote walking and bicycling to/from the designated Neighborhood Commercial (NC) Districts by introducing pedestrian and environmental improvements.
- *Policy 4.3.4:* Reduce auto-oriented facilities on neighborhood-serving streets.
- *Policy 4.4.2:* Introduce traffic calming measures that promote pedestrian and bicycle transportation and safety.
- *Policy 4.4.4:* Improve transit facilities and services on streets with existing transit service, providing passengers with better access to nearby destinations.

- *Policy 4.4.6:* Coordinate with MTA to develop an ongoing set of pedestrian and bicycle safety improvements for neighborhood-serving streets.
- *Policy 4.5.1:* Improve connections to regional transit services.
- *Policy 4.6.2:* Work with the MTA to identify new transit needs on neighborhood-serving streets.
- *Policy 4.7.1:* Develop commercial uses on Folsom Street that are easily accessed by transit and non-motorized transportation.
- *Policy 4.7.3:* Promote walking and other non-motorized travel modes to/from neighborhood commercial segments of Folsom Street by introducing pedestrian and environmental improvements.
- *Policy 4.7.4:* Reduce or prohibit auto-oriented facilities on Folsom Street.
- *Policy 4.7.7:* Require that commercial development provide on-site Travel Demand Management (TDM) programs incorporating a variety of measures, to ensure vehicle trip reduction.
- *Policy 4.10.2:* Work with the MTA to identify new transit needs on Folsom Street, including routes, frequencies, and amenities.
- *Policy 4.12.1:* Enhance the walking experience by introducing pedestrian and environmental improvements.
- *Policy 4.12.3:* Work with MTA to develop a minimum set of required pedestrian and bicycle safety improvements.
- *Policy 4.18.1:* Develop Folsom Street as a priority public transit corridor.
- *Policy 4.18.5:* Implement public transit improvements that reduce conflicts between transit vehicles, bicyclists and pedestrians on “Transit Preferential Streets.”
- *Policy 4.19.1:* Provide links to local and regional transit services.
- *Policy 4.20.1:* Coordinate transit improvements in the Western SoMa SUD so that they are consistent with larger transit efforts.
- *Policy 4.21.3:* Create safe pedestrian and bicycle routes to community facilities.
- *Policy 4.22.1:* Coordinate pedestrian improvements so that they are carefully integrated with other transportation projects in the area.
- *Policy 4.23.3:* Develop Folsom Street as a pedestrian-oriented transit corridor.
- *Policy 4.24.1:* Improve bicycle access in the Western SoMa.
- *Policy 4.26.1:* Coordinate bicycle plans in Western SoMa to be consistent with the recommendations coming out of the City Bicycle Plan.
- *Policy 4.27.8:* Promote the unbundling of parking from new housing.
- *Policy 4.28.1:* Contain and lessen the local traffic and parking impacts of businesses by implementing a set of employer-based TDM measures.

- *Policy 4.28.2:* Promote walking and other non-motorized modes to and from designated Neighborhood Commercial districts and other major destinations in the Western SoMa SUD.
- *Policy 5.3.5:* Strengthen the pedestrian network by extending alleyways to adjacent streets or alleyways wherever possible, or by providing new publicly accessible mid-block rights of way.

The foregoing policies in the Draft Plan would, if implemented, ensure that subsequent development projects in the Draft Plan Area would not generate greenhouse gas emissions, either directly or indirectly, that would have a significant impact on the environment, nor would these projects conflict with the City's GHG Reduction Strategy. Therefore, the *Western SoMa Community Plan* would be consistent with the GHG Reduction Strategy, and effects of Draft Plan implementation related to GHG emissions would be less than significant.

The Adjacent Parcels would indirectly benefit from implementation of the above-noted policies in the adjacent Draft Plan Area. Moreover, existing City policies and programs, detailed above under "Regulatory Setting," would reduce GHG emissions from development that could result from the Rezoning of Adjacent Parcels. Finally, the area occupied by the Adjacent Parcels is too small to result in substantial GHG emissions that could have a significant effect on the environment. For these reasons, the Rezoning of Adjacent Parcels would have a less-than-significant GHG emissions impact.

Mitigation: None required.

Impacts of the 350 Eighth Street Project (Project-Level Analysis)

Impact C-GG-2: The proposed 350 Eighth Street project be consistent with the City's GHG Reduction Strategy and the AB 32 Scoping Plan, and therefore would not result in cumulatively considerable GHG emissions. (Less than Significant)

As noted above under "Regulatory Setting," p. 4.H-15, the San Francisco Planning Department has developed a Greenhouse Gas Analysis Compliance Checklist for use in evaluating a project's consistency with the City's GHG Reduction Strategy, which the BAAQMD has deemed a "Qualified GHG Reduction Strategy." **Table 4.H-2**, below, presents City regulations and programs that are referenced in the GHG Reduction Strategy and that are applicable to the proposed 350 Eighth Street project. Because the 350 Eighth Street project would be consistent with all applicable requirements and programs, the project would be consistent with the City's GHG Reduction Strategy, and thus GHG emissions from the 350 Eighth Street project would be less than significant.

Moreover, as infill development, the 350 Eighth Street project would be constructed in an urban area with good transit access, reducing regional vehicle trips and vehicle miles traveled, and therefore the project's greenhouse gas emissions.

TABLE 4.H-2
CITY GREENHOUSE GAS REGULATIONS APPLICABLE TO THE
PROPOSED 350 EIGHTH STREET PROJECT

Regulation or Program	Requirement	Project Consistency
Commuter Benefits Ordinance (San Francisco Environment Code, Section 421)	Employers in the proposed new building with more than 20 employees in San Francisco would be required to provide at least one of the following programs: 1. A Pre-Tax Election, consistent with federal law, allowing employees to elect to exclude from taxable wages and compensation, employee commuting costs incurred for transit passes or vanpool charges, or 2. Employer Paid Benefit whereby the employer supplies a transit pass for the public transit system requested by each Covered Employee or reimbursement for equivalent vanpool charges at least equal in value to the purchase price of the appropriate benefit, or 3. Employer Provided Transit furnished by the employer at no cost to the employee in a vanpool or bus, or similar multi-passenger vehicle operated by or for the employer.	Applies to individual employers, not a project (building) as a whole. All employers with more than 20 employees would be required by law to participate. Therefore, employers with more than 20 employees would be subject to these provisions, and the 350 Eighth Street project would be consistent with this requirement.
Emergency Ride Home Program	Administered by the San Francisco Department of the Environment, this program allows participating employers to be reimbursed by the Department for the cost to reimburse employees who travel to work by transit, carpool, bicycle, or other method other than single-occupancy auto and who are unable to return home by their normal travel means due to unexpected circumstances.	Applies to individual employers, not a project (building) as a whole. Employers could participate voluntarily. Therefore, the 350 Eighth Street project would be consistent with this program.
Transportation Management Programs (San Francisco Planning Code, Section 163)	Requires new office buildings of more than 100,000 square feet in South of Market mixed-use districts to implement a Transportation Management Program and provide on-site transportation management brokerage services for the life of the building.	The 350 Eighth Street project would have less than 100,000 square feet of office space and therefore this provision would not apply.
Transit Impact Development Fee (San Francisco Administrative Code, Chapter 38)	Establishes a fee of \$5.00 per square foot for downtown office space and \$10.00 per square foot for retail space, paid to the Municipal Transportation Agency to improve local transit services.	The 350 Eighth Street project would be required by law to pay this fee for non-residential uses. Therefore, the 350 Eighth Street project would be consistent with this requirement.
Jobs-Housing Linkage Program (San Francisco Planning Code, Section 413)	The Jobs-Housing Linkage Program is designed to provide housing for those new uses within San Francisco, thereby allowing employees to live close to their place of employment. The program requires a developer to pay a fee or contribute land suitable for housing to a housing developer or pay an in-lieu fee.	The non-residential portion of the 350 Eighth Street project would be required by law to comply with this section of the Planning Code. The 350 Eighth Street project would be consistent with this requirement.
Bicycle parking (Planning Code, Sections 155.2, 155.4, and 155.5)	For <u>office</u> uses of 10,000 – 20,000 square feet, 3 bicycle spaces are required; for 20,000– 50,000 square feet, 6 bicycle spaces are required. For floor area in excess of 50,000 square feet, 12 bicycle spaces are required. For <u>retail</u> uses of 25,000– 50,000 feet, 3 bicycle spaces are required. For 50,000 – 100,000 feet, 6 bicycle spaces are required. For floor area in excess 100,000 square feet, 12 bicycle spaces are required.	The 350 Eighth Street project would provide six at-grade bicycle racks for non-residential uses, and would comply with this provision.
Bicycle parking in parking garages (San Francisco Planning Code, Section 155.2)	Every garage must provide at least 6 bicycle spaces. Garages with 120 – 500 automobile spaces must provide 1 bicycle space for every 20 auto spaces. Garages with more than 500 auto spaces must provide 25 bicycle spaces plus 1 space for every 40 auto spaces in excess of 500, up to a maximum of 50 bicycle spaces.	The 350 Eighth Street project would include accessory parking, and would not provide a parking garage as a principal use. Therefore, this section of the code is not applicable.

TABLE 4.H-2 (Continued)
CITY GREENHOUSE GAS REGULATIONS APPLICABLE TO THE
PROPOSED 350 EIGHTH STREET PROJECT

Regulation or Program	Requirement	Project Consistency
Bicycle parking in Residential Buildings (San Francisco Planning Code, Section 155.5)	For projects up to 50 dwelling units, one Class 1 space for every 2 dwelling units. For projects over 50 dwelling units, 25 Class 1 spaces plus one Class 1 space for every 4 dwelling units over 50.	The 350 Eighth Street project would provide 124 enclosed, secured bicycle parking spaces for residential units, and would comply with this provision.
San Francisco Green Building Requirements (San Francisco Building Code, Chapter 13C.5.102 and 13C.5.106.5.2)	Requires New Large Commercial projects, New High-rise Residential projects and Commercial Interior projects to provide designated parking for low-emitting, fuel efficient, and carpool/van pool vehicles. Mark 8 percent of parking stalls for such vehicles.	The 350 Eighth Street project would be required by law to comply with the Building Code. Therefore, the project would be consistent with this requirement.
Car Sharing Requirements (San Francisco Planning Code, Section 166)	New residential projects or renovation of buildings being converted to residential uses within most of the City's mixed-use and transit-oriented residential districts are required to provide car share parking spaces.	The 350 Eighth Street project would provide five residential car-sharing spaces, which would exceed the three spaces required under this section of the code.
Parking in mixed-use zoning districts (San Francisco Planning Code, Section 151.1)	The Planning Code establishes parking maximums for many of the City's mixed-use districts.	The 350 Eighth Street project proposes 436 spaces (337 residential, 95 retail, 4 arts), plus 5 carshare spaces, which would comply with these provisions.
San Francisco Green Building Requirements for Energy Efficiency (San Francisco Building Code, Chapter 13C)	Under the Building Code, the project's residential component must achieve the Green Point Rated standard, and the commercial component must achieve the LEED Silver Standard, and each component would be required to achieve a 15 percent energy reduction, compared to buildings meeting the 2008 state Energy Code.	The 350 Eighth Street project would be required by law to comply with the Building Code. Therefore, the project would be consistent with this requirement.
San Francisco Green Building Requirements for Energy Efficiency (San Francisco Building Code, Chapter 13C)	For New Large Commercial Buildings - Requires Enhanced Commissioning of Building Energy Systems. For new large buildings greater than 10,000 square feet, commissioning shall be included in the design and construction to verify that the components meet the owner's or owner representative's project requirements.	The 350 Eighth Street project would be required by law to comply with the Building Code. Therefore, the project would be consistent with this requirement.
Commissioning of Building Energy Systems (LEED prerequisite, EAp1)	Requires Fundamental Commissioning for New High-rise Residential, Commercial Interior, Commercial and Residential Alteration projects	With no occupied floors above 75 feet in height, the 350 Eighth Street project is not a high-rise residential building, and this provision is not applicable.
San Francisco Green Building Requirements for Stormwater Management (San Francisco Building Code, Chapter 13C)	All projects in San Francisco that disturb more than 5,000 square feet of ground surface are required to comply with the SFPUC's stormwater design guidelines, which emphasize low impact development using a variety of Best Management Practices for managing stormwater runoff and reducing impervious surfaces, thereby reducing the volume of combined stormwater and sanitary sewage requiring treatment.	The 350 Eighth Street project would be required by law to comply with the Building Code. Therefore, the project would be consistent with this requirement.
San Francisco Green Building Requirements for water use reduction (San Francisco Building Code, Chapter 13C)	Non-high-rise residential buildings required to achieve the Green Point Rated standard, such as the proposed 350 Eighth Street project, must attain a 20 percent reduction in indoor potable water use below the 2006 Uniform Plumbing Code baseline. Commercial buildings smaller than 25,000 square feet must also reduce indoor potable water use by 20 percent, while larger commercial buildings	Buildings in the 350 Eighth Street project would be required by law to comply with the Building Code. Therefore, the 350 Eighth Street project would be consistent with this requirement.

TABLE 4.H-2 (Continued)
CITY GREENHOUSE GAS REGULATIONS APPLICABLE TO THE
PROPOSED 350 EIGHTH STREET PROJECT

Regulation or Program	Requirement	Project Consistency
	must reduce indoor potable water use by 30 percent below Building Code baseline.	
San Francisco Water Efficient Irrigation Ordinance (San Francisco Administrative Code, Chapter 63)	Projects that include 1,000 square feet (sf) or more of new or modified landscape are subject to this ordinance, which requires that landscape projects be installed, constructed, operated, and maintained in accordance with rules adopted by the SFPUC that establish a water budget for outdoor water consumption. Tier 1: 1,000 sf ≤ project landscape < 2,500 sf; Tier 2: Project landscape area is greater than or equal to 2,500 sf. (Note: Tier 2 compliance requires the services of landscape professionals.)	The 350 Eighth Street project would be required by law to comply with the Administrative Code. Therefore, the 350 Eighth Street project would be consistent with this requirement.
Commercial and Residential Water Conservation Ordinances (San Francisco Building Code, Chapters 13A and San Francisco Housing Code, Chapter 12A)	Requires projects to meet minimum standards for water conservation, including use of low-flow (2.5 gallons per minute [gpm]) showerheads, use of no more than one showerhead per valve, use of low-flow (2.2 gpm) faucets, use of low-flow toilets (1.6 gallons per flush) and urinals (1 gallon per flush), and repair of all water leaks.	The 350 Eighth Street project would be required by law to comply with the Building Code. Therefore, the 350 Eighth Street project would be consistent with this requirement.
San Francisco Green Building Requirements for renewable energy (San Francisco Building Code, Chapter 13C)	Effective January 1, 2012, all commercial buildings must generate 1 percent of project energy on-site from renewable sources, or purchase renewable power, or achieve an additional 10 percent reduction in energy use from 2008 Building Code standards.	The 350 Eighth Street project would be required by law to comply with the Building Code. Therefore, the 350 Eighth Street project would be consistent with this requirement.
San Francisco Green Building Requirements for solid waste (San Francisco Building Code, Chapter 13C)	Pursuant to Section 1304C.0.4 of the Green Building Ordinance, all new construction, renovation and alterations subject to the ordinance are required to provide recycling, composting and trash storage, collection, and loading that is convenient for all users of the building.	The 350 Eighth Street project would be required by law to comply with the Building Code. Therefore, the 350 Eighth Street project would be consistent with this requirement.
Mandatory Recycling and Composting Ordinance (San Francisco Environment Code, Chapter 19)	All persons in San Francisco must separate their refuse into recyclables, compostables, and trash, and place each type of refuse in a separate container designated for that type of refuse.	The 350 Eighth Street project would be required by law to comply with the Environment Code. Therefore, the 350 Eighth Street project would be consistent with this requirement.
San Francisco Green Building Requirements for construction and demolition debris recycling (San Francisco Building Code, Chapter 13C)	Green Point Rated and smaller commercial buildings must divert at least 65 percent of construction debris from landfills. Large buildings (over 25,000 square feet) must divert at least 75 percent of construction waste.	The 350 Eighth Street project would be required by law to comply with the Building Code. Therefore, the 350 Eighth Street project would be consistent with this requirement.
Construction Demolition and Debris Recovery Ordinance (San Francisco Environment Code, Chapter 14)	This ordinance requires that at least 65 percent of all construction and demolition material to be diverted from landfills.	The 350 Eighth Street project would be required by law to comply with the Environment Code. Therefore, the 350 Eighth Street project would be consistent with this requirement.
Street Tree Planting Requirements for New Construction (San Francisco Planning Code, Section 138.1(c)(1))	New construction, significant alterations or relocation of buildings within many of San Francisco's zoning districts requires planting one 24-inch box tree for every 20 feet along the property street frontage.	The 350 Eighth Street project would be required by law to comply with the Planning Code. The proposed 350 Eighth Street project would include planting of new street trees on all four street frontages (Eighth, Harrison, Gordon, Ringold Streets), consistent with Planning Code requirements, and would also include plantings in the interior

TABLE 4.H-2 (Continued)
CITY GREENHOUSE GAS REGULATIONS APPLICABLE TO THE
PROPOSED 350 EIGHTH STREET PROJECT

Regulation or Program	Requirement	Project Consistency
		courtyard (open space). Therefore, the 350 Eighth Street project would be consistent with this requirement.
Light Pollution Reduction (San Francisco Building Code, Chapter 13C5.106.8)	For nonresidential projects, comply with lighting power requirements in CA Energy Code, CCR Part 6. Requires that lighting be contained within each source. No more than .01 horizontal lumen footcandles 15 feet beyond site, or meet LEED credit SSc8.	The 350 Eighth Street project would be required by law to comply with the Health Code. Therefore, the 350 Eighth Street project would be consistent with this requirement.
Construction Site Runoff Pollution Prevention for New Construction (San Francisco Building Code, Chapter 13C)	Construction Site Runoff Pollution Prevention requirements depend upon project size, occupancy, and the location in areas served by combined or separate sewer systems. Projects meeting a LEED® standard must prepare an erosion and sediment control plan (LEED® prerequisite SSP1). Other local requirements may apply regardless of whether or not LEED® is applied such as a stormwater soil loss prevention plan or a Stormwater Pollution Prevention Plan (SWPPP).	The 350 Eighth Street project would be required by law to comply with the Health Code. Therefore, the 350 Eighth Street project would be consistent with this requirement.
Enhanced Refrigerant Management (San Francisco Building Code, Chapter 13C.5.508.1.2)	All new large commercial buildings must not install equipment that contains chlorofluorocarbons (CFCs) or halons.	The 350 Eighth Street project would be required by law to comply with the Health Code. Therefore, the 350 Eighth Street project would be consistent with this requirement.
Low-emitting Adhesives, Sealants, and Caulks (San Francisco Building Code, Chapters 13C.5.103.1.9, 13C.5.103.4.2, 13C.5.103.3.2, 13C.5.103.2.2, 13C.504.2.1)	If meeting a LEED Standard, adhesives and sealants (VOCs) must meet SCAQMD Rule 1168 and aerosol adhesives must meet Green Seal standard GS-36 (not applicable for New High Rise residential). If meeting a GreenPoint Rated Standard, adhesives and sealants (VOCs) must meet SCAQMD Rule 1168.	The 350 Eighth Street project would be required by law to comply with the Health Code. Therefore, the 350 Eighth Street project would be consistent with this requirement.
Low-emitting materials (San Francisco Building Code, Chapters 13C.4.103.2.2,	For Small and Medium-sized Residential Buildings - Effective January 1, 2011 meet GreenPoint Rated designation with a minimum of 75 points. New High-Rise Residential Buildings meet LEED Silver Rating or GreenPoint Rated designation with a minimum of 75 points. For alterations to residential buildings, documentation must be submitted regarding the use of low-emitting materials. If meeting a LEED Standard, for adhesives and sealants (LEED credit EQ4.1), paints and coatings (LEED credit EQ4.2), and carpet systems (LEED credit EQ4.3), where applicable. If meeting a GreenPoint Rated Standard, meet the GreenPoint Rated Multifamily New Home Measures for low-emitting adhesives and sealants, paints and coatings, and carpet systems,	The 350 Eighth Street project would be required by law to comply with the Health Code. Therefore, the 350 Eighth Street project would be consistent with this requirement.
Low-emitting Paints and Coatings (San Francisco Building Code, Chapters 13C.5.103.1.9, 13C.5.103.4.2, 13C.5.103.3.2, 13C.5.103.2.2, 13C.504.2.2 through 2.4)	If meeting a LEED Standard, architectural paints and coatings must meet Green Seal standard GS-11, anti-corrosive paints meet GC-03, and other coatings meet SCAQMD Rule 1113 (not applicable for New High Rise residential). If meeting a GreenPoint Rated Standard, interior wall and ceiling paints must meet <50 grams per liter VOCs regardless of sheen. VOC Coatings must meet SCAQMD Rule 1113.	The 350 Eighth Street project would be required by law to comply with the Health Code. Therefore, the 350 Eighth Street project would be consistent with this requirement.

TABLE 4.H-2 (Continued)
CITY GREENHOUSE GAS REGULATIONS APPLICABLE TO THE
PROPOSED 350 EIGHTH STREET PROJECT

Regulation or Program	Requirement	Project Consistency
Low-emitting Flooring, including carpet (San Francisco Building Code, Chapters 13C.5.103.1.9, 13C.5.103.4.2, 13C.5.103.3.2, 13C.5.103.2.2, 13C.504.3 and 13C.4.504.4)	If meeting a LEED Standard, hard surface flooring (vinyl, linoleum, laminate, wood, ceramic, and/or rubber) must be Resilient Floor Covering Institute FloorScore certified; carpet must meet the Carpet and Rug Institute (CRI) Green Label Plus; Carpet cushion must meet CRI Green Label; carpet adhesive must meet LEED EQc4.1 (not applicable for New High Rise residential). If meeting a GreenPoint Rated Standard, all carpet systems, carpet cushions, carpet adhesives, and at least 50 percent of resilient flooring must be low-emitting.	The 350 Eighth Street project would be required by law to comply with the Health Code. Therefore, the 350 Eighth Street project would be consistent with this requirement.
Low-emitting Composite Wood (San Francisco Building Code, Chapters 13C.5.103.1.9, 13C.5.103.4.2, 13C.5.103.3.2, 13C.5.103.2.2 and 13C.4.504.5)	If meeting a LEED Standard, composite wood and agrifiber must not contain added urea-formaldehyde resins and must meet applicable ARB Air Toxics Control Measure. If meeting a GreenPoint Rated Standard, projects must meet applicable ARB Air Toxics Control Measure formaldehyde limits for composite wood.	The 350 Eighth Street project would be required by law to comply with the Health Code. Therefore, the 350 Eighth Street project would be consistent with this requirement.
Wood Burning Fireplace Ordinance (San Francisco Building Code, Chapter 31, Section 3102.8)	Bans the installation of wood burning fire places except for pellet-fueled wood heaters, EPA-approved wood heaters, and wood heaters approved by the Northern Sonoma Air Pollution Control District.	The 350 Eighth Street project does not propose wood-burning fireplaces. The 350 Eighth Street project would comply with these provisions.
Regulation of Diesel Backup Generators (San Francisco Health Code, Article 30)	Requires (among other things) that all diesel generators to be registered with the Department of Public Health and be equipped with the best available air emissions control technology.	The 350 Eighth Street project would be required by law to comply with the Health Code. Therefore, the 350 Eighth Street project would be consistent with this requirement.

As described above, the City has developed its own strategy to address greenhouse gas emissions on a local level. The vision of the strategy is expressed in the City's Climate Action Plan, but implementation of the strategy is appropriately articulated within other citywide plans (*San Francisco General Plan*, *Sustainability Plan*, etc.), policies (*Transit First Policy*, *Precautionary Principle Policy*), regulations (*Green Building Ordinance*, *Building Code*, *Planning Code*), and other provisions.

The 350 Eighth Street project would be required to comply with all San Francisco ordinances and regulations that are aimed at reducing GHG emissions (see Table 4.H-2, p. 4.H-21). The 350 Eighth Street project would also be required to comply with other GHG reduction regulations, such as applicable AB 32 Scoping Plan measures that are ultimately adopted and become effective during implementation of proposed project. Given that the City has adopted an extensive array of GHG reduction strategies recommended in the AB 32 Scoping Plan, that the City's GHG Reduction Strategy includes binding, enforceable measures to be applied to development projects, such as the 350 Eighth Street project, and that the City's GHG Reduction Strategy has produced measurable reductions in GHG emissions, the project would not conflict with either the state or local GHG reduction strategies. In addition, the 350 Eighth Street project would not conflict with any plans, policies, or regulations adopted for the purpose of reducing GHG emissions. Therefore, the 350 Eighth Street project would have a less-than-significant impact with respect to plans for reduction of GHG emissions.

Mitigation: None required.

4.I. Wind and Shadow

This section describes wind impacts associated with the Proposed Project (the Draft Plan, Rezoning of Adjacent Parcels, and 350 Eighth Street project), specifically wind impacts on pedestrian areas such as sidewalks and plazas. This section also describes the shadow impacts associated with the Proposed Project, specifically shadow effects on publicly accessible areas, including public parks, publicly accessible private open spaces, and sidewalks.

Wind

Environmental Setting

San Francisco's Wind Environment

Long-term wind data in San Francisco are available from historical wind records from the U.S. Weather Bureau weather station located above the old Federal Building at 50 United Nations Plaza. Average wind speeds in San Francisco are the highest in the summer and lowest in winter. However, the strongest peak winds occur in winter (wind direction is also most variable in the winter). Based on over 40 years of recordkeeping, the highest mean hourly wind speeds (approximately 20 miles per hour, or mph) occur in July, while the lowest mean hourly wind speeds (in the range of 6 to 9 mph) occur in November.

In San Francisco, westerly to northwesterly winds are the most frequent and strongest winds during all seasons.¹ Of the 16 primary wind directions, four have the greatest frequency of occurrence: northwest (accounting for 10 percent of all winds), west-northwest (accounting for 14 percent of all winds), west (accounting for 35 percent of all winds), and southwest (accounting for 9 percent of all winds). Over 90 percent of measured winds over 13 mph blow from these directions.

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. These redirected winds can be relatively strong, turbulent, and incompatible with the intended uses of nearby ground-level spaces. 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. Thus, wind impacts are generally caused by large building masses extending substantially above their surroundings, and by buildings oriented such that a large wall catches a prevailing wind, particularly if such a wall includes little or no articulation. In general, new buildings less than approximately 80 feet in height are unlikely to result in substantial adverse effects on ground-level winds such that pedestrians would be uncomfortable. (Such winds may exist under existing conditions, but shorter buildings typically do not cause substantial changes in ground-level winds.)

¹ Wind directions are reported as directions from which the winds blow.

Within the Project Area (including the *Western SoMa Community Plan* Area, Adjacent Parcels, and 350 Eighth Street project site) and vicinity, the structures that most greatly influence winds are the tall structures along Market and Mission Streets as well as building façade articulation along various other streets within the Project Area. Building heights within the Project Area range from one to seven stories, although the majority of structures are within the two- to five-story range.

Wind Patterns in the Project Area Vicinity

Both the upwind topography and the nearby buildings strongly influence wind conditions within the Project Area. The upwind topography (i.e., north of Mission Street) is relatively flat and shapes and directs the winds as they approach particular sites within the Project Area. The taller buildings redirect those winds toward the ground level, while all buildings introduce turbulence and local accelerations.

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, such as McAllister, Grove, and Hayes Streets and Golden Gate Avenue, 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 in combination make up nearly half of the winds, contribute to the strong winds that flow along the east-west-oriented streets.

Northwest winds are impeded at the street level, due to their misalignment with the north of Market Street grid; however, these winds continue to flow overhead, toward SoMa neighborhoods. Southwest winds are similarly impeded at street level; they also continue to flow overhead, but they do not flow toward the South of Market area. Both northwest winds and southwest winds also contribute to winds along the east-west-oriented streets.

Once the pedestrian-level winds that flow along an east-west-oriented street reach Market Street, they 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 leads into the South of Market 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.²

Wind flows along each of the northwest-southeast (i.e., numbered) streets of the South of Market are also directly generated by the northwest winds, which align with the South of Market grid 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 because they strike the faces of South of Market buildings head-on and are brought down to pedestrian level by those buildings.

² 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.

Southwest winds also align with the street grid, strike the faces of SoMa buildings head-on, come down to pedestrian level, and channel 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 Project Area relatively unimpeded over similar parallel blocks of low-rise (mostly two- to four-story) buildings.

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 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 pedestrian level in the Project Area.

Results of Prior Wind Tests

Wind tunnel tests³ have been performed for several projects in the vicinity of the Project Area, including projects (some completed and some not) at 949 Market Street, Fifth and Howard Streets (Intercontinental Hotel), and 855 Folsom Street, as well as multiple tests in the 10th and Market Streets area and in the Mission Bay North Redevelopment Area. These tests provide useful information about the general wind conditions in the Project Area vicinity.

Based on prior testing, winds speeds north of the Project Area, near 10th and Market Streets, are considered to be moderate to windy, with the average of the wind speeds exceeded 10 percent of the time being over 14 mph. The high-rise buildings along Market and Mission Streets contribute to the generally windy environment within the Project Area. Winds south of the Project Area are also moderately windy, but less so than around Market Street.

Because there is relative uniformity in building heights and masses along the streets within and surrounding the Project Area, generalizations concerning wind conditions and relative wind speeds can be made for the Project Area itself. Based on the above, the wind speeds in the north portion of the Project Area, including the Adjacent Parcels, are expected to be moderately windy, with wind speeds expected to diminish further south. This is due to the predominance of low- and mid-rise structures throughout the Project Area that slow winds as they reach farther south. Wind speeds along the eastern sidewalks of the northwest-southeast-oriented streets (such as Eighth, Ninth, 10th, 11th, etc.) are generally higher than wind speeds along the western sidewalks of those streets. This is because, as winds approach from the north of Market, they do so along east-west streets and must turn sharply to the southeast to enter the South of Market area. This results in stronger winds on the eastern sidewalks and a comparably calmer wind environment along the western sidewalks.

Within the southern portion of the Project Area (south of Harrison Street, in an area inclusive of the 350 Eighth Street project site), wind speeds are influenced by the open areas under the elevated freeway

³ To undertake a wind tunnel test, a scale model of the proposed building, each surrounding building and, where applicable, topography, is created for a circular area within a radius of approximately 1,500 feet of a project site. The model is fitted with sensors that measure wind speeds and placed inside a device known as a wind tunnel, where fan-generated air flow is used to simulate actual winds. Because actual winds blow from variable directions and the wind tunnel can test only one direction at a time, a series of tests is run to simulate winds blowing from different directions, and the sensor readings are then run through a computer program to generate the ultimate results.

structures and, as a result, just south of Bryant Street, are expected to be relatively strong. Beyond two or so blocks south of Bryant Street, winds are expected to decelerate due to the low- to mid-rise development in this area, and wind speeds at the pedestrian level are expected to be moderate. Throughout the Project Area, wind speeds along the major arterials are typically higher than wind speeds along the smaller streets and alleys. This is because mid-block alleys tend to narrow the channel through which winds can flow and result in greater wind turbulence and reduced wind speeds at the pedestrian level.

Regulatory Setting

San Francisco 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. Similarly, Section 148 requires that buildings not cause equivalent wind speeds to reach or exceed the hazard level of 26 mph for a single full hour of the year. Section 148 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.⁴ Throughout this discussion, unless otherwise stated, use of the term "wind speeds" refers to *equivalent wind speeds* that are exceeded 10 percent of the time. Other sections of the San Francisco Planning Code apply the same conditions of Section 148 to other districts of San Francisco.

For the purpose of determining compliance with the Planning Code, buildings with a height of more than 80 feet above ground usually are evaluated by wind tunnel testing, according to a standard wind testing protocol. On the other hand, buildings with a height of 80 feet or less usually have little or no effect on the pedestrian wind environment.

Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR, the Proposed Project would result in a significant effect with respect to the pedestrian wind environment if it would:

- Alter wind in a manner that substantially affects public areas.

Approach to Analysis

San Francisco Planning Code Section 148 conditions are used by the San Francisco Planning Department to evaluate the CEQA compliance of projects under environmental review. Therefore, project compliance with the wind comfort and wind hazard criteria of Section 148 is used to determine the potential environmental impact of a given project.

In this case, a significant wind impact would result if individual buildings encouraged by the implementation of the Draft Plan or Rezoning of Adjacent Parcels, or buildings proposed as part of the

⁴ *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.

350 Eighth Street project, 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 the Planning Code Section 148. An individual building that would cause exceedances of the comfort criteria, but not the wind hazard criterion, would not be considered to have a significant impact.

The analysis below considers on changes to building height limits proposed as part of the Draft Plan as well as potentially taller development that could occur as a result of the Draft Plan or Rezoning of Adjacent Parcels, and the effects of such changes on wind patterns in the Project Area. In some cases, existing development is not as tall as the current height limits allow, and those parcels could be developed with new buildings regardless of the Draft Plan or Rezoning of Adjacent Parcels. Moreover, neither the Draft Plan nor the Rezoning of Adjacent Parcels in and of themselves would directly lead to an increase in the height of existing buildings or the changes in wind patterns. Nevertheless, throughout the Project Area, the Draft Plan and Rezoning of Adjacent Parcels could create incentives for development due to the proposed rezoning. New buildings could be constructed up to the applicable height limit, unless restrictions were imposed as a result of shadow impacts identified under Section 295 (discussed under “Shadow” below) or other applicable Planning Code controls.

In the case of 350 Eighth Street project, the proposed buildings on this site would be much larger than what currently exists, which has the potential to directly affect the pedestrian wind environment.

It is noted that transportation and street network improvements that would be implemented as part of the Draft Plan would not have any impacts with respect to wind, as they would not alter wind in a manner that substantially affects public areas. For this reason, these impacts are not discussed any further in this section.

Impacts of the Western SoMa Community Plan and Rezoning of Adjacent Parcels (Program-Level Analysis)

Impact WS-1: Neither the implementation of the Draft Plan nor the Rezoning of the Adjacent Parcels would alter wind in a manner that would substantially affect public areas. (Less than Significant with Mitigation)

The discussion of potential wind conditions within the Project Area considers how wind speeds would be affected by the proposed building height reclassifications. As discussed in Chapter 2, Project Description, the height limit increases proposed by the Draft Plan would be relatively modest and would be limited to discrete locations. In general, increases throughout most of the Draft Plan Area would be limited to below 80 feet, with no height increases proposed on the Adjacent Parcels. However, height limits along Townsend Street would be increased from an existing height limit of 65 feet to a height limit of 85 feet. This change has the potential to increase pedestrian-level wind speeds to a level that could result in a significant impact.

The Draft Plan includes Policy 7.1.1: “Identify opportunities to create new public parks, recreation facilities and open spaces and provide at least one new public park or open space serving Western SoMa.” The Draft Plan would require new commercial and residential development over a certain size to provide publicly accessible open space (such as plazas) on those sites. The creation of such open spaces throughout the Draft Plan Area could result in parcels that would be exposed to wind speeds in excess of

the Section 148 wind hazard criterion due to the anticipated changes to the surrounding development as a result of the Proposed Project.

The Draft Plan contains the following policy that addresses wind impacts:

- *Policy 5.3.6:* Require that all development in the Western SoMa include all feasible measures to prevent or minimize wind downdrafts and other adverse wind effects on sidewalks and plazas.

Even with this policy, in an abundance of caution, wind impacts of subsequent development within the Draft Plan Area are assumed to be significant. Implementation of **Mitigation Measure M-WS-1**, below, would reduce the wind impact of the Draft Plan to a less-than-significant level.

The Rezoning of Adjacent Parcels does not propose height and bulk reclassification or include specific policies that seek to minimize future wind hazards. Nonetheless, future development that could be encouraged by the Rezoning of Adjacent Parcels also has the potential to result in significant wind impacts on public areas, particularly on Adjacent Parcels that are zoned for height limits of up to 160 feet (blocks 3509 and 3510). Implementation of Mitigation Measure M-WS-1 would reduce the wind impact of the Rezoning of Adjacent Parcels to a less-than-significant level.

Mitigation Measure

M-WS-1: Screening-Level Wind Analysis and Wind Testing. For projects within the Project Area, the San Francisco Planning Department shall conduct the following review:

- *Screening-Level Wind Analysis:* Any structure proposed within the Draft Plan Area or on the Adjacent Parcels over 80 feet in height shall be required to undergo screening-level wind impact analysis that would take into account the surrounding topography and building heights. As part of this analysis, a qualified wind expert shall review the proposed building plans as well as results of other wind tests conducted nearby, if available. Based on this review, the wind expert shall make a determination as to whether wind hazards are expected as a result of project development. If not enough information is available to make a determination with relative certainty that no wind hazard criteria are expected, a project-level wind test shall be conducted.
- *Project-Level Wind Test:* If the screening level wind analysis determines that the project may result in wind hazards, a project-level wind test shall be prepared by a qualified wind expert to determine impacts on pedestrian-level wind speeds. The methodology of a wind test shall be consistent with accepted San Francisco Planning Department practice. The project-level wind test shall be conducted and interpreted in a technical memorandum, with test results related to the Planning Code Section 148 hazard criterion. To satisfy the criteria of San Francisco Planning Code Section 148, two sets of wind tunnel test results shall be produced: one that indicates, for each test location, the wind speed that is exceeded 10 percent of the time, year-round; and another that indicates whether a wind speed of 26 miles per hour is exceeded for 1 full hour of the year. The former results would determine whether the project would meet the Planning Code's "comfort criteria," while the latter results would determine whether the project would cause an exceedance of the Planning Code's "hazard criterion."

- *Design Modifications:* If a proposed structure is determined to result in significant wind impacts, modifications shall be incorporated into the project design to reduce these impacts so as not to cause ground-level wind currents to exceed the hazard level of 26 mph for a single full hour of the year. Modifications to reduce wind speeds could include one or more of the following: shifting the building's orientation; adding articulation, texturing, or setbacks along one or more of the façades; increasing the height and density of exterior landscaping and related structures; and adding more landscaping and screening structures.

Significance after Mitigation: Less than Significant.

Impacts of the 350 Eighth Street Project (Project-Level Analysis)

Impact WS-2: The proposed 350 Eighth Street project would not alter wind in a manner that would substantially affect public areas. (Less than Significant)

While the structures proposed for the 350 Eighth Street project site, ranging from 53 to 65 feet in height, would be taller than nearby buildings, they would not be sufficiently tall to result in adverse effects on ground-level winds. Furthermore, the building masses would be broken up and architecturally articulated along each of the main façades (Eighth, Harrison, Ringold, and Gordon Streets), which would reduce the pedestrian-level wind speeds along these sidewalks. The residential structures in the block's interior would be generally protected from wind impacts by the mixed-use structures that would front the main streets. Therefore, wind effects associated with the proposed 350 Eighth Street project would be less than significant.

Mitigation: None required.

Shadow

Environmental Setting

Existing Parks and Open Spaces in the Project Area

The Project Area contains one existing San Francisco Recreation and Park Department (SFRPD)-managed facility, the Howard-Langton Mini Park, which is 0.22 acre (or 9,374 square feet) in size and is located at Howard and Langton Streets near Seventh Street. This park includes a large community garden with benches and tables and is bordered by a metal slatted fence, limiting public access to specified daylight hours. Existing development surrounding the Howard-Langton Mini Park consists primarily of two- and three-story commercial and residential buildings along the Langton Street alley and two-story light industrial buildings to the east and west of the park (along Howard Street). The Howard-Langton Mini Park is surrounded by parcels zoned at 40-foot and 50-foot height limits.

Existing Parks and Open Spaces Outside the Project Area

Just outside the Project Area are four additional SFRPD-managed facilities, discussed below.

Victoria Manalo Draves Park

The Victoria Manalo Draves Park is located between Folsom and Harrison Streets and between Columbia Square and Sherman Street, across Harrison Street from the Project Area. This neighborhood park encompasses approximately 2 acres and features amenities such as a baseball diamond, basketball court, and community garden. To the west of the park is the newly constructed Bessie Carmichael Elementary School/Filipino Education Center. The southern edge of this park fronts Harrison Street, adjacent to the Project Area boundary. Just south of the Victoria Manalo Draves Park and within the Project Area is the I-80 skyway, with the Hall of Justice complex just south of the freeway parcels. Within the Project Area, the freeway portion of the block has a 30-foot height limit, while the portion of the block containing the Hall of Justice facilities has a 105-foot height limit. Existing height limits surrounding the park, which are mostly within the East SoMa neighborhood, are set predominantly at 40 feet, although one parcel at the southern corner has a 50-foot height limit.

South of Market Recreation Center

The South of Market Recreation Center is located at 207 Sixth Street, on the corner of Folsom Street. This public open space is located approximately one block north as well as approximately two blocks east of the Project Area boundary and is within the East SoMa neighborhood. This 1-acre neighborhood park contains a number of recreational facilities, including basketball courts, a playground with sand pit, and open areas for passive recreation. The South of Market Recreation Center is surrounded by a mix of uses, ranging primarily between two and four stories in height. The height limits in the area are mixed and the surrounding blocks include 45-, 50-, 65- and 85-foot height limits.

U.N. and Civic Center Plazas

North of the Project Area and north of Market Street are the U.N. and Civic Center Plazas. The U.N. Plaza is an approximately 2.6-acre pedestrian mall extending from Market Street to Hyde Street in the city's Civic Center area. The plaza contains landscaped areas and limited seating and is used primarily for passive recreation, in addition to holding events such as seasonal farmer's markets and occasional art festivals. The Civic Center Plaza is an approximately 5.9-acre public open space located adjacent to the City Hall, at the intersections of Grove and Larkin Streets. It contains lawn areas and two tot lots. Both the U.N. and Civic Center Plazas are surrounded by mid-rise and high-rise buildings, most of which are associated with public and institutional uses, which cast shadow on them much of the day and year. These buildings include City Hall, Bill Graham Civic Auditorium, Fox Plaza, Orpheum Theater, and the Main Library and vary in height from approximately 40 to approximately 100 feet.

Regulatory Setting

San Francisco Planning Code Section 295 (Sunlight Ordinance)

San Francisco Planning Code Section 295, the Sunlight Ordinance, was adopted through voter approval of Proposition K in 1984 to protect certain public open spaces from shadowing by new structures.

Section 295 generally prohibits the issuance of building permits for structures or additions to structures greater than 40 feet in height that would shade property under the jurisdiction of or designated to be acquired by the Recreation and Park Commission, during the period from 1 hour after sunrise to 1 hour before sunset. 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.” Of the five open spaces discussed above, only Civic Center Plaza is subject to Section 295.

In practice, Section 295 acts as a zoning overlay that further limits heights and/or shapes of certain buildings around protected parks; the Section 295 limit is in addition to the height limits set forth by the height and bulk districts. Privately owned open spaces and those under the jurisdiction of other entities, such as the National Park Service, for example, are not subject to Section 295.

San Francisco Planning Code Section 147

The goal of Planning Code Section 147 is to reduce shadows on specific public or publicly accessible open spaces, other than those protected by Section 295 in Downtown Commercial (C-3), South of Market Mixed Use, and Eastern Neighborhoods Mixed Use Districts. Under this section, proposed new buildings and additions to existing buildings where the building height exceeds 50 feet shall be shaped to minimize shadow on public plazas and other publicly accessible spaces other than those protected under Section 295, including privately accessible but privately owned open spaces. Any height restriction must be considered in accordance with the guidelines of good design and without unduly restricting the development potential of the property. In SoMa districts, a determination of compliance with Section 147 is made by the Zoning Administrator, in accordance with Planning Code Section 307.

Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR, the Proposed Project would result in a significant effect with respect to shadows if it would:

- Create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas.

Approach to Analysis

Shadow effects that are attributable to the Proposed Project are analyzed qualitatively for representative times of day (morning, noon, and evening) during the different seasons of the year. In December on the winter solstice, when the sun is at its lowest, the shadows are at their longest, and in June on the summer solstice, when the sun is at its highest, the shadows are at their shortest. Shadow effects are also analyzed around the spring equinox, when shadows are midway through a period of shortening, and at the fall

equinox, when shadows are midway through a period of lengthening. Shadows on any other day of the year would be within the range of shadows presented during the seasons and times of day described above.

The analysis below focuses on changes to building height limits proposed as part of the Draft Plan and the possible effects of such changes on shading of parks and other publicly accessible spaces. The analysis also considers future development on Adjacent Parcels that could be encouraged by the proposed Rezoning of Adjacent Parcels. In some cases, existing development in the Draft Plan Area or on the Adjacent Parcels, near publicly accessible parks and open spaces, is not as tall as the current height limits allow and those parcels could be developed with new buildings regardless of the Draft Plan or the Rezoning of Adjacent Parcels. Thus, while the Draft Plan and Rezoning of Adjacent Parcels, in and of themselves, would not directly lead to an increase in the height of, or the shadows cast by, existing buildings, in areas where the Proposed Project would allow for changes to permitted heights, gradual development is likely to occur, as the incentive for development would be greater due to the additional permitted heights or changes to zoning districts. New buildings could be constructed throughout the Project Area up to the applicable height limit, unless restrictions were imposed by Section 295, Section 147, or other applicable controls under the Planning Code. In assessing shadow impacts, this analysis also considered open space usage, time of day and/or time of year during which the shadow occurs; physical layout and facilities affected by the shadow; intensity, size, shape, and location of shadow; and proportion of open space affected by shadow.

The analysis also addresses any new shading that would occur on the 350 Eighth Street project site, the surrounding properties, and the nearby open spaces, as a result of the 350 Eighth Street project.

It is noted that transportation and street network improvements that would be implemented as part of the Draft Plan would not have any impacts with respect to shadow, as they would not create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas. For this reason, these impacts are not discussed any further in this section.

Impacts of the Western SoMa Community Plan and Rezoning of Adjacent Parcels (Program-Level Analysis)

Impact WS-3: The implementation of the Draft Plan and Rezoning of Adjacent Parcels (individually and in combination) would create new shadow in a manner that would substantially affect outdoor recreation facilities or other public areas. (Significant and Unavoidable)

Shadow Impacts on Existing Parks and Open Spaces

The discussion below analyzes impacts of the proposed Draft Plan and Rezoning of Adjacent Parcels on the five parks and open spaces under the jurisdiction of the SFRPD, one of which (Howard-Langton Mini Park) is within the boundaries of the Draft Plan Area and four of which (Victoria Manalo Draves Park, South of Market Recreation Center, U.N. Plaza, and Civic Center Plaza) are located in close proximity to

the Project Area. Discussion of shadow impacts on potential future parks and open spaces that may be created within the Project Area, as well as sidewalks, is also considered.

All future development greater than 40 feet in height in the area surrounding the Howard-Langton Mini Park, the Victoria Manalo Draves Park, and the South of Market Recreation Center would be subject to the Section 295 review process, and the potential shadow would be evaluated as part of the project approval process based on the guidelines of that Planning Code section. In addition, future proposals for development would undergo site-specific environmental review, including individual evaluation of shadow impacts to public parks and open spaces. As part of that analysis a number of factors would be considered, including, but not limited to: open space usage; time of day and/or time of year during which the shadow occurs; physical layout and facilities affected by the shadow; intensity, size, shape, and location of shadow; and proportion of open space affected by shadow. The fact that the Planning Commission could not approve a project determined to have significant shadow impacts on properties under the jurisdiction of the Recreation and Park Commission per Section 295 would greatly minimize potential new shadow from future development. However, because the potential exists for new shadow and because the feasibility of complete mitigation for potential new shadow impacts of currently unknown development proposals cannot be determined at this time, it cannot be concluded that this impact would be less than significant. Therefore the shadow impact is judged to be **significant and unavoidable** for the Howard-Langton Mini Park and the Victoria Manolo Draves Park. As explained in further detail below, shadow impacts on other parks and open spaces, including the South of Market Recreation Center, U.N. Plaza and Civic Center Plaza, would be less than significant.

As noted above, the Howard-Langton Mini Park is currently surrounded on the east, west, and south, by buildings approximately 25 to 30 feet in height. One or more buildings up to but no more than 40 feet tall could replace or add to the existing structure(s), which would add additional shadow to the mini park that would not be subject to Section 295. However, this open space would maintain substantial mid-day sunlight. With the Draft Plan, the height limit on parcels east and west of the mini park would increase by 5 feet, from the existing height limit of 50 feet to a height limit of 55 feet. Parcels along Seventh Street would have a height limit of 65 feet, also up from 50 feet. These changes would permit development that could substantially increase shadow on the Howard-Langton Mini Park. Additional shading on the park from structures on Seventh Street would occur during summer morning hours, when shadows would extend in a southwesterly direction over the park. Although Section 295 would effectively function as a means to limit height of any structures that could be developed at this location,⁵ it would not apply to structures 40 feet in height or less, which could result in new shading on this park. It should be noted that the enjoyment of the park would likely not be substantially or adversely affected by any modest new shading that could occur, as the park would not be affected by new shading most times of the day or times of the year. Nevertheless, in an abundance of caution, this impact is considered to be **significant and unavoidable**.

⁵ The typical effect of applying Planning Code Section 295 to proposed projects, with respect to most parks, is to not permit any substantial new shadow. In practice, however, cases where initial screening of a project reveals that the project would result in new shading, this effect can be reevaluated pursuant to the process outlined in Section 295. According to Section 295(b), the Planning Commission “shall disapprove the issuance of any building permit governed by the provisions of this Section if it finds that the proposed project will have any adverse impact on the use of the property ... **unless it is determined that the impact would be insignificant**” [emphasis added].

The parcels south of the Howard-Langton Mini Park are within an existing Residential Enclave District (RED) zone, where existing height limits of 40 feet would be maintained. The Draft Plan, however, proposes to expand this RED zone, encompassing additional lots that currently have a height limit of 50 feet. This would reduce the height limit of new RED parcels to the south of the park from 50 to 40 feet. Because it is possible that a structure of up to 40 feet could be constructed on these parcels, either under existing conditions or as encouraged by the Draft Plan, and because buildings up to 40 feet tall would not trigger Planning Code Section 295 review, there is a potential that future development south of the Howard-Langton Mini Park could result in new shading on the park. This would happen primarily during winter morning hours, when shadows would extend in a northwesterly direction over the park. As with buildings to the east, west, and south of the Howard-Langton Mini Park discussed above, because the potential exists for new shadow, it cannot be concluded that this impact would be less than significant, and therefore the impact is judged to be **significant and unavoidable**.

The Victoria Manolo Draves Park, outside of the Draft Plan Area, is located across from two-story buildings to the west, including the Bessie Carmichael Elementary School/Filipino Education Center. The Draft Plan would increase the height limits along the western side of Seventh Street, the closest Draft Plan Area parcels to the west, from 50 feet to a combination of 55 feet and 65 feet, and would not change the height limits south of Harrison Street, the closest Draft Plan Area parcels to the south. Any potential development up to 40 feet along Seventh Street (at the boundary of the Draft Plan Area), could not reach the Victoria Manolo Draves Park due to existing intervening buildings, which range from one to three stories in height. Shadow from a building taller than 40 feet would be subject to Section 295, and such development would be evaluated on a project-specific basis. However, because the potential exists for new shadow, it cannot be concluded that this impact would be less than significant, and therefore the impact is judged to be **significant and unavoidable**.

Effects on the Victoria Manolo Draves Park from new buildings along Harrison Street also would be less than significant. The south side of Harrison Street between Sixth and Seventh Streets is largely occupied by the elevated I-80 freeway and most of this frontage, in a P (Public) Use District, is unlikely to be developed. The eastern portion of this block face, nevertheless, could be developed. However, with both an existing and proposed height limit of 30 feet, shadow from a new building would barely, if at all, reach the southeastern corner of the Victoria Manolo Draves Park. In the event that it does occur, shading would happen only for a few minutes in the early morning hours and would not preclude the usability of this park. Therefore, shadow effects on the Victoria Manolo Draves Park from the Draft Plan would be less than significant.

The South of Market Recreation Center is surrounded by a mix of uses, ranging primarily between two and four stories in height, and is located approximately a block away in each direction from the Plan Area boundary. The Draft Plan proposes to increase height limits along Seventh Street from existing limits of 50 feet to proposed limits ranging between 55 and 65 feet. A multiplier of 6 can be used to determine the maximum extent of potential shadow.⁶ Based on this, any future development constructed along Seventh Street within the Draft Plan Area would not reach the South of Market Recreation Center because the

⁶ As a rough approximation, in order to obtain the maximum length of shadow that could be cast by a building, the height of the building is multiplied by 6, which roughly corresponds with the length of shadow at the first and last Section 295 minute in December, given the angle of the sun at those times.

recreation center is over 700 feet from Seventh Street and the maximum shadow from a 65-foot-tall building (which is the height limit proposed by the Draft Plan) would extend a maximum of 390 feet. As noted above, the Draft Plan does not propose any changes to the existing height limits along the south side of Harrison Street (between Fourth and Eighth Streets). Therefore, even if any of these parcels are developed to maximum 30-foot height limits in the future, any shading from these structures would be unlikely to reach the South of Market Recreation Center due to their distance from this recreational facility.

The U.N. and Civic Center Plazas are located about 1,000 feet from the Draft Plan Area's northern boundary. This is far enough away that any modest height increases proposed along the northern edge of the Draft Plan Area (from 50-X to between 40-X in REDs and 65-X on other lots) would not reach either of these public open spaces. Furthermore, as discussed above, the U.N. and Civic Center Plazas are already surrounded by mid- to high-rise buildings that cast shadows on them throughout the day and year.

The Rezoning of the Adjacent Parcels would not directly result in building height increases. However, the Adjacent Parcels could be developed with buildings that take advantage of existing height limits, which range from 65 to 160 feet. However, because these parcels are located relatively far away from Howard-Langton Mini Park, the Victoria Manalo Draves Park, and the South of Market Recreation Center, the Rezoning of Adjacent Parcels is not likely to have an adverse shadow impacts on these parks. Applying the multiplier of 6 to determine the maximum extent of shadow, potential shadow from the tallest buildings that could be developed on the Adjacent Parcels (near intersections of Mission and 10th Streets) would extend about 960 feet. However, these parks are located over 1,000 feet from parcels that have these height limits. The Adjacent Parcels located further east are within a 65-foot height district. Accordingly, potential maximum shadow from buildings that could be developed on these parcels is 390 feet, also not long enough to reach these parks.

The Rezoning of Adjacent Parcels could result in shadow impacts on other open spaces, such as the U.N. Plaza and Civic Center Plaza, if the Adjacent Parcels are developed with buildings that take advantage of existing height limits. However, shading from potentially taller new structures is unlikely to reach U.N. Plaza and Civic Center Plaza (only the former of which is under the jurisdiction of the SFRPD), because these spaces are separated from the Adjacent Parcels by several rows of relatively tall buildings south of Market Street (45 to 50 feet) and are surrounded by other mid- to high-rise buildings noted above north of Market Street. Furthermore, they are located far enough away that, during winter morning and evenings, when shadows are the longest, the distance and location of these open spaces relative to the Adjacent Parcels is such that no new shading would occur (maximum shadow would extend 960 feet, whereas these open spaces are located over 1,000 feet away). Based on the above, impacts on existing parks and open spaces attributable to the Rezoning of Adjacent Parcels are also considered less than significant.

Shadow Impacts on Future Parks and Open Spaces

The Draft Plan does not identify specific parks or recreational facilities that would be developed as part of the rezoning effort. However, as discussed in Section 4.J, Recreation, of this EIR, the Draft Plan does seek to address deficiencies in open space and recreational facility space through various goals and policies. One such goal is to provide at least one new public park or open space serving the Western SoMa community. The Draft Plan, however, does not specify location or size of such park.

In addition, the Draft Plan would require new private development to provide open space. For example, all new residential and commercial development on medium and large development sites would be required to provide a certain percentage of private open space accessible to the public. (The Draft Plan does not define “medium and large” sites.) Future open space in the area could consist of multiple street-level plazas with pedestrian amenities and streetfront open spaces accessible to workers, residents, and visitors (during designated hours).

As stated above, although the Draft Plan does not identify specific parks or recreational facilities that would be developed as part of the rezoning effort, it does seek to address open space deficiencies by establishing the goal of providing at least one new public park serving the Western SoMa community. As this park has not yet been constructed or a location identified, potential shadow impacts on it cannot be ascertained. If and when one or more properties within the Draft Plan Area become developed as public parks, they could be subject to Section 295 of the Planning Code, if under the jurisdiction of the SFRPD, and/or to Planning Department’s shadow impacts screening. Nevertheless, shadow from existing and future buildings could affect new park(s) that could, in the future, be developed in the Draft Plan Area. As a result, because the potential exists for new shadow to occur on future parks and open spaces, it cannot be concluded that this impact would be less than significant, and therefore the impact is judged to be **significant and unavoidable**.

The Adjacent Parcels abut the northern edge of the Project Area, and therefore buildings on those parcels would have minimal shadow effects on potential future parks in the Draft Plan Area, because the great majority of shadow from a given structure falls to the north of that structure. Furthermore, the blocks immediately north of the Adjacent Parcels are fully developed; thus, the possibility of a park being established on one of them is remote. Parks and open spaces further north would not be adversely affected by the Adjacent Parcels, since any additional shade that could result from new development on the Adjacent Parcels, even if buildings are constructed to take advantage of existing height limits, would not reach those properties, particularly since most of them already experience some shading from intervening development. In addition, the Adjacent Parcels are unlikely to offer a suitable park location, with the possible exception of a mini park. Nevertheless, it cannot be concluded that the implementation of the Rezoning of Adjacent Parcels would not create new shadow in a manner that could substantially affect potential future parks and open spaces. Therefore, in an abundance of caution, potential shadow impacts on future parks and open spaces attributable to the Rezoning of Adjacent Parcels are also judged to be **significant and unavoidable**.

Shadow Impacts on Sidewalks

Where the Draft Plan and Rezoning of Adjacent Parcels would include increases to the maximum building height 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 properties are developed to the proposed height limits. The effect would likely be most noticeable along larger street corridors in the Project Area, such as Mission, Folsom, and Harrison Streets, and where the proposed height limit increase would be greatest, such as along Harrison and Townsend Streets. However, even in these locations, the shadows that could be cast on sidewalks by buildings constructed up to the new or existing height limits would not be in excess of those that would be normal and expected in a highly urban area or in already-developed parts of South of Market area. Draft Plan

Policy 5.3.7, which would “Require that all development in the Western SoMa include all feasible measures to maximize sunshine on sidewalk and plazas,” would ensure that this impact is less than significant in the Draft Plan Area. Furthermore, subsequent projects in the Draft Plan Area and on the Adjacent Parcels would be required to comply with Planning Code Section 147, which states that proposed new buildings and additions to existing buildings over 50 feet in height must be shaped to minimize shadow on public plazas and other publicly accessible open spaces. Thus, based on the above, shadow impacts on sidewalks from development in the Draft Plan Area and on Adjacent Parcels would be less than significant.

Future development projects would be subject to review by the Planning Department and could be adjusted with respect to height and bulk to minimize shadow impacts. However, it cannot be concluded that this impact could be mitigated to a less-than-significant level because of the potential for new shadow, possibly in substantial amounts depending on subsequent individual proposed development projects that may be put forth, and because the feasibility of complete mitigation for potential new shadow impacts of currently unknown development proposals cannot be determined at this time. Therefore the project impact with respect to shadow is judged to be significant and unavoidable for both the Draft Plan and the Rezoning of Adjacent Parcels.

Mitigation: None feasible.

Impacts of the 350 Eighth Street Project (Project-Level Analysis)

Impact WS-4: The proposed 350 Eighth Street project would not create new shadow in a manner that would substantially affect outdoor recreation facilities or other public areas. (Less than Significant)

The proposed 350 Eighth Street project would involve buildings ranging in height from 53 to 65 feet. Thus, it would be subject to Section 295 of the Planning Code. As discussed above, the nearby public areas subject to Planning Code Section 295 are the Howard-Langton Mini Park, located approximately 1,000 feet from the 350 Eighth Street project site; Victoria Manalo Draves Park, located approximately 1,350 feet from the 350 Eighth Street project site; the South of Market Recreation Center, located approximately 1,700 feet from the 350 Eighth Street project site; and U.N. and Civic Center Plazas, both located over 2,000 feet from the 350 Eighth Street project site. To determine whether this project would conform to Section 295, a shadow fan analysis⁷ was prepared by the San Francisco Planning Department. This analysis determined that the shadow from the 350 Eighth Street project would not shade any of the above public areas subject to Planning Code Section 295. Therefore, no conflict with Section 295 of the Planning Code would occur as a result of the proposed 350 Eighth Street project.

⁷ San Francisco Planning Department, *350 8th Street Shadow Study (3756/003)*, December 15, 2010. This document is also available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2007.1035E.

Once this project is implemented, the new buildings would result in new shading on the 350 Eighth Street project site (including mid-block open space) as well as on surrounding properties. The areas that would be shaded by the 350 Eighth Street project would vary over the course of the year. During the winter months, shadows would be cast toward the residential, commercial, and vacant lots across Ringold Street as well as Ringold Street sidewalks during the morning hours, and toward the parcels across Eighth Street as well as Eighth Street sidewalks during the afternoon and evening hours. During the summer months, shadows would be cast south, onto the Harrison Street sidewalks and parcels on the south side of Harrison Street. However, no public recreational facilities or public areas other than sidewalks would be shaded by the 350 Eighth Street project. Furthermore, because the new shadows would move across the affected areas and would not shade any given area for longer than about an hour, the 350 Eighth Street project would not be expected to create new shadow in a manner that would substantially affect outdoor recreational facilities or other public areas. This impact would be less than significant.

In general, the net new shading that would result from the 350 Eighth Street project would be limited in scope and would not substantially increase the total amount of shading above levels that are common and generally accepted in urban areas. While residents may regard the increase in shadow during specific times of the day and year undesirable, the limited amount of increase in shading would not be considered a significant or adverse impact under CEQA.

Mitigation: None required.

Cumulative Wind and Shadow Impacts

Impact C-WS-1: The implementation of the Proposed Project, in combination with past, present and reasonably foreseeable future projects in the vicinity, would not contribute considerably to a significant cumulative impact on wind conditions. (Less than Significant)

Based on the above analysis, the Proposed Project's wind impacts are judged to be less than significant with implementation of Mitigation Measure M-WS-1, Screening-Level Wind Analysis and Wind Testing, discussed on page 4.I-6. Over time, development of potentially taller buildings could occur throughout the Project Area and the surrounding vicinity, including the implementation of the *Central Corridor Plan*, the 5M Project, Moscone East, and 801 Brannan Street/One Henry Adams Street Project. This has the potential to alter the wind environments in the general vicinity of the Proposed Project. As part of the environmental screening that would be undertaken for each of these projects, wind impacts would be assessed and mitigated, as necessary. However, based on the limited extent of potential impacts that would result from the implementation of the Draft Plan, Rezoning of Adjacent Parcels and the 350 Eighth Street project, it can be determined that the Proposed Project would not contribute considerably to cumulative impact related to wind conditions.

Mitigation: None required.

Impact C-WS-2: The implementation of the Draft Plan and/or Rezoning of Adjacent Parcels, in combination with past, present and reasonably foreseeable future projects in the vicinity, could contribute considerably to a significant cumulative impact on shadow conditions. (Significant and Unavoidable)

Based on the above analysis, the Proposed Project's contribution to cumulative shadow impacts is judged to be considerable, and therefore the cumulative shadow impact on existing and future parks would be significant and unavoidable. In particular, the Proposed Project would potentially contribute more shadow to the Howard-Langton Mini Park than other cumulative development because the mini park is within the Draft Plan Area: potential development on parcels adjacent to the mini park and within the Draft Plan Area would cast more shadow on the mini park than would development farther away and outside the Draft Plan Area.⁸ In addition, the Proposed Project would potentially contribute shadow to the Victoria Manalo Draves Park, if the parcels along Seventh Street were built to maximum height limits. Over time, development of potentially taller buildings could occur throughout the Project Area and the surrounding vicinity, including the implementation of the *Central Corridor Plan*, the 5M Project, Moscone East, and 801 Brannan Street/One Henry Adams Street Project. This has the potential to alter the shadow environment in the general vicinity of the Proposed Project.

Of the foregoing projects, only the 5M Project could have the potential to cast new shadow on the Howard-Langton Mini Park, U.N. Plaza, and/or Civic Center Plaza, while none of these four projects would likely shade Victoria Manalo Draves Park or the South of Market Recreation Center. Nevertheless, any or all of these projects could add new shadow to potential future parks and open spaces, which also might be shaded by new development projects in the Plan Area and/or on the Adjacent Parcels. As part of the environmental screening that would be undertaken for each of these projects, shadow impacts would be assessed and mitigated, as necessary. However, based on the limited extent of potential impacts that would result from the implementation of the Draft Plan, Rezoning of Adjacent Parcels and the 350 Eighth Street project, it cannot be determined with certainty that the Proposed Project would not contribute considerably to cumulative impact related to shadow on existing and new parks and open spaces. As with development in the Draft Plan Area and on the Adjacent Parcels described in Impact WS-3, future cumulative projects would be subject to review by the Planning Department and could be adjusted with respect to height and bulk to minimize shadow impacts. However, it cannot be concluded that shadow effects of these projects could be mitigated to a less-than-significant level and, because shadow impacts could also result from the Draft Plan and the Rezoning of Adjacent Parcels, for purposes of a conservative analysis, cumulative shadow impacts on future parks and open spaces attributable to the Rezoning of Adjacent Parcels are judged to be **significant and unavoidable**.

Mitigation: None available.

⁸ The Howard-Langton Mini Park will be newly shaded by the Trinity Plaza (1167-1177 Market Street) project currently under construction. The EIR for that project (Case No. 2002.1179E; Final EIR certified August 3, 2006). The Planning Commission determined that this shadow, occurring late in the day in spring and summer when the mini park is currently nearly fully shaded, would not be adverse within the meaning of Section 295.

Impact C-WS-3: The implementation of the 350 Eighth Street project, 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)

As discussed under Impact WS-4, a shadow fan analysis prepared for the 350 Eighth Street project determined that the 350 Eighth Street project site is sufficiently far enough from parks and open spaces subject to Planning Code Section 295 that it would not shade them. Furthermore, no other public recreational facilities or public areas other than sidewalks would be shaded by the 350 Eighth Street project. Thus, the 350 Eighth Street project would not be expected to create new shadow in a manner that would substantially affect outdoor recreational facilities or other public areas.

As far as potential shadow impacts on future parks and open spaces that could be developed in the vicinity of the 350 Eighth Street project site, these, too, would be less than significant. Given that the proposed buildings on the 350 Eighth Street project site would be 65 feet in height or less, the shadows that would result from the implementation of the 350 Eighth Street project would span less than a block in each direction. The likelihood that an open space or a park would be developed within such a limited area is small and speculative at this point. Therefore, the implementation of the 350 Eighth Street project would not contribute considerably to any cumulative impact with respect to shading and this impact would be less than significant.

Mitigation: None required.

4.J. Recreation

This section describes existing recreational facilities in the Project Area. The impact discussion addresses the potential for the Proposed Project to physically degrade existing recreational facilities or require construction or expansion of recreational facilities. Impacts are discussed for the Draft Plan, the Rezoning of Adjacent Parcels, and the 350 Eighth Street project.

Environmental Setting

The San Francisco Recreation and Park Department (SFRPD) maintains more than 200 parks, playgrounds, and open spaces throughout the city. The city's park system also includes 15 recreation centers, nine swimming pools, and five golf courses, as well as tennis courts, ball diamonds, athletic fields and basketball courts. The SFRPD manages the Marina Yacht Harbor, Candlestick Park, the San Francisco Zoo, and the Lake Merced complex. In total, the SFRPD currently owns and manages roughly 3,400 acres of parkland and open space. Together with other City properties and state and federal open space properties within the city, about 5,250 acres of recreational resources (consisting of a variety of parks, walkways, landscaped areas, recreational facilities, playing fields and unmaintained open areas) serve San Francisco.¹

Within San Francisco, publicly accessible open spaces and recreational facilities are categorized according to their size and particular amenities as serving the city, district, neighborhood, or subneighborhood (a smaller area within an established neighborhood). Several larger open space areas, including Golden Gate Park (1,017 acres), the Lake Merced complex (700 acres; including the 368-acre lake) and John McLaren Park (317 acres) comprise about one half of the total City-owned acreage in recreational use. Unlike neighborhood facilities, these larger facilities provide programs, activities and recreational opportunities that serve the city as a whole. These spaces, in addition to smaller areas with unique attributes, such as water features or hilltop vista points, function as city-serving open spaces because they attract residents from the entire city.

In addition to the larger open spaces, SFRPD land comprises more than 100 parks and recreational facilities (both outdoor and indoor), which function mainly for neighborhood use. These smaller facilities are primarily used by residents in the immediate surrounding area and are categorized by size and intended service area. District-serving parks are generally larger than 10 acres and have a service area consisting of a three-eighths-mile radius around the park, while neighborhood-serving parks are generally one to 10 acres and have a service area of one-quarter mile. Subneighborhood-serving open spaces, often referred to as mini parks, are too small to accommodate athletic facilities. These parks tend to include seating areas, small landscaped spaces, tot lots targeting pre-school-age children, and playgrounds with amenities generally targeted to elementary-school-age children. The service area for subneighborhood parks is one-eighth of a mile.

¹ San Francisco Planning Department, *Draft Update of the Recreation and Open Space Element*, May 2009. Available online at: http://openspace.sfplanning.org/docs/Recreation_and_Open_Space_Element.pdf, accessed on April 19, 2012.

Western SoMa Community Plan Area and Adjacent Parcels

There are four existing SFRPD-managed facilities within or in the vicinity of the Project Area:

- Howard-Langton Mini Park (Howard and Langton Streets near Seventh Street): A community garden with benches and tables (0.23 acre), located within Project Area;
- Victoria Manalo Draves Park (between Folsom and Howard Streets/Columbia Square and Sherman Streets): A neighborhood park of approximately two acres, featuring a baseball diamond, basketball court, children's play area, community garden, picnic area, and playfield located outside and adjacent to the Project Area; and
- South of Market Recreation Center (207 Sixth Street and Folsom): A one-acre neighborhood park/facility featuring basketball courts, a playground with a sand pit, art sculptures, a lawn area, an indoor gymnasium, an activity room, and weight room, located one block outside of the Project Area.
- Civic Center Plaza (at the intersection of Grove and Larkin Streets): An approximately 5.9-acre public open space containing lawn areas and two tot lots, located adjacent to the City Hall, one block north of the Project Area.

In addition, the U.N. Plaza, an approximately 2.6-acre pedestrian mall extending from Market Street to Hyde Street in the city's Civic Center area is located north of the Project Area. It is not managed by the SFRPD. The U.N. Plaza contains landscaped areas and limited seating and is used primarily for passive recreation, in addition to holding events such as seasonal farmer's markets and occasional art festivals.

The ratio of open space and parks to population in the Project Area is much less than in the city as a whole. The Project Area has only 0.23 acre of public parks serving about 11,000 residents. The Project Area is identified on the SFRPD's Neighborhood Recreation and Open Space Improvement Priority Plan Maps as being within a "High Need Area," necessitating the need for acquisition of park land of at least one-quarter acre. (See further discussion of these maps under "Regulatory Setting," below.)

Although the Western SoMa community has access to large spaces for recreation outside the Project Area, such as the Civic Center Plaza, Mission Creek Park, and Yerba Buena Gardens (all of which are about one-quarter mile from the Draft Plan Area), it lacks street connectors that lead to those large spaces, or to the small neighborhood parks serving the residents of the Project Area.

350 Eighth Street Project Site

The 350 Eighth Street project site is currently used by the Golden Gate Bridge, Highway, and Transportation District as a bus parking and inspection yard. It is occupied by a large paved lot and three small, single-story administration and maintenance structures. No parks or recreation facilities are located at the site. The nearest parks and recreation facilities to the 350 Eighth Street project site are the Howard-Langton Mini Park and Victoria Manalo Draves Park, both of which are approximately one-quarter mile from the 350 Eighth Street project site. In addition, the SoMa Recreation Center is just over one-quarter mile away.

Regulatory Setting

San Francisco Planning Code Open Space Requirements

The Planning Code requires usable open space in conjunction with development projects. As a part of the permitting process, project sponsors are required to incorporate certain amounts of open space, depending on a project's use and size as well as the use district in which the site is located, to serve future project residents and/or employees.

Planning Code Section 135 indicates the square footage of open space required for new residential units, ranging from 36 to 300 square feet per unit. The requirement is generally higher in single-use residential districts than in mixed-use residential districts. Commonly accessible open space (designed for use jointly by two or more units) is permitted at a ratio typically 1.33 square feet of the required amount of private open space.

Open Space Guidelines

As applied by the SFRPD, the San Francisco Sustainability Plan defines the need for open space capacity at 5.5 acres per 1,000 residents. The San Francisco Department of Public Health, in its Healthy Development Measurement Tool (HDMT) Development Checklist, includes a benchmark for publicly accessible open space as 10 acres per 1,000 residents that is based on a quantitative standard formerly used by the National Recreation and Park Association (NRPA) guidelines.² For district-, neighborhood- and subneighborhood-serving parks or provision of recreational facilities, the City has not established a level of service standard based on population density.

The City, state, and federal property permanently dedicated to open space uses in San Francisco totals approximately 5,250 acres, which is about 5 acres per 1,000 residents. This is about half the guideline recommended by the NRPA. However, the HDMT recognizes that other indicators, such as accessibility, safety, park maintenance, and usability, are also appropriate measures for appraising open space. The *San Francisco General Plan Recreation and Open Space Element* also recognizes that San Francisco is likely to provide less open space acreage than many communities, given land constraints, high population density, and existing urban development.

Open Space Needs Evaluation

The San Francisco Planning Department, in conjunction with the SFRPD, the Mayor's Office, and the Neighborhood Parks Council, is currently evaluating the open space needs of the entire city over the next 100 years. As part of the Open Space 2100 project, a Draft Open Space Framework is being developed that includes several components: the *Draft Citywide Vision for Open Space*,³ which provides a broad outline of the City's ideal open space network over the next 100 years; the *Open Space Framework*, which expands the

² San Francisco Department of Public Health, Healthy Development Measurement Tool Development Checklist, Version 3.02, January, 2010. Available online at: http://www.thehdmtool.org/development_checklist.php, accessed on April 19, 2012. Beginning in 1981, the NRPA advocated a standard of 10 acres per resident. In 1996, the NRPA published new guidelines that advocate less reliance on a quantitative standard and a greater focus on facilities identified as important by the local community.

³ San Francisco Planning Department, *Draft Citywide Vision for Open Space*, May 2009.

traditional definition of open space and introduces the concept of a high-performing open space network; and the *Draft Update of the Recreation and Open Space Element (ROSE)*⁴ of the *San Francisco General Plan*.

These documents were released for public review in May 2009 and comments were accepted through October 2009. Community focus groups have been conducted since then to discuss specific comment areas for inclusion into a final draft for adoption. An Action Plan will also be drafted consisting of a set of five- and ten-year programs that describe how the City will implement the vision for open space as well as the objectives and policies of the ROSE.

Open Space Fund and Recreation and Park Acquisition Policy

In 2000, San Francisco voters approved Proposition C, extending the Open Space Fund that is used to finance acquisitions and capital improvements for SFRPD. The legislation created an annual set-aside of two and one-half cents for each one hundred dollars assessed valuation from the property tax levy. The Open Space Fund is funded through Fiscal Year 2030-2031. The legislation stipulates that at least five percent of the revenue raised through the set-aside be allocated to new land acquisition.

In 2006, the SFRPD, at the request of the Recreation and Park Commission, published the *Recreation and Park Acquisition Policy* to provide clear guidelines for the expenditure of acquisition funds under the Recreation and Park Commission's jurisdiction. The first objective stated in this policy is to align the SFRPD acquisition priorities with Map 9 of the *San Francisco General Plan Recreation and Open Space Element*, which identifies high need areas based on population, density, age, and income.⁵ However, the SFRPD ultimately used a separate map modeled after Map 9 and included demographic statistics (high residential, senior, and children densities per net acre, as well as high and low household incomes relative to the city median household income) from Census 2000 data to determine high and highest priority need areas. In addition, using neighborhood service areas, the SFRPD conducted a gap analysis for the policy report. Ultimately, the SFRPD produced Neighborhood Recreation and Open Space Improvement Priority Plan Maps showing the areas of highest need according to demographic statistics and the areas that are also underserved in terms of existing recreational resources.

Other Applicable Plans and Policies

See Chapter 3, Plans and Policies, for information on other plans and policies that address recreational facilities and are applicable to the Project Area.

⁴ San Francisco Planning Department, *Revised Draft Update of the Recreation and Open Space Element: An Element of the General Plan of the City and County of San Francisco*, June 2011. Available online at: http://openspace.sfplanning.org/docs/Recreation_and_Open_Space_Element_APRIL_2011.pdf, accessed on April 19, 2012.

⁵ San Francisco Recreation and Parks Department, *Recreation and Park Acquisition Policy*, May 2006.

Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR, the Proposed Project would result in a significant impact with respect to recreational facilities if it would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that physical deterioration of the facilities would occur or be accelerated;
- Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment; or
- Physically degrade existing recreational resources.

It is noted that transportation and street network improvements that would be implemented as part of the Draft Plan would not have any impacts on recreation, as they would not result in any of the impacts listed under “Significance Criteria,” above. For this reason, these impacts are not discussed any further in this section.

Approach to Analysis

This analysis focuses on how the implementation of the Proposed Project would affect the demand for parks and recreational facilities in the Project Area. As noted earlier, the City and County of San Francisco has not established level of service standards for parks in relationship to population density at the district-, neighborhood, and subneighborhood levels. Analysis of recreation effects therefore considers such factors as park accessibility, location, maintenance, capacity, and usability.

Impacts of the Western SoMa Community Plan and Rezoning of Adjacent Parcels (Program-Level Analysis)

Impact RE-1: Neither the implementation of the Draft Plan nor the Rezoning of the Adjacent Parcels would increase the use of or physically degrade existing recreational facilities such that physical deterioration of those facilities would occur or be accelerated, or require construction or expansion of recreational facilities in a way that would adversely affect the environment. (Less than Significant)

The proposed Draft Plan, a regulatory program, would not directly physically degrade any existing recreational resources within the Draft Plan Area. Although Draft Plan Policy 7.1.1 in the Open Space chapter identifies the need to “provide at least one new public park or open space serving Western SoMa,” no specific new parks or recreational facilities, or location for such facilities, are proposed by the Draft Plan; therefore, no adverse physical impacts associated with the construction or expansion of recreational facilities can be identified at this time. Subsequent development proposals in the Draft Plan Area would be subject to project-level environmental review. In general, relatively minor physical changes such as landscaping and creation of pocket parks typically would be exempt from CEQA. The potential for secondary effects related to physical deterioration resulting from population increases and/or uses attributable to the Draft Plan is addressed in the following discussion.

An unmet demand for parks and recreational resources, in itself, would not be considered a significant impact on the environment. Based on the CEQA significance criteria, the Proposed Project would have an adverse environmental impact if it were to cause the deterioration of existing recreational resources through increased use or require the construction or expansion of recreational facilities that may have an adverse effect on the environment. It can be anticipated that increases in the number of permanent residents without development of additional recreational resources could result in proportionately greater use of parks and recreational facilities in the Draft Plan Area, which may result in physical deterioration. However, population increases are only one factor in determining whether parks and recreational facilities would deteriorate through increased use. Other variables include park design, age, infrastructure, how the park is being used, and whether adequate levels of upkeep are maintained.

Although the Draft Plan does not identify specific parks or recreational facilities that would be developed as part of the planning effort, it does seek to address the potential future open space and recreational facility space needs through its open space policies. As noted above, Draft Plan Policy 7.1.1 identifies the need to “provide at least one new public park or open space serving Western SoMa.” While no specific location is discussed, the minimum size for a potential park is suggested as at least one-quarter acre. Policies also address the need for a funding mechanism in order to acquire potential park areas, including the creation of an open space fund to regulate location alternatives for new open space, whether proposed by public or private developers. Such a system could also address maintenance requirements of existing facilities in the Draft Plan Area. The identification, acquisition, and programming of new parks would be coordinated with the Mayor’s Open Space Task Force in conjunction with the Open Space San Francisco 2100 project (described below).

New development would also be required to provide public and private open space to meet the demand of the increased population in the Draft Plan Area. Projects on sites greater than one acre would be required, as part of the *Planning Code* requirement, to provide publicly accessible community spaces or open spaces. The Draft Plan would require new residential, residential mixed-use, and commercial developments to provide on-site private open space and/or pay development impact fees in order to provide public open space within the neighborhood, as currently required by the City. The Draft Plan proposes to amend the *Planning Code* in order to require that, when a Conditional Use (CU) authorization is considered for the allowable additional height, all new residential and commercial development on large and very large development sites must provide open space accessible to the public. For major new residential and office development, Draft Plan policies encourage the establishment and maintenance of rooftop gardens on at least 25 percent of usable roof space for use as both public and private open space. New commercial and industrial development would also be encouraged to contribute to public open space through incorporation of street-level plazas with benches, street lights, and streetfront open space accessible to workers, residents, and visitors during the daytime hours, at minimum.

Recognizing the constraints inherent in the dense, urban nature of the Western SoMa neighborhood, the Draft Plan encourages creation of non-traditional open space resources in addition to land acquisition and development contributions. The preservation of the pattern of at-grade rear yards and the creation of new yards as part of future development would serve to increase the overall amount of open space in the Draft Plan Area.

The Draft Plan calls for continued coordination with the Department of Public Works Great Streets and South of Market Alley Improvements Programs regarding the encouragement of a safe and accessible public realm use through development of “living streets” and “green connector streets.” The Draft Plan would strengthen the pedestrian and bicycle network by extending alleyways to adjacent streets wherever possible and by providing new publicly accessible mid-block rights-of-way. Smaller open spaces could be located in alleys and in pedestrian-oriented areas as integrated design elements of new developments. These areas could include specific design features such as widened sidewalks or medians, curb bulb-outs, pedestrian-scale lighting, benches, and street trees, along with traffic calming methods to improve the attractiveness of these spaces. Other policies describe the potential transformation of unused freeway and rail rights-of-way into landscaped routes for pedestrians and bicyclists; adherence to the *San Francisco Bicycle Plan*, and amendment of the plan if necessary; incorporation of public art in new open spaces; and use of existing facilities such as school playgrounds during non-school hours.

Specific goals and objectives from the *Draft Citywide Vision for Open Space* and the *Draft Update of the Recreation and Open Space Element (ROSE)* applicable to *Western SoMa Community Plan Area* include the development of new open spaces in high need areas; promotion of higher-quality experiences in existing open spaces; use of residual spaces in proximity to freeways as a system of linear green buffers; “green connector streets” designed to calm and/or divert vehicular traffic and emphasize pedestrian and bicycle travel with connections to larger open spaces; and “living streets” in which sidewalks are expanded on streets with excess right-of-way to accommodate open spaces or pocket parks.

These policies noted above, in combination with the City’s ongoing analysis of open space needs via the Draft Open Space Framework process, would establish a variety of tools and mechanisms to achieve parks and open space objectives described in the Draft Plan. Amendments to the Planning Code would further ensure that residents, workers, and visitors to Western SoMa would be adequately served by parks and open spaces. The impact of the Draft Plan on recreational resources would, therefore, be considered less than significant.

The Rezoning of Adjacent Parcels does not include specific goals or policies to address potential shortfalls in recreational opportunities on the Adjacent Parcels. However, the amount of development that could be anticipated from the Rezoning of Adjacent Parcels would not be expected to generate sufficient population to cause overuse or degradation of existing recreational facilities. Furthermore, if the Draft Plan is adopted, residents on the Adjacent Parcels would benefit from future establishment of new recreational facilities nearby. Thus, the impact of the Rezoning of Adjacent Parcels on recreational resources would also be considered less than significant.

Based on the foregoing, the implementation of the Draft Plan and Rezoning of the Adjacent Parcels would result in less-than-significant impacts on recreational facilities and resources.

Mitigation: None required.

Impacts of the 350 Eighth Street Project (Project-Level Analysis)

Impact RE-2: The proposed 350 Eighth Street project would not increase the use of or physically degrade existing recreational facilities such that physical deterioration of those facilities would occur or be accelerated, nor require construction or expansion of recreational facilities in a way that would adversely affect the environment. (Less than Significant)

The 350 Eighth Street project site would be developed with approximately 444 dwelling units, approximately 33,650 square feet of commercial space, approximately 8,150 square feet of light industrial/arts-related space, and approximately 1,350 square feet of community space. The project would also include about 26,786 square feet of publicly accessible open space (including a small pocket park near the intersection of Eighth and Ringold Streets), in addition to approximately 13,154 square feet of private balconies, decks, and an interior grade court that would be accessible to 350 Eighth Street project site's residents and workers. The 350 Eighth Street project would comply with *Planning Code* requirements for useable open space. Given the accessibility of the pocket park (and the nearby SoMa Recreation Center) in combination with other publicly accessible open space that could be created if the Draft Plan is adopted, as well as the 350 Eighth Street project's proposed open space and community center components, recreational impacts of the 350 Eighth Street project would be less than significant.

Mitigation: None required.

Cumulative Impacts

Impact C-RE: The implementation of the Proposed Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute considerably to cumulative impact on recreation. (Less than Significant)

The Project Area and the surrounding neighborhoods (particularly East SoMa) serve as the geographical context for the cumulative impact analysis for recreation. Based on the analysis provided above, recreation impacts of the Proposed Project, including the Draft Plan, Rezoning of Adjacent Parcels, and 350 Eighth Street project site, would be considered less than significant.

Growth in the Project Area and within the surrounding neighborhoods, including the anticipated *Central Corridor Plan*, the 5M Project, Moscone East, and 801 Brannan Street/One Henry Adams Street Project, would result in an increased demand for parks and recreation facilities due to the anticipated population growth. As discussed above, the City and County of San Francisco has not established level of service standards for parks based on population density. Policies and programs currently being implemented by the City, including the *Draft Citywide Vision for Open Space*, the *Draft Update of the Recreation and Open Space Element (ROSE)*, and park acquisitions funded through Proposition C, would serve the growing population in the Project Area and adjacent neighborhoods. In addition, passage of the 2008 Clean and Safe

Neighborhood Parks Bond⁶ is funding renovations of many existing parks, park trail reconstructions, playfields renovations and replacements, as well as upgrades of the urban forest. Therefore, implementation of the Draft Plan, Rezoning of Adjacent Parcels, and the 350 Eighth Street project would not contribute to any cumulative adverse impacts on recreation.

Mitigation: None required.

⁶ San Francisco Recreation and Parks Department, 2008 Clean and Safe Neighborhood Parks Bond Report, October 12, 2007. Available online at: http://sf-recpark.org/ftp/uploadedfiles/wcm_recpark/GOBond/BondReport101207.pdf, accessed on April 10, 2012.

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4.K. Public Services, Utilities, and Service Systems

This section describes existing public services, utilities, and service systems in the Project Area, including police, fire protection, schools, water, wastewater, and solid waste services. The impact discussion addresses the potential for the Proposed Project to create the need for new or expanded services or utilities or conflict with applicable service requirements. Impacts are discussed for the Draft Plan, the Rezoning of Adjacent Parcels, and the 350 Eighth Street project.

Environmental Setting

Police

The San Francisco Police Department (SFPD), headquartered at 850 Bryant Street in the Hall of Justice (within the Draft Plan Area), provides police protection services for the City and County of San Francisco. The SFPD consists of four bureaus and ten districts located throughout the city. Authorized staffing at each district station includes one captain, four lieutenants, and 16 sergeants, with between about 65 and 125 patrol officers per station.

The Southern Station (also located at 850 Bryant Street) has jurisdiction over the Project Area, which consists of the *Western SoMa Community Plan Area*, Adjacent Parcels, and 350 Eighth Street project site. The station serves a population of approximately 26,000 and covers about 6.5 percent of the city. The Southern Station currently has 104 sworn officers, which is the greatest number of the 10 district stations. The Project Area covers two district beats. The Southern Station's current staffing ratio is approximately one officer for every 254 residents.¹

In 2007, the Southern Station received 8,050 Priority A calls (life-threatening emergency), 18,297 Priority B calls (potential for harm to life and/or property), and 20,416 Priority C calls (crime committed with no threat to life or property).² The Southern Station received more calls for service and reported more crimes than any other district station. The Southern District accounts for approximately 19 percent of the total crimes that occur citywide.

Fire Protection

The San Francisco Fire Department (SFFD), headquartered at 698 Second Street, provides fire suppression and emergency medical services to the City and County of San Francisco, including the Project Area. The SFFD consists of three divisions, which are subdivided into 10 battalions and 42 active stations located throughout the city. Station 8 serves the Project Area from its location at 36 Bluxome Street at Fourth Street. Station 8 is equipped with one fire suppression engine and one ladder truck. Other stations nearby include Station 1, at Third and Howard Streets (one engine, one truck, and reserve company), and Station 36, at Oak and Franklin Streets (one engine and the SFFD hazardous materials unit).

¹ Captain Greg McEachern, San Francisco Police Department, Response to Western SoMa Community Plan EIR Police Services Questionnaire, September 20, 2010.

² San Francisco Police Department, *2007 Annual Report*, 2008. Available online at: <http://sf-police.org/Modules/ShowDocument.aspx?documentid=14893>, accessed on April 19, 2012.

The SFFD provides emergency medical services (EMS) in the city, including basic life support (BLS) and advanced life support (ALS) ambulance services. In addition, several privately operated ambulance companies are authorized to provide BLS and ALS services. The SFFD currently has about 18 ambulances and firefighter/paramedic and firefighter/emergency medical technicians (EMT) on staff.

Schools

The San Francisco Unified School District (SFUSD) operates San Francisco's public schools. During the 2008-2009 academic year, the SFUSD managed 112 schools (72 elementary schools, 15 middle schools, 21 high schools, two alternative schools, and two continuation schools), with a total enrollment of 55,183.³

Existing and Projected Enrollment

In general, student enrollment within the SFUSD has steadily decreased during the past decade from 61,042 during the 1998-1999 academic year.⁴ However, the SFUSD anticipates that elementary school enrollment will grow due to the large birth cohorts earlier in the decade. Middle school enrollment is anticipated to rise as well, but remain below current enrollment in 2013. High school enrollment will experience a continuous decline through 2013 due to the declining births of the 1990s.⁵

Schools Serving Project Area

Schools closest to the Project Area include Bessie Carmichael /Filipino Education Center School (K-8) located at 375 Seventh Street (elementary school) and 824 Harrison Street (middle school), and Mission High School at 3750 18th Street. Five Keys Charter School is also located within the Project Area at 70 Oak Grove Street. Enrollment at Bessie Carmichael averaged fewer than 400 students during the 1990s through the 2004-2005 academic year, when the school served Kindergarten through 5th grades. Grades 6 through 8 were subsequently added to the school during the period from 2005 through 2008. Approximately 579 and 583 students were enrolled during the 2007-2008 and 2008-2009 academic years, respectively. Enrollment at Mission High School has generally been averaging 850 to 900 students during the past decade. Five Keys Charter School had approximately 322 students enrolled in 2008-2009.

In March 2009, the SFUSD Board of Education approved new guidelines for attendance boundaries around schools. Under this new policy, Bessie Carmichael will become a "city-wide" school with no attendance area beginning with the 2011-2012 academic year.⁶

School Impact Fees

The Leroy F. Greene School Facilities Act of 1998, or Senate Bill 50 (SB 50), restricts the ability of local agencies such as the City and County of San Francisco to deny land use approvals on the basis that public school facilities are inadequate. SB 50 establishes the base amount of allowable developer fees at \$2.96 per

³ Education Data Partnership, Fiscal, Demographics, and Performance Data on California's K-12 Schools, www.ed-data.k12.ca.us, accessed August 4, 2010.

⁴ California Department of Education, Educational Demographics Office. Available online at: <http://dq.cde.ca.gov/dataquest>, accessed on August 4, 2010.

⁵ San Francisco Unified School District (SFUSD), *Capital Plan, FY 2010-2019*, September 2009. Available online at: Francisco Unified School District (SFUSD), *Capital Plan, accessed April 19, 2012*.

⁶ SFUSD, *Student Assignment Redesign: Report on City-Wide Schools*, July 2010.

square foot of residential construction and \$0.47 per square foot of commercial construction.⁷ These fees are intended to address local school facility needs resulting from new development. Public school districts can, however, impose higher fees provided they meet the conditions outlined in the act. Private schools are not eligible for fees collected pursuant to SB 50.

Water

The San Francisco Water Enterprise, a division of the San Francisco Public Utilities Commission (SFPUC), provides water and wastewater services to approximately 2.5 million people in San Francisco, Santa Clara, Alameda, and San Mateo Counties. Eighty-five percent of the water delivered to SFPUC customers comes from Sierra Nevada snowmelt stored in the Hetch Hetchy Reservoir on the Tuolumne River in Yosemite National Park. The remaining 15 percent comes from runoff in the Alameda and Peninsula watersheds captured in reservoirs located in San Mateo and Alameda Counties. The entire regional system delivers approximately 265 million gallons of water per day (mgd) to its customers.⁸

Water Distribution System

The local water system provides distribution and storage for water and fire protection within the city. This system includes 10 reservoirs, 8 water tanks, 17 pump stations, and approximately 1,250 miles of transmission lines and water mains within the city. The SFPUC manages distribution of potable water through two systems: a low-pressure water main system that provides water for domestic and commercial uses at about 1,000 gallons per minutes (gpm), and a high-pressure system that provides a dedicated water source for fire suppression at about 10,000 gpm.

Water Supply and Demand

In 2010, available water supply was 83.2 mgd. Retail water use was 77.7 mgd in 2010, comprising 71 mgd of in-city retail use, 4.1 mgd of suburban retail use, and 2.2 mgd of groundwater irrigation use.

Total retail demand is expected to increase to 80.7 mgd in 2015 and 80.9 mgd in 2035, due primarily to expected growth in business and industry. The SFPUC plans to augment local supplies by extracting up to 4 mgd of groundwater from new wells in the city's Westside Basin, as well as 1.5 mgd of recycled water from new recycled water projects. Total retail supply is expected to increase to 90.0 mgd by 2035.⁹

The SFPUC forecasted future water demand using the Association of Bay Area Governments (ABAG) reports *Projections 2002*, *Projections 2009*, and *Draft Projections 2011*. These projections incorporate existing land use designations and reasonably foreseeable future projects within the City and County of San Francisco and other areas served by the SFPUC. According to the SFPUC's Urban Water

⁷ These are current base fees adopted by State Allocation Board (SAB), which is the policy-level body for the programs administered by the Office of Public School Construction within the State Department of General Services. The SAB is authorized by Government Code Section 65995(b)(3) to increase the base fee every two years. In order to levy the fees, school districts must prepare a "nexus" analysis demonstrating why the fees are required and how they will be used. State Allocation Board Meeting, *Report of the Executive Officer, Index Adjustment on the Assessment for Development*, January 27, 2010.

⁸ SFPUC, *2010 Urban Water Management Plan for City and County of San Francisco*, June 2011 Available online at: <http://www.sfwater.org/modules/showdocument.aspx?documentid=1055>. Reviewed October 20, 2011.

⁹ *Ibid.*

Management Plan (UWMP), the SFPUC can still meet the current and future demand in years of average or above average precipitation. However, during a multiple-dry-year event, it is possible that the SFPUC would not be able to meet 100 percent of demand and would therefore have to impose reductions on its deliveries. Under the Water Shortage Allocation Plan (WSAP), customers would experience no reduction in regional water system deliveries within a 10-percent shortage. During a 20-percent system-wide shortage, customers would experience a 1.9-percent reduction in deliveries. Retail allocations would be reduced to 79.5 mgd (98.1 percent of normal year supply), and wholesale allocations would be reduced to 132.5 mgd (72 percent of normal year supply).¹⁰

The ability to meet the demand of the customers is in large part due to the development of 10 mgd of local supplies in the city through implementation of the Water Supply Improvement Program (WSIP). These additional sources of groundwater, recycled water, and conservation supplies are essential to providing the city with adequate supply in dry year periods, as well as improving supply reliability during years with normal precipitation. With the WSAP in place, and the addition of local WSIP supplies, the SFPUC concluded that it has sufficient water available to serve existing customers and planned future uses.

Wastewater

San Francisco's wastewater collection, treatment, and disposal system consists of a combined sewer system (which collects both sewer and stormwater), three wastewater treatment plants, and effluent outfalls to San Francisco Bay and the Pacific Ocean. The collection and conveyance system consists of approximately 900 miles of underground pipes throughout the city. The City discharges approximately 84 mgd of treated wastewater during dry weather. Two of the City's treatment plants, the Southeast Water Pollution Control Plant (Southeast Plant) and Oceanside Water Pollution Control Plant, operate year-round, while the third plant, the North Point Wet Weather Facility, operates only during rainy periods. The Southeast Plant, which serves the Project Area, treats all eastside sewage flows during dry weather. Treated wastewater is discharged to San Francisco Bay through a deep water outfall at Pier 80, north of Islais Creek.

System Capacity and Discharges

When wet-weather flows exceed the capacity of the overall system, the excess is discharged from 36 permitted combined sewer discharge (CSD) structures located along the waterfront. All discharges, whether through the dry-weather outfall or the CSD structures, are operated in compliance with permits issued by the Regional Water Quality Control Board and with the United States Environmental Protection Agency (U.S. EPA) Combined Sewer Overflow Control Policy.

System Deficiencies in Project Area

The SFPUC has identified a large portion of the Western SoMa neighborhood where heavy rainfall can create a substantial risk of flooding. This can result in interior flooding when wastewater (primarily storm runoff) flows back through the building's sewer pipes during heavy rains. As a result, the SFPUC has begun requiring review of building permits in this area so that improvements can be made on a

¹⁰ *Ibid.*

project-by-project basis to ensure that properties are constructed to minimize the risk of flooding. For properties prone to flooding because of the grade differential between the building and the sewer main, a building permit application could trigger a requirement to install a valve to prevent reverse sewage flow, and to ensure that the building's internal sewer piping can store building-generated wastewater until storm flows recede and building flows can enter the sewer. In some instances where building floor levels are particularly low relative to the sewer main, pumps could be required to force building wastewater flow into the main. This DPW-SFPUC review process will ensure that any localized flooding in Project Area is gradually eliminated as a concern as older buildings are renovated and new structures are built.

Wastewater Master Planning Process and Sewer System Improvement Plan

In 2005, the SFPUC initiated a wastewater master planning process to develop a long-term strategies for managing the city's wastewater and stormwater; to address system deficiencies, community impacts, public interests, and future needs; and to maximize system reliability and flexibility. The two principal problems related to aging infrastructure are structural integrity and seismic reliability. The principal overall collection system deficiencies are related to the foreseeable impacts of climate change. These impacts include potential flooding and bay water intrusion into the collection system through the CSD structures.

As part of SFPUC's master planning process, a Sewer System Improvement Program (SSIP) is being developed to identify capital improvement projects to address the city's wastewater needs for the next 30 years.¹¹ The SSIP is a collection of capital improvements that will address system-wide challenges such as aging infrastructure; seismic deficiencies; lack of redundancy; and limited operational flexibility. Because several projects have already been identified during development of the program, the SFPUC allocated \$150 million for a Capital Improvement Program (CIP) to address immediate wastewater needs. Over the past four years, the Wastewater CIP has improved the reliability and efficiency of the wastewater system through programs designed to maximize collection and conveyance of sewage and stormwater; maximize control of odor emissions; and improve the reliability of critical treatment facilities.

Solid Waste

Landfill Capacity

Solid waste generated in San Francisco is transported to, and disposed of at, the Altamont Landfill in Alameda County. The Altamont Landfill has a permitted peak maximum daily disposal of 11,150 tons per day and accepted 1.29 million tons in 2007. The landfill has an estimated remaining capacity of approximately 46 million cubic yards or 74 percent of its permitted capacity. The estimated closure date of the landfill is 2025.¹² However, the City's remaining contracted capacity at the landfill is anticipated to be reached as soon as 2015.

¹¹ SFPUC, *Sewer System Improvement Program Report: Draft Report for SFPUC Commission Review*, Prepared by Wastewater Enterprise Staff, July 27, 2010 (revised August 10, 2010).

¹² CalRecycle, "Active Landfills Profile for Altamont Landfill and Resource Recovery (01-AA-0009)". Available online at: www.calrecycle.ca.gov/Profiles/Facility/Landfill/LFProfile1.asp?COID=1&FACID=01-AA-0009, accessed on October 20, 2011.

In July 2011, upon the recommendation of the San Francisco Department of the Environment, the Board of Supervisors approved a 10-year contract with Recology to ship the city's solid waste to the Ostrom Road Landfill in Yuba County when the current agreement with the Altamont Landfill expires. The Ostrom Road Landfill has an estimated capacity of approximately 39 million tons (90 percent of permitted capacity) and an estimated closure date of 2066. The Ostrom Road Landfill has a permitted capacity of 3,000 tons of solid waste per day.¹³

Recycling Goals

According to the California State Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939), San Francisco is required to adopt an integrated waste management plan, implement a program to reduce the amount of waste disposed, and have its waste diversion performance periodically reviewed by the California Department of Resources Recycling and Recovery (CalRecycle).

The City achieved a 77-percent landfill diversion rate for 2008, up from 70 percent in 2006 and the highest of any city in the country. San Francisco diverted over 1.6 million tons of waste material in 2008 through recycling, composting, and reuse. Only 560,000 tons went to landfill, the lowest disposal on record.¹⁴

Beginning with the 2007 jurisdiction annual reports, diversion rates were no longer used to measure compliance with AB 939. With the passage of SB 1016 in 2006 (the Per Capita Disposal Measurement System), per capita disposal rates are instead measured to determine if a jurisdiction's efforts are meeting the intent of AB 939.

The city's per resident disposal target rate is 6.6 pounds per person per day (PPD), and its per employee disposal target rate is 10.6 PPD. In 2009, which is the most recent date for which data are available, the measured disposal rate was 3.1 PPD for residents and 4.8 PPD for employees, thereby meeting the City's target rates.¹⁵

Regulatory Setting

Applicable state and local regulations and planning efforts are discussed where relevant under "Environmental Setting" below. In addition, Chapter 3, Plans and Policies, provides information on other plans and policies that address services and utilities issues and are applicable to the Project Area.

¹³ California Department of Resources Recycling and Recovery (CalRecycle), "Active Landfills Profile for Recology (Norcal) Ostrom Road LF Inc. (58-AA-0011)." Accessed September 2, 2011. Available online at: <http://www.calrecycle.ca.gov/Profiles/Facility/Landfill/LFProfile1.asp?COID=58&FACID=58-AA-0011>, accessed on April 19, 2012.

¹⁴ Office of the Mayor, City and County of San Francisco, Press Release, "Mayor Newsom Announces San Francisco's Waste Diversion Rate At 77 Percent, Shattering City Goal And National Recycling Records," August 27, 2010.

¹⁵ California Department of Resources Recycling and Recovery (CalRecycle), "Jurisdiction Diversion/Disposal Rate Summary." Available online at: www.calrecycle.ca.gov/LGCentral/Tools/mars/DrmcMain.asp?VW=Disposal, accessed on May 13, 2011.

Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR, the Proposed Project would result in a significant impact with respect to public services and utilities if it would:

- Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any public services such as fire protection, police protection, schools, or other services;
- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Not have sufficient water supply available to serve the project from existing entitlements and resources, or require new or expanded water supply resources or entitlements;
- Result in a determination by the wastewater treatment provider that would serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Not be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Not comply with federal, state, and local statutes and regulations related to solid waste.

Approach to Analysis

Impacts on public services and utilities are examined in relationship to the anticipated population growth within the Project Area resulting from implementation and buildout of the Draft Plan in 2030, as well as from Rezoning of Adjacent Parcels and construction of the 350 Eighth Street project. The provision of fire protection and police services, schools, solid waste services, water, and wastewater collection and treatment to serve growth in the Project Area is examined in the context of anticipated growth that would occur in the Project Area, as summarized in Chapter 4 Overview, and discussed in Section 4.C, Population and Housing. For a discussion of the Proposed Project's impacts on parks, please see Section 4.J, Recreation.

It is noted that transportation and street network improvements that would be implemented as part of the Draft Plan would not have any impacts on public services, utilities, or service systems, as they would

not result in any of the impacts listed under “Significance Criteria,” above. For this reason, these impacts are not discussed any further in this section.

Impacts of the Western SoMa Community Plan and Rezoning of Adjacent Parcels (Project-Level Analysis)

Impact PS-1: Neither the implementation of the Draft Plan nor the Rezoning of the Adjacent Parcels would result in the need for new or physically altered fire protection or police facilities. (Less than Significant)

Development within the Project Area, including in the Draft Plan Area and on the Adjacent Parcels, would result in an increased demand for fire protection and police services over the next 20 years as a result of increases in population, housing, and employment. New development would increase the number of calls for service received in the Project Area and the level of regulatory oversight necessary to serve the increased population and employment. Based on crimes and calls for service compared to other district stations, the Southern Station should have approximately 67 additional officers to sufficiently patrol the Southern District under current conditions. Current constraints that affect provision of police services in the district include a hiring freeze and the need to review and allocate personnel on a citywide basis. In addition, the existing Southern Station is currently at capacity.¹⁶ However, the increased demand for police and fire protection services would be gradual and incremental over the 20-year time period of the Draft Plan and Adjacent Parcels, and the increase would not be substantial in comparison to the existing demand and capacity for such fire and police protection services in the Project Area.

The promotion of more mixed uses by the Draft Plan, including ground-level retail and improvements to the pedestrian infrastructure, as well as the increased residential population, would assist in the deterrence of crime in the Draft Plan Area by adding “eyes on the street.” The Draft Plan encourages the increased incorporation of “Crime Prevention through Environmental Design” strategies and a greater neighborhood police presence. Implementation of the Draft Plan is not anticipated to result in the need for new or expanded police or fire protection facilities; therefore, the impact of the Draft Plan on fire protection and police services would be less than significant.

While the proposed Rezoning of Adjacent Parcels would not, in and of itself, result in direct impacts on the physical environment, it could indirectly create incentives for demolition of existing structures on these parcels and the development of new structures containing office, light industrial, residential, and other permitted uses. Although many of the existing structures are not built to maximum allowable height limits, new structures could be constructed to take advantage of these limits, as well as the higher allowed residential densities and floor area ratios. This would increase population and employment in the area, consequently also increasing the need for police or fire protection services. However, the growth that would be anticipated as a result of the Rezoning of Adjacent Parcels would be very modest, and increases in demand for police and fire protection services would not be sufficient to require the construction of additional facilities. The Adjacent Parcels are already served by existing providers, and it

¹⁶ Captain Greg McEachern, San Francisco Police Department, Response to Western SoMa Community Plan EIR Police Services Questionnaire, September 20, 2010.

is expected that any slight increases to demand could be met by existing facilities. Therefore, the impact of the Rezoning of Adjacent Parcels on fire protection and police services would also be less than significant.

Based on the foregoing analysis, the implementation of the Draft Plan and Rezoning of the Adjacent Parcels would not result in the need for new or physically altered fire protection or police facilities, and this impact would be less than significant.

Mitigation: None required.

Impact PS-2: Neither the implementation of the Draft Plan nor the Rezoning of the Adjacent Parcels would result in the need for new or physically altered school facilities. (Less than Significant)

New residential development anticipated in the Project Area would attract residents, including school-age children. According to San Francisco Planning Department calculations, approximately 2,767 households would be added to the Project Area upon buildout of the Draft Plan and Rezoning of Adjacent Parcels in 2030. The SFUSD employs a student generation rate of 0.203 student per new housing unit for planning purposes.¹⁷ Therefore, the resulting increase in students attributable to the Draft Plan and the Rezoning of Adjacent Parcels in 2030 would be around 562 students. The increase in students would occur gradually, and a portion of those students also would be expected to attend private schools. This increase in students within the Project Area would not be anticipated to affect the demand for schools likely to be attended by new residents in the Project Area and would be within the capacity of the SFUSD.

Local jurisdictions are precluded under state law (Senate Bill 50) from imposing school-enrollment-related mitigation beyond the school impact fees. The collection of these fees, therefore, is considered to fully mitigate any potential effects on schools associated with additional development that could result from implementation of the Draft Plan and Rezoning of Adjacent Parcels, and the impact would be considered less than significant.

Mitigation: None required.

Impact PS-3: Neither the implementation of the Draft Plan nor the Rezoning of the Adjacent Parcels would require or result in the construction of substantial new water treatment facilities, and the City would have sufficient water supply available from existing entitlements. (Less than Significant)

The SFPUC forecasted future water demand using ABAG projections that incorporate existing land use designations and reasonably foreseeable future projects within the City and County of San Francisco and other areas served by the SFPUC. As noted previously, the SFPUC can still meet the current and future

¹⁷ City and County of San Francisco, *Eastern Neighborhood Rezoning and Area Plans, Final EIR*, Case No. 2004.0160E, Certified August 7, 2008. Available online at: <http://www.sf-planning.org/index.aspx?page=1893>, accessed on April 19, 2012.

demand in years of average or above-average precipitation. However, during a multiple-dry-year event, it is possible that the SFPUC would not be able to meet 100 percent of demand and would therefore have to impose reductions on its deliveries. Under the WSAP, customers would experience no reduction in regional water system deliveries within a 10-percent shortage. During a 20-percent system-wide shortage, customers would experience a 1.9-percent reduction in deliveries. As discussed above, the SFPUC concluded that, under the Water Supply Improvement Program (WSAP) and with additional local WSIP supplies, sufficient water is available to meet existing demand and planned future uses.¹⁸ Therefore, implementation of the Draft Plan and the Rezoning of Adjacent Parcels would not require major expansion of the SFPUC's water facilities, nor would it adversely affect the City's water supply. This impact would be less than significant.

Mitigation: None required.

Impact PS-4: Neither the implementation of the Draft Plan nor the Rezoning of the Adjacent Parcels would 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. (Less than Significant)

Buildout under the Draft Plan and Rezoning of Adjacent Parcels would increase the residential population and employees working within the Project Area over the next 20 years, resulting in the generation of a greater volume of wastewater requiring collection and treatment. With implementation of the Draft Plan and Rezoning of Adjacent Parcels, the population in the Project Area is expected to increase by an additional 6,336 people and employment by 6,345 in 2030 as compared to existing conditions.

The current city-wide sewer system effectively collects, conveys, treats, and discharges all of the dry-weather domestic wastewater and urban runoff flows and wet-weather flows, and meets all discharge permit requirements of the state and the United States Environmental Protection Agency.¹⁹ Over the past four years, the SFPUC's Capital Improvement Program (CIP) has improved the reliability and efficiency of the wastewater system through programs designed to maximize collection and conveyance of sewage and stormwater, maximize control of odor emissions, and improve the reliability of critical treatment facilities.

System-wide wastewater improvements continuing under the CIP as well as long-term projects to be initiated under the SFPUC's Sewer System Improvement Program (SSIP) would ensure the adequacy of sewage collection and treatment services to meet expected demand in San Francisco and within the Project Area. Therefore, the impact on wastewater services in the Project Area with implementation of the Draft Plan and Rezoning of Adjacent Parcels would be considered less than significant.

¹⁸ SFPUC, *2010 Urban Water Management Plan for City and County of San Francisco*, June, 2011. Available online at: <http://sfwater.org/Modules/ShowDocument.aspx?documentID=1055>, accessed on April 19, 2012.

¹⁹ SFPUC, *Sewer System Improvement Program Report: Draft Report for SFPUC Commission Review*, prepared by Wastewater Enterprise Staff, July 27, 2010 (revised August 10, 2012).

Mitigation: None required.

Impact PS-5: With implementation of the Draft Plan and Rezoning of the Adjacent Parcels, the Project Area would continue to be served by a landfill with sufficient permitted capacity to accommodate solid waste generated by the Draft Plan and Rezoning of Adjacent Parcels and would comply with federal, state, and local statutes and regulations related to solid waste. (Less than Significant)

Using an estimated residential per capita disposal rate of 0.42 ton (840 pounds) per resident per year, population growth in the Project Area attributable to the Draft Plan and Rezoning of Adjacent Parcels at buildout in 2030 (approximately 6,336 people), as compared to existing conditions, would generate an estimated 2,660 tons of waste per year.²⁰ Additional waste would be generated by new commercial, office, light industrial, and other non-residential uses in the Project Area.

Although the increased residential population and business activities resulting from implementation of the Draft Plan and the Rezoning of Adjacent Parcels would increase the total waste generated by the city, the increasing rate of diversion through recycling, composting, and other methods would result in a decreasing share of total waste that would be disposed in the Altamont Landfill, or in the Ostrom Road Landfill when the current contract with the Altamont Landfill expires. Given this fact, and given the long-term capacity available at these landfills, neither the Draft Plan nor the Rezoning of Adjacent Parcels would result in either landfill exceeding its permitted capacity or non-compliance with federal, state, and local statutes and regulations related to solid waste. Therefore, this impact would be less than significant.

Mitigation: None required.

Impacts of the 350 Eighth Street Project (Project-Level Analysis)

Impact PS-6: The proposed 350 Eighth Street project would not result in the need for new or physically altered fire or police protection facilities. (Less than Significant)

The 350 Eighth Street project would add residential, commercial, light industrial, and community-serving uses at the project site. The introduction of residents, employees, and visitors at the site would result in an increased demand for fire protection and police services. However, the increase would be incremental and is not anticipated to be substantial in light of the existing demand and capacity for such services in the area. The 350 Eighth Street project would not require the construction of new or physically altered facilities or significantly increase the need for fire or police staff. Because the 350 Eighth Street project is not expected to increase demand in excess of amounts provided for in the vicinity and would not require the construction of any new facilities, its impact on fire protection and police services would be less than significant.

²⁰ CalRecycle, "Solid Waste Characterization Database, Residential Waste Disposal Rates," www.calrecycle.ca.gov/wastechar/ResDisp.htm, viewed August 30, 2010.

Mitigation: None required.

Impact PS-7: The proposed 350 Eighth Street project would not result in the need for new or physically altered school facilities. (Less than Significant)

The 350 Eighth Street project would include approximately 444 residential units, which would bring residents, including school-age children, to the project site. Using the SFUSD student generation rate of 0.203 student per new housing unit, the project would house approximately 90 children at buildout. This relatively minor increase in students would not be anticipated to affect the demand for schools likely to be attended by the new residents. In addition, a portion of those students would be anticipated to attend various private schools in the city.

Under state law (SB 50), the collection of school impact fees is considered to fully mitigate any potential effects associated with development, including development that could result from implementation of the 350 Eighth Street project. Thus, this impact would be considered less than significant.

Mitigation: None required.

Impact PS-8: The proposed 350 Eighth Street project 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. (Less than Significant)

As discussed under Impact PS-3, the SFPUC forecasted future water demand using ABAG projections that incorporate existing land use designations and reasonably foreseeable future projects within the City and County of San Francisco and other areas served by the SFPUC. As noted previously, the SFPUC can still meet the current and future demand in years of average or above-average precipitation. However, during a multiple-dry-year event, it is possible that the SFPUC would not be able to meet 100 percent of demand and would therefore have to impose reductions on its deliveries. Under the WSAP, customers would experience no reduction in regional water system deliveries within a 10-percent shortage. During a 20-percent system-wide shortage, customers would experience a 1.9-percent reduction in deliveries. The SFPUC concluded that, under the WSAP and with additional local WSIP supplies, sufficient water is available to meet existing demand and planned future uses. Therefore, the 350 Eighth Street project would not require major expansion of the SFPUC's water facilities, nor would it adversely affect the City's water supply. Thus, this impact would be less than significant.

Mitigation: None required.

Impact PS-9: The proposed 350 Eighth Street project would not 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. (Less than Significant)

The 350 Eighth Street project would add residential uses as well as new commercial, light industrial, and community-serving uses at the project site, thereby increasing the volume of wastewater generated on the site. While the 350 Eighth Street project would add to sewage flows in the area, it would not exceed the collection treatment capacity of the sewer system. The sewer system has been built to accommodate most rainwater runoff along with sanitary sewage, and the proposed project would not appreciably increase the amount of runoff. Therefore, the project would not affect the capacity of the overall system to meet state and federal treatment and discharge standards. As discussed under “Environmental Setting” above, some areas of Western SoMa have experienced flooding during periods of heavy rain that are related to building elevations being below the grade of the sewer line. The SFPUC-DPW building permit review process would ensure that appropriate improvements are made at the project site to prevent sewage overflows, if necessary. See Impact HY-3 in Section 4.N, Hydrology and Water Quality, for additional information on this review process. The impact of the 350 Eighth Street project on wastewater services would be considered less than significant.

Mitigation: None required.

Impact PS-10: The proposed 350 Eighth Street project would be served by a landfill with sufficient permitted capacity to accommodate solid waste generated by the project and would comply with federal, state, and local statutes and regulations related to solid waste. (Less than Significant)

The proposed 350 Eighth Street project would include approximately 444 residential dwelling units as well as commercial and light industrial uses that would generate solid waste at the 350 Eighth Street project site. Although the increased residential population and business activities would incrementally increase the total waste generated by the city, the increasing rate of diversion through recycling, composting, and other methods would result in a decreasing share of total waste that would be disposed in the Altamont Landfill, or at the Ostrom Road Landfill when the current landfill contract expires. The 350 Eighth Street project would also be required to comply with San Francisco Ordinance No. 27-06 regarding the recycling of construction and demolition (C&D) debris. This ordinance requires the diversion from landfills of a minimum 65 percent of C&D debris. The 350 Eighth Street project would also be expected to comply with all other federal, state, and local statutes and regulations related to solid waste. Given this fact, and given the long-term capacity available at these landfills, the proposed project would not result in either landfill exceeding its permitted capacity. Therefore, this impact would be less than significant.

Mitigation: None required.

Cumulative Impacts

Impact C-PS: The implementation of the Proposed Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute considerably to a significant cumulative impact on public services and utilities. (Less than Significant)

The Project Area and the service territories of the public service and utility providers serve as the geographical context for cumulative impact analysis for these topics. Based on the analysis provided above, public service and utilities impacts within the Project Area, including the Draft Plan Area, Adjacent Parcels, and 350 Eighth Street project site, would be considered less than significant.

Over time, growth in the Project Area and in San Francisco as a whole would result in an increased demand for police and fire protection services, reliable water supply, wastewater treatment, and solid waste disposal. Future projects, including the *Central Corridor Plan*, the 5M Project, Moscone East, and the 801 Brannan Street/One Henry Adams Street Project, which are anticipated in the vicinity of the Project Area, could require some expansion of public service and utility provisions to meet increased demand. As part of planning and environmental review phases of each of these projects, the ability of public service and utilities providers to meet increased demand would be assessed. However, the increases in demand attributable to the Proposed Project would be met by existing facilities; therefore, the Proposed Project would not result in a significant cumulative impact on the environment.

Mitigation: None required.

4.L. Biological Resources

This section describes the biological resources that occur or have the potential to occur within or adjacent to the Draft Plan Area, the Adjacent Parcels, and the 350 Eighth Street project site and evaluates the possible impacts on these resources with implementation of the Proposed Project. Mitigation measures to reduce adverse impacts on biological resources to less-than-significant levels are identified.

Information on existing vegetation, wildlife, and special-status species was obtained from regional plans and reports, records from the California Natural Diversity Database (CNDDB), California Native Plant Society (CNPS) Electronic Inventory, and U.S. Fish and Wildlife Service (USFWS), aerial photo interpretation, and other biological literature.

Environmental Setting

Regional Setting

The Project Area, which consists of the Draft Plan Area, Adjacent Parcels, and 350 Eighth Street project site, is located in the Bay-Delta Bioregion, which contains a variety of natural communities that range from the open waters of the Bay and Delta to salt and brackish marshes to grassland, chaparral, and oak woodlands. The temperate climate is Mediterranean in nature, with relatively mild, wet winters and warm, dry summers. The high diversity of vegetation and wildlife found in the region is a result of soil, topographic, and micro-climate diversity that combines to promote relatively high levels of location-specific species. This, in combination with a long history of uses resulting in alteration of the natural environment and the increasingly rapid pace of development in the region, has resulted in a relatively high degree of endangerment for local flora and fauna.

The San Francisco Bay-Delta is the second largest estuary in the United States and supports numerous aquatic habitats and biological communities. It encompasses 479 square miles, including shallow mudflats, tidal marshes, and open waters. The San Francisco Bay-Delta is an important wintering and migratory stop-over site for the Pacific Flyway, and more than 300,000 wintering waterfowl use the region.

Western SoMa Community Plan Area and Adjacent Parcels

The CEQA baseline for biological resources analysis is the South of Market (SoMa) area of San Francisco, which is fully developed with structures and roadways. Most buildings within the Draft Plan Area and on Adjacent Parcels currently range from one to three stories in height and are built of concrete, masonry, brick, or wood, without large expanses of glazing. No natural communities remain within the Draft Plan Area or on the Adjacent Parcels, and there is currently very little open space throughout this fully urban area.

Vegetation Communities

No natural plant communities remain within the Draft Plan Area or on the Adjacent Parcels. Vegetation within these areas consists of street trees and landscaping on the street and in occasional back yards throughout the area. Occasional areas of ruderal, or weedy, vegetation occur in and around the freeway

on-ramps and railroad tracks. These types of vegetated areas generally provide habitat only for species habituated to urban life and high disturbance levels. Typical urban wildlife are usually generalists¹ and often non-native species that are tolerant of human presence and activities, such as house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), rock dove (*Columba livia*), house finch (*Carpodacus mexicanus*), Norway rat (*Rattus norvegicus*), house mouse (*Mus musculus*), and pocket gophers (*Thomomys bottae*).

Sensitive Natural Communities

Sensitive natural communities are designated as such by various resource agencies, such as California Department of Fish and Game (CDFG), or in local policies and regulations. Sensitive communities are generally considered to have important functions or values for wildlife or humans or are recognized as declining in extent or distribution, and are therefore considered threatened enough to warrant some sort of protection. For example, many local agencies in California consider protection of oak woodlands important, and federal, state, and most local agencies also consider wetlands and riparian habitat as sensitive communities. The CNDDB tracks communities it believes to be of conservation concern, and these communities are typically considered sensitive for the purposes of CEQA analysis. No sensitive communities occur within the Draft Plan Area or on the Adjacent Parcels.

Jurisdictional Waters and Wetlands

The Draft Plan Area and Adjacent Parcels are fully developed, with no waterways, lakes, or other impoundments of water. No potentially jurisdictional waters or wetlands occur within the Draft Plan Area or the Adjacent Parcels.

Special-Status Species

A number of species known to occur in the vicinity of the Draft Plan Area and on the Adjacent Parcels are protected pursuant to federal and/or state endangered species laws, or have been designated Species of Special Concern by the CDFG. In addition, Section 15380(b) of the CEQA *Guidelines* provides a definition of rare, endangered, or threatened species that are not included in any listing.² Species recognized under these terms are collectively referred to as “special-status species.” For the purposes of this EIR, special-status species include:

- Plant and wildlife species listed as rare, threatened or endangered under the federal or state endangered species act;
- Species that are candidates for listing under either federal or state law;
- Species formerly designated by the USFWS as Species of Concern or by the CDFG as Species of Special Concern;

¹ Generalist species are able to use a variety of habitats and food sources, unlike many special-status species that are closely restricted to a specific habitat type or food source.

² For example, vascular plants listed as rare or endangered or as List 1 or 2 by the CNPS are considered to meet Section 15380(b) criteria.

- Species such as candidate species that may be considered rare or endangered pursuant to Section 15380(b) of the CEQA *Guidelines*.

Based on the review of comprehensive lists of special-status species that were obtained from the CNDDDB, CNPS Electronic Inventory, and the USFWS, as well as review of biological literature of the region, previous EIRs, and an evaluation of the habitat conditions of the Draft Plan Area and Adjacent Parcels, it was determined that most of the special-status species would not occur in the Draft Plan Area or on the Adjacent Parcels because suitable habitat is not provided for them in the Project Area. Thus, they were eliminated from further evaluation.

Species Assessed in Detail

Of the special-status plants and animals evaluated through the aforementioned methods, the following six species were determined to have some potential to occur within the Draft Plan Area or the Adjacent Parcels and to be affected by the implementation of the Draft Plan or the Rezoning of Adjacent Parcels:

- American peregrine falcon (*Falco peregrinus anatum*)
- American kestrel (*Falco sparverius*)
- Cooper's hawk (*Accipiter cooperi*)
- Red-tailed hawk (*Buteo jamaicensis*)
- Western red bat (*Lasiurus blossevillei*)
- Townsend's big-eared bat (*Corynorhinus townsendii townsendii*)

These species are described in further detail below and are fully considered in the impact analysis presented later in this section.

Special-Status Plants

No special-status plant species are expected to occur within the Draft Plan Area or on the Adjacent Parcels. Although a number of special-status plant species have the potential to occur within the general Project Area vicinity, there are no intact natural communities remaining within the Draft Plan Area or on the Adjacent Parcels. Vegetation in the few scattered open space areas within the Draft Plan Area and Adjacent Parcels is dominated by landscaping, turf, or weeds, and the Project Area as a whole has a longstanding history of disturbance.

Special-Status Animals

Birds

American peregrine falcon (*Falco peregrinus anatum*). Listed as fully protected³ under the California Fish and Game Code, the peregrine falcon is a raptor that is known throughout California and is a year-round resident along the Pacific coast. The peregrine is a specialist, preying primarily on mid-sized birds, such as pigeons and doves, in flight. Occasionally these birds take insects and bats. Although typical nesting sites for the species are tall cliffs, preferably over or near water, peregrines are also known to use urban

³ A fully protected species cannot be taken at any time, except, under certain circumstances, in association with a species recovery plan.

sites,⁴ including the Bay Bridge and tall buildings in San Francisco and San Jose. The San Francisco Financial District has been considered a peregrine falcon territory since the late 1980s. The Santa Cruz Predatory Bird Research Group placed a nest box on the northwest corner of the PG&E building, located at 245 Market Street, approximately 1 mile east of the Project Area, when falcons were seen perching there often. Peregrine falcons first nested on the building in 2003 and have used the PG&E building and other structures within their territory, including the Bay Bridge, for nesting each year since then.⁵

American kestrel (*Falco sparverius*). A relatively small member of the falcon family, the American kestrel preys on small birds and on mammals, lizards, and insects. This raptor is most common in open habitats, such as grasslands or pastures. American kestrels nest in cavities, primarily in trees,⁶ but may also use buildings for nesting. Surveyors collecting data for the San Francisco Breeding Bird Atlas (SFBBA)⁷ noted two breeding pairs in San Francisco. While these were not located within the Draft Plan Area or on the Adjacent Parcels, both nests were located in cavities or crevices in buildings, and the SFBBA indicates it is possible that the species could nest in and around downtown San Francisco. American kestrel is protected under Section 3503.5 of the California Fish and Game Code.

Cooper's hawk (*Accipiter cooperi*). Cooper's hawk ranges over most of North America and may be seen throughout California, most commonly as a winter migrant. Nesting pairs have declined throughout the lower-elevation, more populated parts of the state. Cooper's hawk generally forage in open woodlands and wooded margins and nests in tall trees, often in riparian areas. This species is known to nest locally in Bay Area urban neighborhoods but has not been documented as breeding in San Francisco.⁸ This species occasionally may forage in and around the Draft Plan Area and Adjacent Parcels; however, there is no suitable nesting habitat for this species there. Cooper's hawk is protected under Section 3503.5 of the California Fish and Game Code as a raptor.

Red-tailed hawk (*Buteo jamaicensis*). Red-tailed hawks are commonly found in woodlands and open country with scattered trees. These large hawks feed primarily on small mammals but also prey on other small vertebrates, such as snakes and lizards, as well as on small birds and invertebrates. Red-tailed hawks nest in a variety of trees in urban, woodland, and agricultural habitats and have been observed throughout the city. Breeding for this species within San Francisco has only been confirmed in areas that included sufficient grassland habitat for foraging.⁹ This hawk may forage in and around the Draft Plan Area and Adjacent Parcels, but it is highly unlikely to nest there. Red-tailed hawk is protected under Section 3503.5 of the California Fish and Game Code as a raptor.

⁴ Peeters, H. and J. Peeters, *Raptors of California*, University of California Press, Berkeley, CA, 2005 [California Natural History Guides: 82].

⁵ Santa Cruz Predatory Bird Research Group. Available online at: <http://www2.ucsc.edu/scpbrg/pefa.htm>, accessed on July 28, 2010.

⁶ Sibley, D.A., *The Sibley Guide to Bird Life and Behavior*, Alfred A. Knopf, Inc., New York, 2001.

⁷ San Francisco Field Ornithologists, *San Francisco Breeding Bird Atlas, 2001-2003*. Available online at: <http://www.sffo.org>, accessed on July 26, 2010.

⁸ San Francisco Field Ornithologists, *op. cit.*

⁹ *Ibid.*

Mammals

The Draft Plan Area and Adjacent Parcels provide limited potential roosting habitat for two special-status bat species. However, foraging opportunities in such an urbanized area are relatively low, with few open or vegetated areas and no areas of standing water to host insect populations.

Western red bat (*Lasiurus blossevillii*). The western red bat has a widespread distribution throughout California. These bats are generally solitary and roost in trees with dense foliage. They are tolerant of cold temperatures and are not known to hibernate, although it is possible that they do in colder climates.¹⁰ This species may use larger backyard trees within the Draft Plan Area for roosting but the potential for their presence is low.

Townsend's big-eared bat (*Corynorhinus townsendii townsendii*). Townsend's big-eared bats occur in a variety of habitats and use caves, mines, tunnels, buildings, or other human-made structures for roosting. While the potential for their occurrence within the Draft Plan Area and Adjacent Parcels is low, it is possible that this species could be found in abandoned or underused buildings.

Breeding and Migratory Birds

San Francisco and surrounding Bay waters provide habitat for well over 200 species of birds, with some species as year-round residents, other species as winter residents, and still others passing through along the Pacific Flyway during spring and fall migrations. Obviously, avian diversity in the city is highest in areas with relatively large-sized, diverse patches of habitat remaining. There is no such habitat remaining within the Draft Plan Area or on the Adjacent Parcels; however, trees, shrubs, and buildings within the Draft Plan Area and on the Adjacent Parcels provide nesting habitat for a variety of birds as well as patches of habitat for potential use by migrants as stop-over sites. The most common species documented as nesting in the general Downtown area,¹¹ which includes the Draft Plan Area and Adjacent Parcels, are Brewer's blackbird (*Euphagus cyanocephalus*), American robin (*Turdus migratorius*), mourning dove (*Zenaida macroura*), rock dove, house finch, house sparrow, European starling, and brown-headed cowbird (*Molothrus ater*). Less frequently found nesters include Anna's hummingbird (*Calypte anna*), common bushtit (*Psaltirparus minimus*), white-crowned sparrow (*Zonotrichia leucophrys*), chestnut backed chickadee (*Poecile rufescens*), and hooded oriole (*Icterus cucullatus*).

Designated Critical Habitat

The Draft Plan Area and Adjacent Parcels are not located within a USFWS-designated critical habitat for any federally listed species.

¹⁰ Jameson, E.W. and Peeters, H.J., California Mammals, University of California Press, Berkeley, CA, 1988.

¹¹ San Francisco Field Ornithologists. *op. cit.*

350 Eighth Street Project Site

The 350 Eighth Street project site comprises an approximately 3-acre paved parking lot with three small, single-story buildings and several adjacent street trees. There are no natural vegetation communities within the 350 Eighth Street project site. Existing vegetation within or immediately adjacent to the project site consists of one large street tree at the southeast corner of the 350 Eighth Street project site and eight small street trees, four on Eighth Street and four on Harrison Street. Otherwise the 350 Eighth Street project site consists of a fully asphalted parking lot containing three one-story buildings.

As discussed above, there are no sensitive communities within the Project Area and, thus, the 350 Eighth Street project site. The 350 Eighth Street project site is fully developed in an urban setting and there are no water features of any kind on this site. Furthermore, there are no potentially jurisdictional waters or wetlands within the 350 Eighth Street project site. The consideration process for special-status species for this EIR was discussed in detail earlier under the discussion of the Draft Plan Area and Adjacent Parcels and is also applicable to the 350 Eighth Street project site.

Special-Status Plants

No special-status plant species are expected to occur at the 350 Eighth Street project site. This is a fully developed site in an urban setting, with no vegetation present except for a few street trees, which are common horticultural varieties.

Special-Status Animals

Of the special-status plants and animals evaluated, only the following four species were determined to have some potential to occur within the 350 Eighth Street project site:

- American peregrine falcon
- American kestrel
- Cooper's hawk
- Red-tailed hawk

These species are described in detail above, under the discussion of the Draft Plan Area and Adjacent Parcels, and are fully considered in the impact analysis below. While no suitable breeding habitat is available for these birds at the 350 Eighth Street project site, there is marginally suitable foraging habitat, as these species all are known to prey on other birds. These species also may use buildings adjacent to the 350 Eighth Street project site for loafing and roosting.

In addition, several street trees along Eighth and Harrison Streets provide marginal nesting substrate for resident and migratory birds, and it is possible some species may nest in or on buildings on, or adjacent to, the 350 Eighth Street project site. The discussion of the Draft Plan Area and Adjacent Parcels, above, provides further details on the species most likely to use such areas for breeding. There is no habitat for special-status bats at the 350 Eighth Street project site.

Bird Strikes and Their Effects on Bird Populations

It is estimated that, in North America alone, between 100 million and 1 billion birds are killed due to collisions with buildings and other structures each year.¹² Collisions are currently recognized as one of the leading causes of bird population declines worldwide.¹³ Daytime collisions occur most often when birds fail to recognize window glass as a barrier. Regardless of overall building height, the ground floor and first few stories of buildings present the greatest hazards to most birds; reflections of attractive ground-level features like vegetation draw birds toward glass surfaces and often result in collisions. Compared to older construction, new buildings often include more glass surfaces in order to bring more daylight into building interiors. The resulting increases in bird strikes can be considered a “biologically significant” issue, potentially affecting the viability of local and regional bird populations.¹⁴ Transparent features – especially buildings where birds can see through two glass surfaces to vegetation on the other side – also attract birds and cause collisions. Vegetated areas and bodies of water provide potentially valuable stop-over habitat for migratory birds. Open space areas adjacent to developed areas create bird habitats in the vicinity of proposed buildings, potentially resulting in higher bird collision risks.

Many collisions are induced by artificial night lighting, particularly from large buildings. Night lighting can be especially problematic for migrating songbirds, since many are nocturnal migrants.¹⁵ The tendency of birds to move toward lights at night when migrating, and their reluctance to leave the sphere of light influence for hours or days once encountered, has been well documented.¹⁶ It has been suggested that structures located at key points along migratory routes may present a greater hazard than those at other locations.¹⁷ Other research suggests that fatal bird collisions increase as light emissions increase, that weather often plays an important part in increasing the risk of collisions, and that nights with heavy cloud cover and/or precipitation present the conditions most likely to result in high numbers of collisions.¹⁸ The type of light used may affect its influence on the birds: for example, studies have indicated that blinking lights or strobe lights affect birds significantly less than non-blinking lights.¹⁹ Power lines, communications towers, and wind turbines (“windmills”) have also been implicated in bird strikes.

¹² San Francisco Planning Department, *Standards for Bird-Safe Buildings*, Adopted July 14, 2011. Reviewed August 18, 2011. Available online at: http://www.sf-planning.org/ftp/files/publications_reports/bird_safe_bldgs/Standards_for_Bird-Safe_Buildings_8-11-11.pdf, viewed on April 19, 2012.

¹³ Brown, H., Caputo, S., McAdams, E.J., Fowle, M., Phillips, G., Dewitt, C., Gelb, Y., Bird-safe Building Guidelines, New York Audubon, available online at: <http://nycaudubon.org>, viewed August 24, 2010.

¹⁴ *Ibid.*

¹⁵ Ogden, L.E., Collision Course: The Hazards of Lighted Structures and Windows to Migrating Birds, Special Report for the World Wildlife Fund and the Fatal Light Awareness Program, September 1996, available online: www.flap.org, viewed August 25, 2010.

¹⁶ *Ibid.*

¹⁷ *Ibid.*

¹⁸ Ogden, L.E., Summary Report on the Bird Friendly Building Program: Effect of Light Reduction on Collision of Migratory Birds, Special Report for the Fatal Light Awareness Program, available online: www.flap.org, January 2002, viewed August 24, 2010.

¹⁹ Gauthreaux, S.A., Belser, C.G., Effects of Artificial Night Lighting on Migrating Birds, In: Rich, C. and Longcore, T., Ecological Consequences of Night Lighting, Island Press, Covelo, CA, pp. 67-93, 2006.

Regulatory Setting

This section briefly describes federal, state, and local regulations, permits, and policies pertaining to biological resources as they apply to the Proposed Project.

Special-Status Species

Federal Endangered Species Act

The USFWS, which has jurisdiction over plants, wildlife, and most freshwater fish, and the National Marine Fisheries Service (NMFS), which has jurisdiction over anadromous fish, marine fish, and mammals, oversee implementation of the Federal Endangered Species Act (FESA). Section 7 of the FESA mandates that all federal agencies consult with the USFWS and NMFS to ensure that federal agency actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species. A federal agency is required to consult with the USFWS and NMFS if it determines a “may effect” situation will occur in association with a proposed project. The FESA prohibits the “take”²⁰ of any fish or wildlife species listed as threatened or endangered, including the destruction of habitat that could hinder species recovery.

California Endangered Species Act

Under the California Endangered Species Act (CESA), the CDFG has the responsibility for maintaining a list of threatened and endangered species (California Fish and Game Code, Section 2070). The CDFG also maintains a list of “candidate species,” which are species formally noticed as being under review for addition to either the list of endangered species or the list of threatened species. In addition, the CDFG maintains lists of “species of special concern,” which serve as “watch lists.” Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species could be present on the project site and determine whether a proposed project could have a potentially significant impact on such species. In addition, the CDFG encourages informal consultation on any proposed project that may impact a candidate species.

California Native Plant Protection Act

State listing of plant species began in 1977 with the passage of the California Native Plant Protection Act (NPPA), which directed the CDFG to carry out the legislature’s intent to “preserve, protect, and enhance endangered plants in this state.” The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare and to require permits for collecting, transporting, or selling such plants. The CESA expanded upon the original NPPA and enhanced legal protection for plants. The CESA established threatened and endangered species categories, and grandfathered all rare

²⁰ “Take,” as defined in Section 9 of the FESA, is broadly defined to include intentional or accidental “harassment” or “harm” to wildlife. “Harass” is further defined by the USFWS as an intentional or negligent act or omission that creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns that include, but are not limited to, breeding, feeding, and sheltering. “Harm” is defined as an act that actually kills or injures wildlife. This may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

animals—but not rare plants—into the act as threatened species. Thus, there are three listing categories for plants in California: rare, threatened, and endangered.

California Fish and Game Code

Under Section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the code or any regulation made pursuant thereto. Section 3503.3 of the California Fish and Game Code prohibits take, possession, or destruction of any birds in the orders Falconiformes (hawks) or Strigiformes (owls), or of their nests and eggs.

California Fish and Game Code Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) allow the designation of a species as “fully protected.” This is a greater level of protection than is afforded by the California Endangered Species Act, since such a designation means the listed species cannot be taken at any time, except, under certain circumstances, in association with a species recovery plan.

Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (16 USC, Section 703, Supplement I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

Other Plans and Policies

San Francisco Urban Forestry Ordinance

The City and County of San Francisco’s Urban Forestry Ordinance (Article 16 of the Public Works Code) protects San Francisco’s street trees, significant trees, and landmark trees regardless of species. The three categories of trees protected by the ordinance are defined as follows:

- **Street trees** are “any tree growing within the public right-of-way, including unimproved public streets and sidewalks, and any tree growing on land under the jurisdiction of the Department [of Public Works]” as defined in Section 802 of Article 16 of the San Francisco Tree Ordinance. The removal of street trees by persons other than the Department of Public Works is restricted by Section 806b of Article 16, wherein a permit is required for removal.
- **Significant trees** are defined in Section 810A of Article 16 as trees (1) on property under the jurisdiction of the Department of Public Works or on privately owned property with any portion of its trunk within 10 feet of the public right-of-way, and (2) that satisfy at least one of the following criteria: (a) a diameter at breast height (DBH) in excess of 12 inches, (b) a height in excess of 20 feet, or (c) a canopy in excess of 15 feet. The removal of significant trees by persons other than the Department of Public Works requires a permit from the department, according to the process described in Section 806b of Article 16.
- **Landmark trees** are trees that have been nominated as landmark trees by a member of the public, the landowner, the San Francisco Planning Commission, the San Francisco Board of Supervisors, or the Landmarks Preservation Advisory Board, and that have been subsequently designated as a

landmark tree by the Urban Forestry Council. Trees that have been nominated and are undergoing review are protected according to the same standards as designated landmark trees while going through the review process, according to Section 810 of Article 16 of the San Francisco Tree Ordinance.

Trees protected under the Urban Forestry Ordinance require a permit for removal. Application, accompanied by a fee, must be made to the San Francisco Department of Public Works (DPW) to obtain a tree removal permit. When removal is related to new construction, site plans showing tree locations must be included with the application. Prior to removal, the tree(s) should be evaluated by an International Society of Arboriculture Certified Arborist and a written report submitted to DPW. A DPW inspector will evaluate trees to be removed and if the inspector recommends removal, a notice will be posted on the tree for 30 days. A public hearing may be scheduled if any objections to the removal are received.

San Francisco's Bird-Safe Building Standards

San Francisco Planning Code Section 139

In October 2011, the San Francisco Board of Supervisors unanimously passed, and the Mayor approved, Planning Code amendments to incorporate bird-safe building standards into the code.²¹ The amendments, reviewed and recommended by the Planning Commission, introduce a new Planning Code Section 139, Standards for Bird-Safe Buildings, that focuses on buildings, both public and private, that create location-specific hazards and building feature-related hazards. Location-specific hazards apply to buildings in, or within 300 feet of and having a direct line of sight to, an Urban Bird Refuge, such as "open spaces two acres and larger dominated by vegetation, including vegetated landscaping, forest, meadows, grassland, or wetlands, or open water." Section 139 requires that 90 percent of glazing in the "Bird Collision Zone" (60 feet above grade, plus 60 feet above an adjacent vegetated roof 2 acres or larger) be treated (fritted, stenciled, frosted, or covered with netting, screens, grids, or bird-visible UV patterns). Lighting must also be minimized, and any wind generators must comply with San Francisco Planning Department requirements, "including any monitoring of wildlife impacts that the [Planning] Department may require."

In addition to buildings in and near an Urban Bird Refuge, Section 139 applies similar standards to certain building features citywide, including "free-standing glass walls, wind barriers, skywalks, balconies, and greenhouses on rooftops that have unbroken glazed segments 24 square feet and larger in size."

Standards for Bird-Safe Buildings

The Planning Commission in July 2011 also approved *Standards for Bird-Safe Buildings*,²² which includes guidelines for use and types of glass and façade treatments, wind generators and grates, and lighting treatments. The standards impose requirements for both location-related hazards and feature-related

²¹ Ordinance No. 199-11 (Board of Supervisors File No. 110785), passed September 27, 2011, and approved by the Mayor, October 7, 2011. Available online at: <http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances11/o0199-11.pdf>, accessed on April 19, 2012.

²² San Francisco Planning Department, *Standards for Bird-Safe Buildings*, adopted July 14, 2011. Available online at: http://www.sf-planning.org/ftp/files/publications_reports/bird_safe_bldgs/Standards_for_Bird-Safe_Buildings_8-11-11.pdf, accessed on August 18, 2011.

hazards, which are the same hazards identified in Planning Code Section 139. Required treatments are generally as specified in Section 139.

For location-related hazards involving new buildings or additions to existing buildings (and replacement of 50 percent or more of the existing glazing within the Bird Collision Zone on façade(s) facing the Urban Bird Refuge), the following requirements apply:

- **Façade Treatments:** Bird-Safe Glazing Treatment is required such that the Bird Collision Zone consists of no more than 10 percent untreated glazing. Building owners are encouraged to concentrate permitted transparent glazing on the ground floor and lobby entrances to enhance visual interest for pedestrians.
- **Lighting Design:** Minimal lighting shall be used. Lighting shall be shielded. No uplighting shall be used. No event searchlights should be permitted for the property.
- **Wind Generators:** Sites must not feature horizontal access windmills or vertical access wind generators that do not appear solid.

For building feature-related hazards involving new buildings and new additions to existing buildings, the entirety of the hazard must be made bird-safe through such treatments as fritting, netting, permanent stencils, frosted glass, exterior screens, physical grids placed on the exterior of glazing or ultraviolet patterns visible to birds. Vertical elements of the window patterns should be at least 1/4 inch wide at a minimum spacing of 4 inches, or have horizontal elements at least 1/8 inch wide at a maximum spacing of 2 inches, according to the standards.

Standards for Bird-Safe Buildings prescribes the use of a checklist to educate project sponsors and their future tenants on potential hazards and applicable treatments. The standards also provide that treatments for designated historic buildings meet the *Secretary of the Interior's Standards for Rehabilitation*, and they exempt residential buildings less than 45 feet in height with limited glass façades. *Standards for Bird-Safe Buildings* also recommends educational guidelines and voluntary programs.

Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR, the Proposed Project would result in a significant impact with respect to biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG or the USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.), through direct removal, filling, hydrological interruption, or other means;

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any applicable local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Approach to Analysis

The potential for special-status species to occur in the Project Area and be affected by the Proposed Project was assessed based on the literature review, professional judgment, and the following criteria:

- 1) A determination of susceptibility. This determination is a three-level process that evaluated for each species (a) potential occurrence in the study area (generally, the habitats of the Draft Plan Area, and Adjacent Parcels, or the 350 Eighth Street project site); (b) potential occurrence within the Proposed Project footprint; or (c) absence from either the study area or proposed construction sites. If the species was determined unlikely to be found in the study area (e.g., if no potential habitat exists for the species in the general vicinity of the Project Area), then the species was given no further consideration.
- 2) An analysis of life history and habitat requirements. If a species was determined to have the potential to occur in the Project Area, further analyses were made of life history and habitat requirements, as well as the suitability of habitat for the species found within the Project Area or its immediate vicinity.
- 3) An analysis of potential for effects from the Proposed Project. If suitable habitat was determined present within the Project Area or Project Area vicinity and the species has been documented as observed within the Project Area or has some potential to occur, additional analysis considered whether the species would be affected by the Proposed Project. Both direct effects (e.g., displacement of habitat) and indirect effects (e.g. noise) were considered. In addition, life history and habitat requirements were evaluated to ascertain the likelihood and severity of impact.

Based on the Proposed Project elements and their geographical location(s), the Proposed Project would not result in impacts related to the following significance criteria, and no impact discussion is provided for these topics for the following reasons:

- ***Effect on Riparian Habitat or Other Sensitive Natural Community.*** No riparian habitat or other sensitive natural community occurs within the Draft Plan Area or on the Adjacent Parcels. Therefore, the Proposed Project (consisting of the Draft Plan, Rezoning of Adjacent Parcels, and 350 Eighth Street project) would have no impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFG or USFWS.
- ***Effect on Federally Protected Wetlands.*** No federally protected wetlands or navigable waters occur within the Draft Plan Area or on the Adjacent Parcels. Therefore, the Proposed Project (consisting of the Draft Plan, Rezoning of Adjacent Parcels, and 350 Eighth Street project) would have no impact on any federally protected wetlands or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFG or USFWS.

- ***Conflict with Habitat Conservation Plans.*** No adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan applies to the Draft Plan Area or Adjacent Parcels. Therefore, the Proposed Project (consisting of the Draft Plan, Rezoning of Adjacent Parcels, and 350 Eighth Street project) would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

It is noted that transportation and street network improvements that would be implemented as part of the Draft Plan would not have any impacts on biological resources, as they would not result in any of the impacts listed under “Significance Criteria,” above. For this reason, these impacts are not discussed any further in this section.

Impacts of the Western SoMa Community Plan and Rezoning of Adjacent Parcels (Program-Level Analysis)

Impact BI-1: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would result in a substantial adverse impact on species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game (CDFG) or United States Fish and Wildlife Service (USFWS). (Less than Significant with Mitigation)

The Project Area and surrounding environs are developed and covered with structures and other impermeable surfaces. Because the Draft Plan Area and Adjacent Parcels are in a developed urban area with no natural vegetation communities remaining, development under the Draft Plan or the Rezoning of Adjacent Parcels would not affect any special-status plants.

As discussed in under “Environmental Setting,” above, there are several special-status animals that may potentially use habitat in the Draft Plan Area and Adjacent Parcels, including the American peregrine falcon, red-tailed hawk, American kestrel, Cooper’s hawk, western red bat, and Townsend’s big-eared bat.

Development that would occur with implementation of the Draft Plan or Rezoning of Adjacent Parcels could involve removal of trees used for nesting by a variety of birds, as well as demolition of buildings that are vacant, used seasonally or not occupied that may be used for roosting by special-status bats. Mortality of special-status birds or bats as a result of such construction activities would be considered a significant impact under CEQA.

As noted previously, raptors protected by California Fish and Game Code Section 3503.5 are considered special-status species for the purposes of this EIR. The existing environment is one of high ambient disturbance due to human activity and noise generated by city and freeway traffic, and there are few trees large enough to support nesting raptors. Therefore, the raptors listed above are not known to or expected to nest within the Draft Plan Area, the Adjacent Parcels, or their vicinity, but are likely to use the Project Area for foraging purposes. The potential for adverse impacts on raptors is discussed in detail under Impact BI-2.

In addition to CEQA impacts, tree removal resulting in the destruction of active nests or mortality of migratory birds would violate the federal Migratory Bird Treaty Act and/or the California Fish and Game Code, Sections 3500-3516. Implementation of **Mitigation Measures M-BI-1a and M-BI-1b** would reduce the impact on special-status bat species and migratory birds resulting from development under the Draft Plan or Rezoning of Adjacent Parcels to a less-than-significant level.

Mitigation Measures

- M-BI-1a: Pre-Construction Special-Status Bird Surveys.** Conditions of approval for building permits issued for construction within the Draft Plan Area or on the Adjacent Parcels shall include a requirement for pre-construction special-status bird surveys when trees would be removed or buildings demolished as part of an individual project. Pre-construction special-status bird surveys shall be conducted by a qualified biologist between February 1 and August 15 if tree removal or building demolition is scheduled to take place during that period. If bird species protected under the Migratory Bird Treaty Act or the California Fish and Game Code are found to be nesting in or near any work area, an appropriate no-work buffer zone (e.g., 100 feet for songbirds) shall be designated by the biologist. Depending on the species involved, input from the California Department of Fish and Game (CDFG) and/or United States Fish and Wildlife Service (USFWS) may be warranted. As recommended by the biologist, no activities shall be conducted within the no-work buffer zone that could disrupt bird breeding. Outside of the breeding season (August 16 – January 31), or after young birds have fledged, as determined by the biologist, work activities may proceed. Special-status birds that establish nests during the construction period are considered habituated to such activity and no buffer shall be required, except as needed to avoid direct destruction of the nest, which would still be prohibited.
- M-BI-1b: Pre-Construction Special-Status Bat Surveys.** Conditions of approval for building permits issued for construction within the Draft Plan Area or on the Adjacent Parcels shall include a requirement for pre-construction special-status bat surveys by a qualified bat biologist when large trees (those with trunks over 12 inches in diameter) are to be removed, or vacant buildings or buildings used seasonally or not occupied, especially in the upper stories, are to be demolished. If active day or night roosts are found, the bat biologist 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 the CDFG. Bat roosts initiated during construction are presumed to be unaffected, and no buffer would be necessary.

Significance after Mitigation: Less than Significant.

Impact BI-2: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would be expected to interfere substantially with the movement of native resident special-status bird species or with established native resident or migratory special-status wildlife corridors, or impede the use of native special-status wildlife nursery sites. (Less than Significant)

As discussed under “Environmental Setting,” above, bird strikes result in millions of bird deaths annually and are a leading cause of worldwide declines in bird populations. Direct effects from bird strikes include death or injury as the birds collide with lighted structures and other birds that are attracted to the light, as well as collisions with glass during the daytime. Indirect effects include delayed arrival at breeding or wintering grounds and reduced energy stores necessary for migration, winter survival, or subsequent reproduction.²³ Avian collisions are significant issue, inasmuch as they may affect special-status bird species. Moreover, as more research is undertaken with respect to bird collisions, the findings raise the potential that these collisions could be implicated in, and contribute to, the decline of some bird populations below self-sustaining levels or the substantial elimination of some bird communities in certain locales.

The Draft Plan Area and Adjacent Parcels currently contain street lights, parking lot lights, and building lights and are located in a generally urban setting, surrounded by other light sources. Therefore, existing lighting sources already provide a significant source of illumination throughout the Draft Plan Area and Adjacent Parcels. Overall, development under the Draft Plan or Rezoning of Adjacent Parcels is not expected to significantly increase the amount of light generated from the Draft Plan Area or on the Adjacent Parcels over baseline levels. (See Section 4.B, Aesthetics, of this EIR for a discussion of lighting impacts.) Combined with the fact that most night-traveling special-status birds fly at heights greater than the building heights that would be allowed in the Draft Plan Area or on the Adjacent Parcels, lighting generated by new development is not expected to substantially increase the risk of avian collisions.

The Draft Plan Area and Adjacent Parcels are surrounded by other urban development and are not proximate to, nor do they contain, large expanses of open space or water representing potentially attractive migratory bird stop-overs. Specific avian flight routes in and out of the area are not known, and there are little local data available on bird kills due to building collisions. However, both resident and migratory special-status birds are known to use the area for breeding and foraging. Increases in building heights and density throughout the Draft Plan Area and Adjacent Parcels, as well as construction of new buildings, especially those with glass façades or other large areas of glazing, could increase the risk of avian collisions with buildings. These effects could be exacerbated by increasing areas of vegetated open space in proximity to buildings, as called for under the Draft Plan and Rezoning of Adjacent Parcels. Development under the Draft Plan or Rezoning of Adjacent Parcels therefore has the potential to increase the risk of avian collisions. However, compliance with Planning Code Section 139 and the adopted *Standards for Bird-Safe Buildings* would ensure that impacts related to bird hazards would be less than significant.

²³ Gauthreaux and Belser, *op. cit.*

As stated under “Environmental Setting,” above, the Board of Supervisors in September 2011 approved Planning Code amendments to incorporate bird-safe building standards into the code.²⁴ The new Planning Code Section 139, Standards for Bird-Safe Buildings, focuses on buildings that create location-specific hazards and building feature-related hazards. Location-specific hazards apply to buildings within 300 feet of and having a direct line of sight to an Urban Bird Refuge, including open spaces 2 acres and larger dominated by vegetation, wetlands, or open water. In such areas, 90 percent of glazing in the 60 feet above grade or above a vegetated roof 2 acres or larger must be treated (fritted, stenciled, frosted, or covered with netting, screens, grids, or bird-visible UV patterns). Lighting must be minimized, and wind generators must be vertical, with a solid-blade appearance. Similar controls apply to certain building features citywide, including glass walls, wind barriers, skywalks, balconies, and rooftop greenhouses with 24 square feet of continuous glazing.

In addition, the City’s *Standards for Bird-Safe Buildings* include guidelines for use and types of glass and façade treatments, wind generators and grates, and lighting treatments, for both location-related hazards and feature-related hazards, which are the same hazards identified in Planning Code Section 139. Required treatments are generally as specified in Section 139.

There are no Urban Bird Refuges in the Project Area, including the Draft Plan Area and Adjacent Parcels. Yerba Buena Gardens, to the west of the Project Area, is the closest such refuge. Therefore, no location-related significant effects would be likely in the Draft Plan Area or on the Adjacent Parcels.

For the above reasons, the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would not be expected to interfere substantially with the movement of native resident special-status bird species or with established native resident or migratory special-status wildlife corridors, or impede the use of native special-status wildlife nursery sites, and this impact would be less than significant.

Mitigation Measures: None required.

Although no significant impacts were identified, the following improvement measure is identified to reduce potential effects on birds from night lighting in the Project Area. Implementation of this measure would further reduce the Proposed Project’s less-than-significant impacts on residents and migratory birds.

Improvement Measure

I-BI-2: Night Lighting Minimization. To further reduce the less-than-significant effects on birds from night lighting, the San Francisco Planning Department could encourage buildings developed pursuant to the Draft Plan and Rezoning of Adjacent Parcels to implement bird-safe building operations to prevent and minimize bird strike impacts, including but not limited to the following measures:

- Reduce building lighting from exterior sources by:

²⁴ San Francisco Planning Department, *Standards for Bird-Safe Buildings*; see footnote 311, p.562. Available online at: http://www.sf-planning.org/ftp/files/publications_reports/bird_safe_bldgs/Standards%20for%20Bird%20Safe%20Buildings-%202011-1-11.pdf, accessed on April 19, 2012.

- Minimizing 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; and
- Utilizing minimum wattage fixtures to achieve required lighting levels.
- Reduce building lighting from interior sources by:
 - Dimming lights in lobbies, perimeter circulation areas, and atria;
 - Turning off all unnecessary lighting by 11:00 p.m. through sunrise, especially during peak migration periods (mid-March to early June and late August through late October);
 - Utilizing automatic controls (motion sensors, photo-sensors, etc.) to shut off lights in the evening when no one is present;
 - Encouraging the use of localized task lighting to reduce the need for more extensive overhead lighting;
 - Scheduling nightly maintenance to conclude by 11:00 p.m.; and
 - Educating building users about the dangers of night lighting to birds.

Impact BI-3: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would conflict with any applicable local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (Less than Significant)

The Draft Plan Area and Adjacent Parcels contain numerous trees. As defined by the City and County of San Francisco's Urban Forestry Ordinance, most of these are street trees and a few are located in backyards throughout the Draft Plan Area and Adjacent Parcels. There are no designated landmark trees within the Draft Plan Area or Adjacent Parcels. Some trees would need to be removed or relocated as part of individual projects that would be constructed under the Draft Plan or Rezoning of Adjacent Parcels. Removal of trees protected by City ordinance would not be a significant impact, as compliance with the City's Urban Forestry Ordinance would be required as a matter of course. New landscaping in association with development under the Draft Plan or Rezoning of Adjacent Parcels would include trees and shrubs and would serve to replace any trees removed.

In conclusion, compliance with the City and County of San Francisco's Urban Forestry Ordinance and new landscaping required as part of projects implemented under the Draft Plan and Rezoning of Adjacent Parcels would ensure a less-than-significant impact on local trees.

Mitigation: None required.

Impacts of the 350 Eighth Street Project (Project-Level Analysis)

Impact BI-4: The proposed 350 Eighth Street project would not result in a substantial adverse impact on species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game (CDFG) or United States Fish and Wildlife Service (USFWS). (Less than Significant with Mitigation)

The 350 Eighth Street project site currently contains a parking lot with no vegetation and three one-story structures, with a total of nine street trees along Eighth and Harrison Streets. The 350 Eighth Street project site and surrounding environs are developed and covered with structures and other impermeable surfaces. Because the 350 Eighth Street project site is in a developed urban area with no natural vegetation communities remaining, development of the 350 Eighth Street project would not affect any special-status plants.

As discussed under “Environmental Setting,” above, there is no habitat for special-status bats at the 350 Eighth Street project site. However, there are several special-status animals that may potentially use habitat at or adjacent to the 350 Eighth Street project site, including the American peregrine falcon, red-tailed hawk, Cooper’s hawk, and American kestrel. The loss of any active special-status species nest (i.e., removing a tree or shrub or demolishing a building containing a nest) would be significant.

The existing environment is one of high ambient disturbance due to human activity and noise generated by city and freeway traffic. The raptors listed above are not expected to nest within the project site but may use the area for foraging purposes. Impacts on raptors are discussed in detail under Impact BI-5 below.

As noted in the discussion for Impact BI-1, in addition to CEQA impacts, tree removal resulting in the destruction of active nests or mortality of migratory birds would violate the federal Migratory Bird Treaty Act and/or the California Fish and Game Code.

However, implementation of Mitigation Measure M-BI-1a, on page 4.L-14, which would require pre-construction surveys for special-status and migratory nesting birds prior to construction, would reduce impacts of the 350 Eighth Street Project on special-status birds and bird species otherwise protected under the Migratory Bird Treaty Act and/or the California Fish and Game Code to less-than-significant levels. (No bats are presumed to inhabit the existing structures on the site, as these structures are currently used in association with the Golden Gate Bridge, Highway, and Transportation District bus parking and inspection yard.)

Mitigation Measure: Implement **Mitigation Measure M-BI-1a**, Pre-Construction Special-Status Bird Surveys, discussed on page 4.L-14.

Significance after Mitigation: Less than Significant.

Impact BI-5: The proposed 350 Eighth Street project would not interfere substantially with the movement of native resident special-status bird species or with established native resident or migratory special-status wildlife corridors, or impede the use of native special-status wildlife nursery sites. (Less than Significant)

Impact BI-2, above, provides a background discussion of the issue of avian collisions.

The 350 Eighth Street project site currently contains street lights, parking lot lights, and building lights and is located in a generally urban setting, surrounded by other light sources. Therefore, existing lighting sources already provide a significant source of illumination at the project site. Overall, development under the 350 Eighth Street project is not expected to significantly increase the amount of light generated from the 350 Eighth Street project site over baseline levels. (See Section 4.B, Aesthetics, of this EIR for a discussion of lighting impacts.) Combined with the fact that most night-traveling migratory birds fly at heights greater than the building heights proposed for the 350 Eighth Street project (with a maximum height of 65 feet), lighting generated by the project is not expected to substantially increase the risk of avian collisions.

The 350 Eighth Street project site is surrounded by other urban development and is not proximate to, nor does it contain, large expanses of open space or water representing potentially attractive migratory bird stop-overs. Specific avian flight routes in and out of the area are not known, and there are little local data available on bird kills due to building collisions. However, special-status and otherwise protected resident and migratory birds are known to use the area for breeding and foraging.

The 350 Eighth Street project site is currently used primarily as a parking lot and has three small single-story buildings. The 350 Eighth Street project includes seven new buildings ranging in height from 53 to 65 feet in height. Increases in building heights and density throughout the 350 Eighth Street project site, as well as construction of new buildings, especially those with glass façades, or other large areas of glazing within 50 feet of ground level, could increase the risk for avian collisions with buildings. These effects could be exacerbated by increasing areas of vegetated open space in proximity to buildings, as the 350 Eighth Street project includes over 26,000 square feet of ground-level open space.

As described Chapter 2, Project Description, as currently proposed, the project buildings would be finished with a variety of exterior materials that would divide the façades into smaller visual elements. Exterior materials would include cement plaster (stucco), wood siding, painted metal panels, areas of glass curtain wall on all four street façades, translucent glass covering the ground floor at the corner of Eighth and Harrison Streets, and fritted (frosted or otherwise etched or marked) glass that would clad the office building at the corner of Harrison and Gordon Streets.

As discussed under “Environmental Setting,” above, the Board of Supervisors in September 2011 approved Planning Code amendments to incorporate bird-safe building standards into a new Section 139, Standards for Bird-Safe Buildings. In addition, in July 2011, the Planning Commission adopted *Standards for Bird-Safe Buildings*. Section 139 imposes requirements for both location-related hazards and feature-related hazards, as described above under Impact BI-2. Consistent with Section 139, the 350 Eighth Street project would not include free-standing glass walls, wind barriers, skywalks, balconies, or rooftop greenhouses with unbroken glazed segments that measure 24 square feet or larger. Additionally, as

depicted in **Figures 2-9** and **2-10**, although the 350 Eighth Street project would have glazing on all four street façades, as well as on the façades that face the interior of the project, glass would not be used in large unbroken segments that tend to pose the greatest threat of bird collisions. In particular, the building walls that would face the pocket park at Eighth and Ringold Streets would be faced with substantial amounts of stucco and metal panels, interspersed with glass panels.

Compliance with Planning Code Section 139 and the adopted *Standards for Bird-Safe Buildings* would ensure that impacts of the 350 Eighth Street project related to bird hazards would be less than significant.

Mitigation: None required.

Impact BI-6: The proposed 350 Eighth Street project would not conflict with any applicable local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (Less than Significant)

The 350 Eighth Street project site contains nine trees. As defined by the City and County of San Francisco's Urban Forestry Ordinance, these are street trees. There are no significant trees or designated landmark trees within the 350 Eighth Street project site. It is likely that all trees within the 350 Eighth Street project site would need to be removed or relocated as part of the 350 Eighth Street project. Removal of trees protected by City ordinance would not be a significant impact, as compliance with the City's Urban Forestry Ordinance would be required as a matter of course. As noted in Chapter 2, Project Description, the 350 Eighth Street project would include planting of street trees, in accordance with Planning Code requirements, and landscaping within the project site and at the publicly accessible pocket park at Eighth and Ringold Streets.

New landscaping associated with the 350 Eighth Street project would include trees and shrubs and would serve to replace any trees removed. Therefore, the 350 Eighth Street project would result in a less-than-significant impact on street trees and would not conflict with a local tree preservation policy or ordinance.

Mitigation: None required.

Cumulative Impacts

Impact C-BI: Implementation of the Proposed Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not make a considerable contribution to a significant cumulative impact on biological resources. (Less than Significant)

The Project Area is a nearly fully developed urban district with no remaining natural communities, wetlands, riparian areas, or other sensitive habitat. Past projects, including the development of civic facilities, residences, commercial and industrial areas, and infrastructure, have already caused substantial adverse cumulative effects on biological resources in the Project Area. For example, there are no

remaining natural communities within the Project Area and wildlife diversity is, consequently, greatly reduced from that found in areas with natural vegetation and less human activity.

Adoption of the Draft Plan, Rezoning of Adjacent Parcels, and implementation of the 350 Eighth Street Project, combined with past, present, and reasonably foreseeable projects, including the *Central Corridor Plan*, the 5M Project, Moscone East, and 801 Brannan Street/One Henry Adams Street Project, would therefore not be considered to have a significant cumulative impact on biological resources in the Project Area. The above impact analysis has shown that the Proposed Project, with all applicable mitigation measures, would result in only minor, less-than-significant impacts on biological resources. When considered relative to the existing cumulative impact on biological resources caused by past development, the Proposed Project would add only a minor, incremental contribution. The Proposed Project's contribution would not be cumulatively considerable, and therefore the cumulative effect of the Proposed Project's components on biological resources would be less than significant.

Mitigation: None required.

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4.M. Geology and Soils

This section describes the existing geology, soil conditions, and seismicity in the Project Area and the state and local regulations that would apply to implementing each of the three project components (the Draft Plan, Rezoning of Adjacent Parcels, and 350 Eighth Street project). The setting discussion describes existing local topography, geologic substrate, soil resources, and regional seismicity, including local geologic and seismic hazards that could affect structures associated with the three project components. The section then provides an analysis of the effects of the Proposed Project in relation to these geological and seismic conditions.

Environmental Setting

Regional Geology

The Project Area, which is made up of the *Western SoMa Community Plan Area* and Adjacent Parcels, and inclusive of the 350 Eighth Street project site, lies within the geologically complex region of California referred to as the Coast Ranges geomorphic province.¹ The Coast Ranges province lies between the Pacific Ocean and the Great Valley (Sacramento and San Joaquin Valleys) provinces and stretches from the Oregon border to the Santa Ynez Mountains near Santa Barbara. Much of the Coast Ranges province is composed of marine sedimentary deposits and volcanic rocks that form northwest-trending mountain ridges and valleys, running subparallel to the San Andreas Fault Zone. The relatively thick marine sediments dip east beneath the alluvium of the Great Valley. The Coast Ranges can be further divided into the northern and southern ranges which are separated by San Francisco Bay. San Francisco Bay lies within a broad depression created from an east-west expansion between the San Andreas and the Hayward fault systems. West of the San Andreas Fault lies the Salinian Block, a granitic core that extends from the southern end of the province to north of the Farallon Islands.

The Northern Coast Ranges are comprised largely of the Franciscan Complex or Assemblage, which consists primarily of graywacke, shale, greenstone (altered volcanic rocks), basalt, chert (ancient silica-rich ocean deposits), and sandstone that originated as ancient sea floor sediments. Franciscan rocks are overlain by volcanic cones and flows of the Quien Sabe, Sonoma, and Clear Lake volcanic fields.²

Project Area Geology

The Project Area is located on the northeast side of the San Francisco Peninsula, immediately west of Mission Bay. Elevations range from approximately 20 to 50 feet above mean sea level with a very gentle slope toward the east. According to mapping compiled by the United States Geological Survey (USGS), the underlying surficial sediments in the Project Area consist of Quaternary alluvial sediments, artificial

¹ A geomorphic province is an area that possesses similar bedrock, structure, history, and age. California has 11 geomorphic provinces.

² California Geological Survey (CGS), *California Geomorphic Provinces*, CGS Note 36, 2002. Available online at: http://www.conservation.ca.gov/cgs/information/publications/cgs_notes/note_36/Documents/note_36.pdf, accessed April 19, 2012.

fill, and beach/dune sands.³ Depending on the age of construction and site conditions, additional areas of engineered fill may be present throughout the Project Area. Bedrock in this area tends to be relatively deep and is generally not encountered during typical development construction.

Adjacent Parcels

The Adjacent Parcels are located in an area of general similar historical development as the 350 Eighth Street project site (discussed below) and would therefore be expected to have relatively similar underlying subsurface materials. The thicknesses and composition of fill materials would be expected to vary throughout the Adjacent Parcels but could include undocumented fills that are not up to current compaction standards. Bedrock would also be anticipated at great depths for these parcels.

350 Eighth Street Project Site

The preliminary geotechnical investigation conducted for the 350 Eighth Street project found that the site is generally underlain by fill materials consisting of loose to medium dense sand, clayey sand, and fine gravel.⁴ The fill generally extends to a depth of about 5 to 6.5 feet below ground surface (bgs), except at the southeast corner where 12 and 10.5 feet of fill was encountered. The fill is generally underlain by relatively clean sand (Dune sand) to a depth of about 35 to 40 feet bgs. The Dune sand is generally loose to medium dense to a depth of about 20 feet bgs. Below a depth of about 20 feet, the sand becomes dense to very dense. Beneath the clean sand is very loose to dense clayey and silty sand that extends to the maximum explored depth of 41.5 to 50 feet bgs. No occurrences of bedrock were encountered during the geotechnical investigation.

Soils

Soil surveying performed by the Natural Resources Conservation Service (NRCS) provides information on surface and near-surface soil materials in the Project Area. Within the Project Area, including the Adjacent Parcels and 350 Eighth Street project site, the soils generally comprise mixtures of urban land and orthent⁵ soils that form on alluvial materials.⁶ These soils have generally been reworked to varying degrees through development that has occurred over the years. Whatever natural soils may have existed are likely no longer present and the geotechnical engineering characteristics of the soils and undocumented fills can vary.

³ United States Department of Agriculture Natural Resource Conservation Service, formerly the United States Geological Survey (USGS), *Geologic Map of the San Francisco Bay Region*, W. Graymer¹, B.C. Moring¹, G.J. Saucedo², C.M. Wentworth¹, E.E. Brabb¹, and K.L. Knudsen, also available at http://pubs.usgs.gov/sim/2006/2918/sim2918_geolposter-hires.pdf, 2006.

⁴ Treadwell & Rollo, Incorporated, *Preliminary Geotechnical Investigation, 8th and Harrison Streets, San Francisco*, May 23, 2007.

⁵ Orthents are a soil type that is typically shallow and lacks a horizon development because it is located on a steep slope or derived from parent materials that contain no permanent weatherable materials.

⁶ National Resource Conservation Service (NRCS), *Web Soil Survey, San Francisco County*, <http://websoilsurvey.nrcs.usda.gov/app/>, viewed July 26, 2010.

Regional Faulting and Seismic Hazards

Seismicity

The Project Area is located in one of the most seismically active regions in the United States. The active faults in this region have produced measurable historic ground motion and movement. The USGS along with the California Geological Survey (CGS) and the Southern California Earthquake Center formed the 2007 Working Group on California Earthquake Probabilities to summarize the probability of one or more earthquakes of magnitude 6.7 or higher occurring in the state of California over the next 30 years. Accounting for the wide range of possible earthquake sources, it is estimated that the Bay Area has a 63-percent chance of experiencing such an earthquake.⁷ According to the working group, the individual faults posing the greatest threat to the Bay Area are the Hayward Fault, the San Andreas Fault, and the Calaveras Fault. Other principal faults capable of producing significant earthquakes in the Bay Area include the Concord-Green Valley, Marsh Creek-Greenville, and the San Gregorio Faults.

The Project Area is not located within an Alquist-Priolo Earthquake Fault Zone.⁸ The approximate distances of the Project Area the closest known mapped active faults are summarized below in **Table 4.M-1**. Each of these faults is briefly described below.

TABLE 4.M-1
ACTIVE FAULTS IN THE VICINITY OF THE PROJECT AREA

Fault	Approximate Distance and Direction from Project Area	Recency of Movement	Maximum Moment Magnitude ^a
San Andreas (Peninsula Section)	7 miles southwest	Historic	7.1
Hayward (Northern Section)	10 miles northeast	Historic	6.9
San Gregorio (Seal Cove Fault)	17 miles south	Holocene	7.3
Calaveras (Northern Section)	25 miles east	Historic	6.8
Concord-Green Valley (Avon Section)	25 miles northeast	Historic	6.9

^a Moment Magnitude (Mw) is related to the physical size of a fault and the type of motion during a fault rupture. It provides a physically meaningful measure of the size of a faulting event. The Maximum Moment Magnitude that a particular fault is reasonably capable of producing is derived from the joint CGS/USGS Probabilistic Seismic Hazard Assessment for the State of California.

SOURCE: Peterson, M.D., Bryant, W.A., Cramer, C.H., *Probabilistic Seismic Hazard Assessment for the State of California*, California Division of Mines and Geology Open-File Report issued jointly with United States Geological Survey, CDMG 96-08 and USGS 96-706, 1996.

⁷ United States Geological Survey (USGS) Working Group on California Earthquake Probabilities (WG07), Fact Sheet 2008-3027, *Forecasting California's Earthquakes – What Can We Expect in the Next 30 Years?* Available online at: <http://pubs.usgs.gov/fs/2008/3027/fs2008-3027.pdf>, 2008, accessed on April 20, 2012.

⁸ The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (revised in 1994) is the State law that addresses hazards from earthquake fault zones. As required by the Act, the State has delineated Earthquake Fault Zones (formerly Special Studies Zones) along known active faults in California where fault rupture hazards are considered most likely.

San Andreas Fault

The San Andreas Fault Zone, located about 7 miles southwest of the Project Area, is a major structural feature that forms at the boundary between the North American and Pacific tectonic plates. It is a strike-slip⁹ fault, extending from the Salton Sea in Southern California near the border with Mexico to north of Point Arena, where the fault trace continues out into the Pacific Ocean. The main trace of the San Andreas Fault through the Bay Area trends northwest from the Santa Cruz Mountains to the eastern side of the San Francisco Peninsula.

In the San Francisco Bay Area, the San Andreas Fault Zone was the source of the two major earthquakes in recent history that affected the San Francisco Bay region. The 1906 San Francisco earthquake was estimated at magnitude 7.9 and resulted in approximately 290 miles of surface fault rupture, the longest of any known continental strike-slip fault. Horizontal displacement along the fault approached 17 feet near the epicenter.¹⁰ The more recent 1989 Loma Prieta earthquake, with a magnitude of moment/magnitude (Mw) 6.9, was centered in the Santa Cruz Mountains and resulted in widespread damage throughout the Bay Area. The USGS Working Group on California Earthquake Probabilities identifies the San Andreas Fault as having a 21-percent chance of generating one or more earthquakes of magnitude 6.7 or greater in the next 30 years.¹¹

Hayward Fault

The Hayward Fault Zone, located 10 miles northeast of the Project Area, extends for 60 miles from San Pablo Bay in Richmond south to the San Jose area. The Hayward Fault has historically generated one sizable earthquake, in 1968, when a Richter magnitude 7 earthquake on its southern segment ruptured the ground for a distance of about 30 miles.¹² Lateral ground surface displacement during this event was at least 3 feet.

A characteristic feature of the Hayward Fault is its well-expressed and relatively consistent fault creep. Although large earthquakes on the Hayward Fault have been rare since 1868, slow fault creep has continued to occur and has caused measurable offset. Fault creep on the East Bay segment of the Hayward Fault is estimated at 9 millimeters per year (mm/yr).¹³ However, a large earthquake could occur on the Hayward Fault with an estimated Mw of about Mw 6.9 (see Table 4.M-1). The USGS Working Group on California Earthquake Probabilities identifies the combined Hayward–Rodgers Creek Fault

⁹ Refers to relative motion on either side of a fault that is primarily horizontal (as opposed to vertical).

¹⁰ Bryant, W.A., and Cluett, S.E., compilers, San Andreas fault zone database of the United States: United States Geological Survey website, <http://earthquakes.usgs.gov/regional/qfaults>, 2005.

¹¹ United States Geological Survey (USGS) Working Group on California Earthquake Probabilities (WG07), Fact Sheet 2008-3027, *Forecasting California's Earthquakes – What Can We Expect in the Next 30 Years?* Available online at: <http://pubs.usgs.gov/fs/2008/3027/fs2008-3027.pdf>, 2008, accessed on April 19, 2012.

¹² Bryant, W.A., and Cluett, S.E., compilers, *Fault number 55a, Hayward fault zone, Northern Hayward section, in Quaternary fault and fold database of the United States, ver 1.0: U.S. Geological Survey Open-File Report 03-417*, http://gldims.cr.usgs.gov/webapps/cfusion/Sites/qfault/qf_web_disp.cfm?qfault_or=1321&ims_cf_cd=cf&disp_cd=C, 2000.

¹³ Peterson, M.D., Bryant, W.A., Cramer, C.H., *Probabilistic Seismic Hazard Assessment for the State of California*, California Division of Mines and Geology Open-File Report issued jointly with U.S. Geological Survey, CDMG 96-08 and USGS 96-706, 1996. Available online at: <http://www.consrv.ca.gov/cgs/rghm/psha/ofr9608/Pages/index.aspx>, accessed on April 20, 2012.

Systems as having a 31-percent chance of generating one or more earthquake of magnitude 6.7 or greater in the next 30 years.¹⁴

Calaveras Fault

The Calaveras Fault, located approximately 25 miles east of the Project Area, is a major right-lateral strike-slip fault that has been active during the last 11,000 years. The Calaveras Fault is located in the eastern San Francisco Bay region and generally trends from north to south along the eastern side of the Oakland Hills into the western Diablo Range, eventually joining the San Andreas Fault Zone south of Hollister. The northern extent of the fault zone is somewhat speculative and could be linked with the Concord Fault.

There is a distinct change in slip rate and fault behavior north and south of the vicinity of Calaveras Reservoir. North of Calaveras Reservoir, the fault is characterized by a relatively low slip rate of 5 to 6 mm/yr and sparse seismicity. South of Calaveras Reservoir, the fault zone is characterized by a higher rate of surface fault creep that has been evidenced in historic times.

The Calaveras Fault has been the source of several moderate magnitude earthquakes and the probability of a large earthquake (greater than magnitude 6.7) is much lower than on the San Andreas or Hayward Faults. The USGS Working Group on California Earthquake Probabilities identifies the Calaveras Fault as having a 7-percent chance of generating one or more earthquakes of magnitude 6.7 or greater in the next 30 years.¹⁵

Concord-Green Valley Fault

The Concord-Green Valley Fault, located approximately 25 miles northeast of the Project Area, extends from Walnut Creek north to Wooden Valley (east of Napa Valley). Historical record indicates that no large earthquakes have occurred on the Concord or Green Valley Faults. However, a moderate earthquake of magnitude 5.4 occurred on the Concord Fault segment in 1955.

The Concord and Green Valley Faults exhibit active fault creep and are considered to have a small probability of causing a significant earthquake. The USGS Working Group on California Earthquake Probabilities identifies the Concord-Green Valley Fault as having a 3-percent chance of generating one or more earthquakes of magnitude 6.7 or greater in the next 30 years.¹⁶

San Gregorio Fault

The San Gregorio Fault, located approximately 17 miles south of the Project Area, is an active, structurally complex fault zone as much as 5 kilometers wide. The fault zone is mainly located offshore, west of San Francisco Bay and Monterey Bay, with onshore locations at promontories, such as Moss Beach, Pillar Point, Pescadero Point, and Point Año Nuevo. While there is no record of historic seismicity, the most recent earthquake along the San Gregorio Fault Zone is thought to have occurred after 1270 AD

¹⁴ United States Geological Survey (USGS) Working Group on California Earthquake Probabilities (WG07), Fact Sheet 2008-3027, *Forecasting California's Earthquakes – What Can We Expect in the Next 30 Years?* Available online at: <http://pubs.usgs.gov/fs/2008/3027/fs2008-3027.pdf>, 2008, accessed on April 20, 2012.

¹⁵ *Ibid.*

¹⁶ *Ibid.*

to 1400 AD, but prior to the arrival of Spanish missionaries in 1775 AD.¹⁷ The USGS Working Group on California Earthquake Probabilities identifies the San Gregorio Fault as having a 6-percent chance of generating one or more earthquakes of magnitude 6.7 or greater in the next 30 years.¹⁸

Surface Rupture

Surface rupture (or fault rupture) occurs when movement on a fault deep within the earth breaks through to the surface. Surface ruptures associated with the 1906 San Francisco earthquake extended for more than 260 miles, with displacements of up to 21 feet. However, not all earthquakes result in surface rupture. For instance, the Loma Prieta earthquake of 1989 caused major damage in the San Francisco Bay Area, but the fault movement did not break through to the ground surface.

Surface rupture almost always follows preexisting faults, which are zones of weakness. Rupture may occur suddenly during an earthquake or slowly in the form of a fault creep. Sudden displacements are more damaging to structures because they can suddenly displace structures and are accompanied by shaking. Fault creep is the slow rupture of the earth's crust. In developed areas, fault creep can offset and deform curbs, streets, buildings, and other structures that lie on the fault trace. Fault rupture is unlikely to occur in the Project Area due to the distance from known active faults.

Groundshaking

According to the Association of Bay Area Governments (ABAG) Shaking Intensity Maps and Information, the Project Area is located in an area subject to "very strong" to "violent" groundshaking (Modified Mercalli Intensity VIII to IX) from earthquakes along the entire San Andreas Fault (similar to the 1906 earthquake), "strong" to "very strong" ground shaking along the Northern San Gregorio Fault, and "strong" to "violent" ground shaking (Modified Mercalli Intensity VII to IX) for a magnitude 6.9 event on the northern and southern segments of the Hayward Fault.¹⁹

The intensity of earthquake-induced ground motions and the potential forces affecting structures within the Project Area can be described using peak ground accelerations, which are represented as a fraction of the acceleration of gravity (g).²⁰ The CGS estimates the peak ground accelerations for the 10-percent probability of exceedance in 50 years (475-year return period) at approximately 0.51 g.²¹ However, these estimates of peak ground accelerations are used primarily for formulating building codes and for designing buildings and are not intended for site-specific hazard analysis. Therefore, it would be

¹⁷ Bryant, W.A., and Cluett, S.E., compilers, Fault number 60a, San Gregorio fault zone, San Gregorio section, in Quaternary fault and fold database of the United States. Available online at: <http://earthquakes.usgs.gov/regional/qfaults>, 1999, accessed April 20, 2012.

¹⁸ United States Geological Survey (USGS) Working Group on California Earthquake Probabilities (WG07), Fact Sheet 2008-3027, *Forecasting California's Earthquakes – What Can We Expect in the Next 30 Years?* Available online at: <http://pubs.usgs.gov/fs/2008/3027/fs2008-3027.pdf>, 2008, accessed on April 20, 2012.

¹⁹ Association of Bay Area Governments (ABAG), *Earthquake Hazards Maps for San Francisco*. Available online at: <http://www.abag.ca.gov/cgi-bin/pickmapx.pl>, accessed on July 13, 2010.

²⁰ Acceleration of gravity (g) = 980 centimeters per second squared. 1.0 g of acceleration is a rate of increase in speed equivalent to a car traveling 328 feet from rest in 4.5 seconds.

²¹ California Geological Survey, *Probabilistic Seismic Hazards Ground Motion Page*. Available online at: <http://redirect.conservation.ca.gov/cgs/rghm/pshamap/pshamap.asp?Longitude=-122.425&Latitude=37.772>, accessed on July 13, 2010.

necessary to conduct a site-specific evaluation to estimate peak ground accelerations at a level suitable for individual project design.

Liquefaction

Liquefaction is a phenomenon in which a soil located below the groundwater surface loses a substantial amount of strength due to strong earthquake groundshaking. Recently deposited (geologically young) and relatively loose natural soils and uncompacted or poorly compacted fills are potentially susceptible to liquefaction. Dense natural soils and well-compacted fills have low susceptibility to liquefaction, while clayey soils and bedrock generally are not subject to liquefaction. Consequences of liquefaction include vertical settlement, lateral displacement, loss of load-bearing capacity for foundations, increased lateral loading on structures, and flotation of lightweight structures embedded in soil that liquefies.

According to a mapping compiled by the California Geological Survey (CGS), the majority of the Project Area, including the Adjacent Parcels and 350 Eighth Street project site, is located within a seismic hazard zone for liquefaction.²² The entire Project Area is also within a Special Geologic Study Area as shown in the Community Safety Element of the *San Francisco General Plan* (Map 4), and is designated as potentially liquefiable on a map titled *Zones of Liquefaction Potential, City and County of San Francisco*, published by the California Department of Conservation, Division of Mines and Geology (CDMG).

Earthquake-Induced Settlement

Settlement of the ground surface can be accelerated and accentuated by earthquakes. During an earthquake, settlement can occur as a result of the relatively rapid compaction and settling of subsurface materials (particularly loose, uncompacted, and variable sandy sediments above the water table) due to the rearrangement of soil particles during prolonged ground shaking. Settlement can occur both uniformly and differentially (i.e., where adjoining areas settle at different amounts). Areas underlain by artificial fill would be susceptible to this type of settlement. Given the geologic setting of the Project Area, this area could be subjected to earthquake-induced settlement.

Geologic Hazards

Slope Failure

Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, either triggered by static (i.e., gravity) or dynamic (i.e., earthquake) forces. Exposed rock slopes undergo rockfalls, rockslides, or rock avalanches, while soil slopes experience shallow soil slides, rapid debris flows, and deep-seated rotational slides. Slope stability can depend on a number of complex variables, including the geology, structure, and amount of groundwater, as well as external processes such as climate, topography, slope geometry, and human activity. The factors that contribute to slope movements include those that decrease the resistance in the slope materials and those that increase the stresses on the slope.

²² California Geological Survey (CGS), *Official Seismic Hazard Map, City and County of San Francisco Quadrangle*, November 17, 2000. Available online at: http://gmw.consrv.ca.gov/shmp/download/pdf/ozn_sf.pdf, accessed on April 19, 2012.

Landslides can occur on slopes of 15 percent or less, but the probability is greater on steeper slopes that exhibit old landslide features such as scarps, slanted vegetation, and transverse ridges. Landslides typically occur within slide-prone geologic units that contain excessive amounts of water or are located on steep slopes, or where planes of weakness are parallel to the slope angle.

The topography within the Project Area is relatively flat with a low likelihood of experiencing slope failure. The Project Area, including the Adjacent Parcels and 350 Eighth Street project site, is located outside of the “Potential Landslide Areas” mapped in the Community Safety Element of the *San Francisco General Plan*.²³

Expansive Soils

Expansive soils are characterized by their potential “shrink-swell” behavior. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in certain fine-grained clay sediments from the process of wetting and drying. Clay minerals such as smectite, bentonite, montmorillonite, beidellite, vermiculite, and others are known to expand with changes in moisture content. The higher the percentage of expansive minerals present in near-surface soils, the higher the potential for significant expansion. The greatest effects occur when there are significant or repeated moisture content changes. Expansions of 10 percent or more in volume are not uncommon. This change in volume can exert enough force on a building or other structure to cause cracked foundations, floors, and basement walls. Damage to the upper floors of the building can also occur when movement in the foundation is significant. Structural damage typically occurs over a long period of time, usually the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils.

Native soils within the Project Area are likely no longer present due to the history of development and probable reworking of site soils and placement of fills. Therefore, site-specific details of soil characteristics can only be determined through site-specific analysis, which is commonly done during a geotechnical investigation for individual projects. Characteristics can vary greatly depending on the time of development, with more recent development likely having used more current standards and older undocumented fills potentially having expansive properties.

Soil Erosion

Erosion is the wearing away of soil and rock by processes such as mechanical or chemical weathering, mass wasting, and the action of waves, wind, and underground water. Excessive soil erosion can eventually lead to damage of building foundations and roadways.

In the Project Area, areas that are susceptible to erosion are generally limited to those that would be exposed during the construction phase. Typically, the soil erosion potential is reduced once the soil is graded and covered with concrete, structures, or asphalt, or vegetated as part of landscaping.

²³ City and County of San Francisco, *San Francisco General Plan*, Community Safety Element, August 15, 1997. Available online at: http://www.sf-planning.org/ftp/General_Plan/Community_Safety_Element_2012.pdf, accessed on April 19, 2012.

Settlement

Settlement can occur from immediate settlement, consolidation, shrinkage of expansive soil, and liquefaction (discussed above). Immediate settlement occurs when a load from a structure or placement of new fill material is applied, causing distortion in the underlying materials. This settlement occurs quickly and is typically complete after placement of the final load. Consolidation settlement occurs in saturated clay from the volume change caused by squeezing out water from the pore spaces. Consolidation occurs over a period of time and is followed by secondary compression, which is a continued change in void ratio under the continued application of the load. Soils tend to settle at different rates and by varying amounts depending on the load weight or changes in properties over an area, which is referred to as differential settlement.

Some areas of the Project Area could be underlain by poorly engineered artificial fill at varying depths and thickness. Depending on the thicknesses, age of placement, and other factors, poorly engineered fill can be susceptible to settlement if not addressed appropriately.

Regulatory Setting

Applicable state and local regulations are discussed where relevant under "Impacts and Mitigation Measures" below. In addition, Chapter 3, Plans and Policies, provides information on other plans and policies that address geology, soils, and seismicity issues and are applicable to the Draft Plan Area and the Adjacent Parcels.

Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR, the Proposed Project would result in a significant impact with respect to geology, soils, and seismicity if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.);
 - Strong seismic ground shaking;
 - Seismic-related ground failure, including liquefaction; or
 - Landslides;
- Result in substantial soil erosion or the loss of topsoil;
- Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;

- Be located on expansive soil, as defined in the Uniform Building Code, creating substantial risks to life or property;
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater; or
- Change substantially the topography or any unique geologic or physical features of the site.

Approach to Analysis

The impact analysis below focuses on potential impacts of the Proposed Project related to seismicity and other geologic hazards. The evaluation considered potential development associated with the Proposed Project, current conditions within the Project Area, and applicable regulations and guidelines.

Based on the Proposed Project and the geographical location of each of the three project components (the Draft Plan Area, Adjacent Parcels, and 350 Eighth Street project site), the Proposed Project would not result in impacts related to the following criteria, and no impact discussion is provided for these criteria for the following reasons:

- ***Fault Rupture.*** The faults most susceptible to earthquake rupture are active faults, which are faults that have experienced surface displacement within the last 11,000 years. There are no active faults that cross the Project Area, and the nearest active fault is at least 7 miles away. Therefore, the potential for fault rupture to affect the Proposed Project is very low and there would be no impact.
- ***Landslides.*** The Project Area does not contain slopes that are susceptible to landslides or slope failure. The gentle sloping topography of the Project Area makes the potential for landslides or slope failure to affect any future development in the Project Area very low, and therefore this issue not discussed further.
- ***Wastewater Disposal.*** The Project Area is located within an urban area where all future development would be able to tie into existing wastewater infrastructure. Therefore, such development would not require the use of septic or other alternative disposal wastewater systems. Therefore, no impact associated with this hazard would occur.
- ***Change in Topography.*** The Project Area, including the Adjacent Parcels and the 350 Eighth Street project site, is located in a developed area that is relatively flat and would not be significantly altered by future development. There are no unique geologic features in the area, and therefore no impact is associated with this significance criterion.
- ***Collapsible Soils.*** Soils that are susceptible to collapse are typically found in regions outside of the Project Area. Collapsible soils are most often encountered in arid climates, where wind and intermittent streams deposit loose, low-density materials. When placed under new loading or with the addition of water that reaches deeper than under normal conditions, these soils can collapse, causing structural damage. These conditions or soils are not found in the Project Area, however, and therefore there is no potential for collapsible soils. Therefore, this issue is not discussed further in this section.

It is noted that transportation and street network improvements that would be implemented as part of the Draft Plan would not have any impacts on geology and soils, as they would not result in any of the

impacts listed under “Significance Criteria,” above. For this reason, these impacts are not discussed any further in this section.

Impacts of the Western SoMa Community Plan and Rezoning of Adjacent Parcels (Program-Level Analysis)

Impact GE-1: In the event of a major earthquake in the region, groundshaking and/or localized liquefaction would not cause significant damage, destruction or injury to development anticipated under either the Draft Plan or the Rezoning of Adjacent Parcels. (Less than Significant)

In the Project Area, underlying deposits generally consist of alluvial deposits of varying thicknesses with no near-surface occurrences of bedrock. In general, groundshaking tends to be more severe in softer sediments such as alluvial deposits where surface waves can be amplified, causing a longer duration of groundshaking compared to bedrock materials. Therefore, throughout the Project Area, there is a potential for new development to experience substantial groundshaking. The intensity of such an event would depend on the causative fault and the distance to the epicenter, the magnitude, the duration of shaking, and the characteristics of the underlying geologic materials.

According to mapping compiled by the California Geological Survey, with the exception of small areas at the southern end, the majority of the Project Area and vicinity is located in an area considered to have a high potential for liquefaction. Development in areas located within a seismic hazard zone for liquefaction would be required to adhere to the requirements of the Seismic Hazards Act and Special Publication 117 which contains protocols for evaluating and mitigating potential liquefaction hazards. In general, determining the actual potential for liquefaction requires site-specific data that is analyzed on a case-by-case basis. Unreinforced masonry buildings and other buildings constructed prior to the 1930s that have not undergone seismic upgrades would be expected to incur the greatest structural damage. Damage from earthquake-induced ground failure could be high in buildings constructed on improperly engineered fills or saturated alluvial sediments that have not received adequate compaction or treatment.

For newly constructed structures within the Draft Plan Area or on the Adjacent Parcels, all of the aforementioned seismic hazards can generally be avoided through the application of current industry standard geotechnical practices and seismic structural design according to the requirements found in the most recent version of the San Francisco Building Code and Special Publication 117, where applicable. All final building plans would be reviewed by the Department of Building Inspection (DBI) prior to issuance of a grading permit. Potential geologic hazards including groundshaking and liquefaction would be ameliorated during the DBI permit review process. In reviewing building plans, the DBI refers to a variety of information sources to determine existing hazards and assess requirements for avoiding or minimizing hazards. Sources reviewed include maps of Special Geologic Study Areas in San Francisco as well as the building inspectors’ working knowledge of areas of special geologic concern. For any development proposal in an area of liquefaction potential, the DBI will, in its review of the building permit application, require the project sponsor to prepare a geotechnical report that assesses the nature and severity of the hazard(s) on the site and recommends project design and construction features that would reduce the hazard(s). To ensure compliance with all San Francisco Building Code provisions regarding structural safety, when DBI reviews the geotechnical report and building plans for a proposed

project, it will determine necessary engineering and design features for the project to reduce potential damage to structures from groundshaking and landslides. Therefore, the potential damage to structures from geologic hazards on a project site would be ameliorated through the DBI requirement for a geotechnical report and review of the building permit application. Any changes incorporated into the foundation design required to meet the San Francisco Building Code standards that are identified as a result of the DBI permit review process would constitute minor modifications of the project and would not require additional environmental analysis. Although damage and injury cannot be completely avoided during a major seismic event, adherence to Building Code requirements would reduce the potential damage and personal injury to what is generally recognized to be an acceptable level. Therefore this would be a less-than-significant impact.

In general, the implementation of the Draft Plan or Rezoning of Adjacent Parcels would have no impact related to groundshaking or liquefaction. The existing structures and any new development that would be encouraged by these two project components would continue to be susceptible to the same seismic and geologic hazards that are currently present under existing conditions. The Draft Plan and the Rezoning of Adjacent Parcels would not alter Building Code requirements nor affect existing hazards. Therefore, neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would result in significant damage, destruction, or injury to future development anticipated under these programs due to groundshaking and/or localized liquefaction, and this impact would be less than significant.

Mitigation: None required.

Impact GE-2: New development anticipated under the Draft Plan and the Rezoning of Adjacent Parcels would involve grading and other ground-disturbing construction activities but would not expose soils to significant erosion or loss of topsoil. (Less than Significant)

The majority of the Draft Plan Area and the Adjacent Parcels is developed and covered by impervious surface such as asphalt, buildings, and concrete. The pervious areas are generally landscaped and vegetated, which reduces the potential for erosion and loss of topsoil. Neither the Draft Plan nor the Rezoning of Adjacent Parcels would have direct impacts related to erosion or loss of topsoil, since neither proposes demolition or construction activities. However, development encouraged by the Draft Plan or the Rezoning of Adjacent Parcels could require removal of the existing cover, thereby potentially exposing underlying soils to the effects of wind and water. The relatively flat topography of the Draft Plan Area and Adjacent Parcels generally reduces the potential for erosion and loss of topsoil during construction activities. Nonetheless, areas of the Draft Plan Area and Adjacent Parcels that are subject to concentrated runoff, or areas of unprotected piles of bare soil, would still pose erosion hazards if not adequately protected. Following construction, any new development would include covering any exposed soils with asphalt, a new structure, or vegetation, which would reduce the potential for erosion substantially.

Soils can generally be protected during construction using well-established erosion control measures. Every construction project in the state of California that causes a disturbance of 1 acre or more of soil through grading, clearing, and/or excavation is subject to the General Construction Stormwater Permit

(General Construction Permit), also referred to as the General Permit, approved by the State Water Resources Control Board. In order to complete the General Permit application, the applicant must first submit a Notice of Intent to obtain coverage under the General Permit. This General Permit requires dischargers to develop and implement a Storm Water Pollution Prevention Plan (SWPPP), which specifies the Best Management Practices (BMPs) that would prevent construction pollutants from contacting storm drains, with the intent of keeping all products of erosion from moving off-site into receiving waters. Furthermore, the SWPPP would also include BMPs to control erosion associated with grading, trenching, and other ground surface-disturbing activities. (See also discussion of the SWPPP in Section 4.N, Hydrology and Water Quality.) With adherence to the requirements of the General Construction Permit, where applicable, construction encouraged by the Draft Plan or the Rezoning of Adjacent Parcels would not result in significant exposure of soils to erosion or loss of topsoil and this impact would be less than significant.

Mitigation: None required.

Impact GE-3: New development anticipated under the Draft Plan and the Rezoning of Adjacent Parcels could be located on soils that are unstable or could become unstable, but it would not be subject to significant lateral spreading or subsidence. (Less than Significant)

As discussed above, the Draft Plan Area and Adjacent Parcels are currently largely developed, and most of the near-surface soils have likely been reworked to some degree as part of past construction. Neither the Draft Plan nor the Rezoning of the Adjacent Parcels would have direct impacts related to unstable soils, lateral spreading, or subsidence, since neither of these project components proposes actual construction or changes in existing loading on site soils. However, the adoption of the Draft Plan and the Rezoning of Adjacent Parcels could create incentives for individual projects that could be located on unstable soils.

Generally, prior to laying a foundation or roadway, the site soils are prepared or compacted in accordance with the building code requirements. Older structures were in general built to less stringent codes when compared to recent standards, so conditions would likely vary throughout the Draft Plan Area and on the Adjacent Parcels. However, site preparation conducted according to current standards would likely improve the stability of soils throughout the Draft Plan Area and on the Adjacent Parcels.

Standard geotechnical practices include evaluating subsurface soils and identifying engineering properties as well as providing appropriate measures to prepare underlying soils for a stable foundation of a planned improvement. These geotechnical investigations routinely evaluate the potential for unstable soils, lateral spreading, and subsidence. Lateral spreading is related to liquefaction, which is discussed above. Lateral spreading can occur on gentle slopes but depends on site-specific conditions, such as the liquefaction potential of soils underlying the subject property. Evaluation of these conditions is a standard component of a geotechnical investigation that would be required for any new development within the Draft Plan Area or on any of the Adjacent Parcels. As noted above, the areas that are within the seismic hazard zone for liquefaction would be required to adhere to the requirements of Special

Publication 117. Subsidence is commonly experienced on alluvial materials or fills if not engineered appropriately. Placement of compacted fills or design of foundation systems to reduce the effects of subsidence are within current standard practices and are also required to meet the criteria of the San Francisco Building Code.

For all the potential geologic hazards mentioned here, the use of standard geotechnical practices through a required geotechnical investigation and implementation of building code requirements are proven means of reducing such hazards to what is generally recognized to be an acceptable level. With implementation of these requirements, any impacts related to unstable soils, lateral spreading, or subsidence would be less than significant.

Mitigation: None required.

Impact GE-4: New development anticipated under the Draft Plan and the Rezoning of Adjacent Parcels could be located on expansive soils, but would not create substantial risks to life or property. (Less than Significant)

Neither the Draft Plan nor the Rezoning of Adjacent Parcels would have direct impacts related to expansive soils, since no actual construction is proposed as part of these two project components. However, the adoption of the Draft Plan and the Rezoning of Adjacent Parcels could create incentives for individual projects that could be located on expansive soils.

Typically, soils that exhibit expansive characteristics are found within the upper 5 feet of ground surface. Over a long-term exposure to wetting and drying cycles, expansive soils can experience volumetric changes. The effects of expansive soils could damage foundations of above-ground structures, paved roads and streets, and concrete slabs. Expansion and contraction of soils, depending on the season and the amount of surface water infiltration, could exert enough pressure on structures to result in cracking, settlement, and uplift.

Expansive soils could be located within the Draft Plan Area and on the Adjacent Parcels. However, the presence of expansive soils can only be determined through site-specific laboratory analysis of soil samples. The identification of expansive soils is standard practice for a geotechnical investigation, which would be required for all new construction within the Draft Plan Area and on the Adjacent Parcels. Replacement of expansive soils with engineered fill or addition of soil amendments are effective means of reducing the impacts of expansive soils. Therefore, implementation of standard geotechnical engineering practices and building code requirements would reduce impacts from expansive soils to less-than-significant levels.

Mitigation: None required.

Impacts of the 350 Eighth Street Project (Project-Level Analysis)

Impact GE-5: In the event of a major earthquake in the region, groundshaking and/or localized liquefaction could cause damage, destruction, or injury to the 350 Eighth Street project and residents, but this impact would be less than significant. (Less than Significant)

Similar to the Draft Plan Area and Adjacent Parcels discussed above, the 350 Eighth Street project site is susceptible to a significant earthquake event from the San Andreas Fault or one of the other active faults in the region. In general, groundshaking tends to be more severe in softer sediments such as alluvial deposits such as those underlying the project site. During a major earthquake on a segment of one of the nearby faults, strong to very strong shaking is expected to occur at the site.²⁴ Strong shaking during an earthquake can result in ground failure such as that associated with soil liquefaction, lateral spreading, and cyclic densification.

The 350 Eighth Street project site is located in a seismic hazard zone for liquefaction according to the CGS. The preliminary geotechnical investigation for the project site confirmed the presence of potentially liquefiable layers underlying the site.²⁵ Based on site-specific data, if the site is not engineered adequately, ground surface settlement of up to about 2.5 inches could occur as a result of liquefaction during a moderate to large earthquake on one of the nearby faults²⁶ However, the proposed 350 Eighth Street project would be required to adhere to the Seismic Hazards Act and Special Publication 117, which include standards for minimizing liquefaction hazards.

For the 350 Eighth Street project site, all of the aforementioned seismic hazards can generally be minimized through the application of current industry standard geotechnical practices and building code requirements as detailed in Impact GE-1 above. The 350 Eighth Street project would incorporate either a mat foundation or a deep foundation system as recommended by the geotechnical engineering firm during its preliminary analysis.²⁷ All final building plans would be reviewed by DBI prior to issuance of a grading permit. Potential geologic hazards including groundshaking and liquefaction would be ameliorated during the DBI permit review process. To ensure compliance with all San Francisco Building Code provisions regarding structural safety, when DBI reviews the geotechnical report and building plans for a proposed project, it will determine necessary engineering and design features for the project to reduce potential damage to structures from groundshaking and landslides. Therefore, the potential damage to structures from geologic hazards on a project site would be ameliorated through the DBI requirement for a final geotechnical report and review of the building permit application. Although damage and injury cannot be completely avoided during a major seismic event, adherence to building code requirements would reduce the potential damage and personal injury to what is generally recognized to be an acceptable level. Therefore this would be a less-than-significant impact.

²⁴ Treadwell & Rollo, Incorporated, *Preliminary Geotechnical Investigation, 8th and Harrison Streets, San Francisco*, May 23, 2007.

²⁵ *Ibid.*

²⁶ *Ibid.*

²⁷ *Ibid.*

Mitigation: None required.

Impact GE-6: Development at the 350 Eighth Street project site would involve grading and other ground-disturbing construction activities that could expose soils to erosion and loss of topsoil, but this impact would be less than significant. (Less than Significant)

The 350 Eighth Street project site is currently developed, with a majority of the land area covered by impervious surface such as asphalt, buildings, and concrete. New development would require removing the existing cover, thereby potentially exposing underlying soils to the effects of wind and water. The relatively flat topography of the project site generally reduces the potential for erosion and loss of topsoil during construction activities. Nonetheless, the underlying soils could be subject to erosion during construction. Once the site is covered by asphalt or a new structure, or vegetated at the conclusion of construction, the resulting potential for erosion would be substantially reduced.

Soils can generally be protected during construction using well-established erosion control measures. Every construction project in the state of California that causes a disturbance of 1 acre or more of soil through grading, clearing, and or excavation is subject to the General Construction Stormwater Permit (General Construction Permit), also referred to as the General Permit, adopted by the State Water Resources Control Board. The 350 Eighth Street project site occupies approximately 146,300 square feet (roughly 3.3 acres) in area, and the proposed structures would occupy a footprint of approximately 78,500 square feet. Therefore, the proposed 350 Eighth Street project would be subject to the General Construction Permit. (See also discussion of the SWPPP in Section 4.N, Hydrology and Water Quality.) With adherence to the requirements of the General Construction Permit, where applicable, impacts from grading and other ground-disturbing construction activities that could expose soils to erosion and loss of topsoil would be less than significant.

Mitigation: None required.

Impact GE-7: Development on the 350 Eighth Street project site could be located on soils that are unstable or could become unstable, but it would not be subject to significant lateral spreading or subsidence. (Less than Significant)

As discussed above, the 350 Eighth Street project site is currently largely developed, and most of the near-surface soils have likely been reworked to some degree as part of construction. However, site preparation conducted according to current standards would likely improve the stability of soils throughout the 350 Eighth Street project site.

Standard geotechnical practices include evaluating subsurface soils and identifying engineering properties, as well as providing appropriate mitigations to prepare underlying soils for a stable foundation of a planned improvement. For the 350 Eighth Street project, the estimated amount of

settlement for the project site is 2.5 inches.²⁸ Lateral spreading is related to liquefaction, which is discussed above. Lateral spreading can occur on gentle slopes but depends on site-specific conditions, such as the liquefaction potential of soils underlying the subject property. Evaluation of these conditions is a standard component of a final design-level geotechnical investigation that would be required for the project site. As noted above, the proposed improvements would be required to adhere to the requirements of Special Publication 117. Subsidence is commonly experienced on alluvial materials or fills if not engineered appropriately. Placement of compacted fills or design of foundation systems to minimize the effects of subsidence are within current standard practices and also required to meet the criteria of the San Francisco Building Code.

For all the potential geologic hazards mentioned here, the use of standard geotechnical practices through a required geotechnical investigation and implementation of building code requirements are proven means of reducing the potential for significant damage. With implementation of these requirements, the 350 Eighth Street project's impacts related to unstable soils, lateral spreading, and subsidence would be less than significant.

Mitigation: None required.

Impact GE-8: The 350 Eighth Street project site could be located on expansive soils, but would not create significant risks to life or property. (Less than Significant)

As noted above, the effects of expansive soils could damage foundations of above-ground structures, paved roads and streets, and concrete slabs. Expansion and contraction of soils, depending on the season and the amount of surface water infiltration, could exert enough pressure on structures to result in cracking, settlement, and uplift. The presence of Dune sand at the 350 Eighth Street project site indicates a low probability for expansion, and the placement of engineered fill as recommended by the geotechnical engineer would reduce any impact on the proposed structure from expansive soils to a less-than-significant level. In addition, implementation of the San Francisco Building Code requirements as approved by DBI during its review process would reduce the impact from expansive soils to an acceptable level. Therefore, the 350 Eighth Street project would have a less-than-significant impact with regard to expansive soils.

Mitigation: None required.

²⁸ *Ibid.*

Cumulative Impacts

Impact C-GE: Implementation of the Proposed Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute considerably to a significant cumulative geology and soils impact. (Less than Significant)

Other development and in the vicinity, including the *Central Corridor Plan*, the 5M Project, Moscone East, and 801 Brannan Street/One Henry Adams Street Project, would be required to implement similar grading and geotechnical engineering measures in accordance with the most recent version of the California Building Code. The Proposed Project, combined with other foreseeable development in the vicinity, would be expected to result in increased population and development in an area susceptible to seismic risks and hazards. While the number of people visiting, living, and working in the area would increase incrementally, exposing additional people to seismic and geologic hazards, the risk to people and property would be reduced through the upgrading or demolishing of older buildings that were constructed under less stringent building code requirements. Older buildings would be seismically retrofitted and newer buildings would be constructed to stricter building codes. All of the existing and foreseeable projects in the vicinity would be required to implement measures similar to those described for the Proposed Project above and adhere to all federal, state, and local programs, requirements, and policies pertaining to building safety and construction permitting. All projects would be required to adhere to the San Francisco Building Code and the Seismic Hazards Act. Therefore, the Draft Plan, Rezoning of Adjacent Parcels, and 350 Eighth Street project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute considerably to a significant cumulative geology and soils impact by exposing people or structures to risk related to geologic hazards, soils, and/or seismic conditions.

Mitigation: None required.

4.N. Hydrology and Water Quality

This section describes the existing hydrological conditions in the Project Area and includes a discussion of surface water and groundwater resources, including water quality, flooding, and stormwater runoff. The environmental setting subsection is followed by a discussion of the regulatory framework that would apply to the implementation of the Draft Plan, Rezoning of the Adjacent Parcels, and 350 Eighth Street project. A discussion of impacts is provided, along with appropriate mitigation measures where applicable.

Environmental Setting

San Francisco Bay

San Francisco Bay was created by tectonic forces that produced a natural topographical depression. The resultant estuarine environment receives saltwater inputs from the Pacific Ocean through the Golden Gate, and freshwater inputs from the Sacramento-San Joaquin Delta to the northeast as well as various other tributary rivers and creeks located around the Bay.

The Project Area lies within the South Bay Planning Area of the San Francisco Bay Basin Hydrologic Region. This hydrologic unit is divided into a number of small watersheds that are defined by the natural topographic features of the region. A series of linear drainage basins trending generally northeast to southwest extend from the higher hills and drain toward San Francisco Bay.

Various contaminants are transported into the Bay by an assortment of sources: urban uses, industrial outfalls, municipal wastewater outfalls, municipal stormwater, upstream farming, upstream historic and current mining discharges, legacy pollutants,¹ and various other pollutant sources. Water quality pollutants contained in the Bay at detectable levels include trace metals, pesticides, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), algae blooms/low dissolved oxygen, and sediment contamination. Pollutant levels are variable seasonally and annually, dependent upon their specific source and degradation characteristics. Some contaminants, such as ammonia, copper, and legacy pesticides, have decreased over recent years due to cleanup efforts and natural attenuation.²

Project Area Conditions

Surface Water, Drainage, and Stormwater

There are no streams or other major surface water features located within the Project Area. Drainage is provided by an existing storm drain system that captures and collects stormwater into a piped system and conveys flows, combined with sanitary sewer flows, toward a wastewater treatment plant before

¹ Legacy pollutants are water quality constituents that are considered harmful to human health or the environment, that were historically emitted by industry or other human activities, and that are in general banned or significantly restricted from current usage. Examples include mercury, lead, polychlorinated biphenyls, and dichlorodiphenyltrichloroethane.

² Regional Monitoring Program for Water Quality in the San Francisco Estuary. The Pulse of the Estuary, Monitoring and Managing Water Quality in the San Francisco Bay. September 2009 (hereinafter "RMP 2009"). Available online at: http://www.sfei.org/rmp/pulse/2009/RMP_Pulse09_no583_final4web.pdf, accessed on April 16, 2010.

discharging into San Francisco Bay. In the Project Area, all stormwater and wastewater are directed to the Southeast Water Pollution Control Plant. During periods of heavy rain, drainage requirements may exceed the capacity of the existing storm drain system, causing localized flooding or exceedances at the treatment plant that result in discharges to the Bay without full treatment.

Groundwater

The underlying groundwater of the Project Area is located in the Downtown San Francisco groundwater basin within the San Francisco Bay Basin Hydrologic Region. The Downtown San Francisco groundwater basin occupies much of the northeastern portion of the San Francisco peninsula and is one of five basins in the eastern part of San Francisco, each separated from the other by bedrock ridges.³ The groundwater basin is made up of shallow unconsolidated alluvium underlain by less permeable bedrock within the watershed located east and northeast of the Twin Peaks area, including Nob and Telegraph Hills to the north and Potrero Point to the east, as well as most of the Downtown area including the proposed Project Area. Bedrock outcrops along much of the ridge form the northeastern and southern basin boundaries. In general, groundwater flow is northeast, following the topography. Average precipitation within the basin is approximately 24 inches per year. Groundwater within the basin is not used for water supply, and therefore little data are available regarding its characteristics. However, groundwater quality is subject to high concentrations of nitrates and elevated chloride, boron, and total dissolved solids concentrations.⁴ High nitrate levels are attributed to groundwater recharge from sewer pipe leakage and possibly to fertilizer introduced by irrigation return flows. Elevated chloride and total dissolved solids (TDS) levels are most likely due to a combination of leaky sewer pipes, historic and current seawater intrusion, and connate water.

Flooding

Flood risk assessment and some flood protection projects are conducted by federal agencies including the Federal Emergency Management Agency (FEMA) and the U.S. Army Corps of Engineers (Corps). The flood management agencies and cities implement the National Flood Insurance Program (NFIP) under the jurisdiction of FEMA and its Flood Insurance Administration. Currently, the City and County of San Francisco does not participate in the NFIP and no flood maps are published for the city. However, FEMA is preparing Flood Insurance Rate Maps (FIRMs) for the City and County of San Francisco for the first time. FIRMs identify areas that are subject to inundation during a flood having a 1-percent chance of occurrence in a given year (also known as a “base flood” or “100-year flood”). FEMA refers to the floodplain that is at risk from a flood of this magnitude as a special flood hazard area (SFHA).

Because FEMA has not previously published a FIRM for the City and County of San Francisco, there are no identified SFHAs within San Francisco’s geographic boundaries. FEMA has completed the initial phases of a study of the San Francisco Bay. On September 21, 2007, FEMA issued a preliminary FIRM of San Francisco for review and comment by the City. The City has submitted comments on the preliminary FIRM to FEMA. FEMA anticipates publishing a revised preliminary FIRM sometime in 2012, after

³ California Department of Water Resources. California’s Groundwater Bulletin 118, Update 2003 (hereinafter “DWR, 2003”). Available online at: http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/2-40.pdf, accessed on August 3, 2010.

⁴ *Ibid.*

completing the more detailed analysis that was requested by the Port of San Francisco and City staff. After reviewing comments and appeals related to the revised preliminary FIRM, FEMA will finalize the FIRM and publish it for flood insurance and floodplain management purposes. Because FEMA has not yet published a FIRM for the city, the City Administrator's Office has created an "Interim Floodplain Map" based on preliminary data provided by FEMA showing floodplains within the city.

FEMA has tentatively identified SFHAs along the city's shoreline in and along San Francisco Bay consisting of Zone A (in areas subject to inundation by tidal surge) and Zone V (areas of coastal flooding subject to wave hazards).⁵ A small portion of the *Western SoMa Community Plan Area*—part of the block bounded by Brannan, Townsend, Fifth, and Sixth Streets—is within Zone A. The remainder of the Project Area (including the Adjacent Parcels and the 350 Eighth Street project site) is not within a SFHA, according to both the preliminary FEMA maps and the City's Interim Floodplain Map.⁶

On June 10, 2008, legislation was introduced at the San Francisco Board of Supervisors to enact a floodplain management ordinance to govern new construction and substantial improvements in flood-prone areas of San Francisco, and to authorize the City's participation in the NFIP upon passage of the ordinance. Specifically, the floodplain management ordinance, which is codified in Chapter 2, Article XX of the City's Administrative Code, includes a requirement that any new construction or substantial improvement of structures in a designated flood zone must meet the flood damage minimization requirements in the ordinance. The NFIP regulations allow a local jurisdiction to issue variances to its floodplain management ordinance under certain narrow circumstances, without jeopardizing the local jurisdiction's eligibility in the NFIP. However, the particular projects that are granted variances by the local jurisdiction may be deemed ineligible for federally backed flood insurance by FEMA.

The floodplain management ordinance was amended in 2010, and currently the Department of Public Works and other applicable City departments and agencies have begun implementation for new construction and substantial improvements in areas shown on the Interim Floodplain Maps.

Sewer Lines

The San Francisco Public Utilities Commission (SFPUC) has identified large areas of the South of Market neighborhood that are prone to flooding during wet weather—and sometimes during dry weather—because streets and/or building basements are below the grade of the adjacent sewer lines, which transport both wastewater and storm water. As shown on **Figure 4.N-1**, p. 4.N-4, this flood-prone zone includes most of the Project Area, including the 350 Eighth Street project site and some of the Adjacent Parcels (those located between Seventh and Eighth Streets). The SFPUC, as part of the building permit review process of the Department of Building Inspection (DBI), reviews project plans and makes recommendations about how to prevent future flooding of individual properties. Requirements may

⁵ City and County of San Francisco, Office of the City Administrator, National Flood Insurance Program Flood Sheet. Available online at: <http://sfgsa.org/index.aspx?page=828>, accessed on September 23, 2010.

⁶ Federal Emergency Management Agency, Preliminary Flood Insurance Rate Map, City and County of San Francisco, California, Panel 120A, September 21, 2007. Available online at <http://sfgsa.org/index.aspx?page=828>, accessed on September 23, 2010; San Francisco Interim Floodplain Map, Northeast, Final Draft, July 2008. Available online at: <http://sfgsa.org/Modules/ShowDocument.aspx?documentid=1785>, accessed on September 23, 2010.



SOURCE: San Francisco Department of Public Works

2008.0877E and 2007.1035E: Western SoMa Community Plan,
Rezoning of Adjacent Parcels, and 350 Eighth Street Project

Figure 4.N-1
Flood-Prone Area

include provision of a pump station for the sewage flow, raised elevation of entryways, and/or special sidewalk construction and the provision of deep gutters.

Tsunami and Seiche

Map 6 of the *San Francisco General Plan* Community Safety Element indicates areas subject to 20-foot runup waves that could be caused by a tsunami. However, according to this map, the entire Project Area is located well inland and out of any inundation hazard area.

A seiche is defined as a surface water free or standing wave oscillation that is contained by an enclosed basin. Seiche is initiated by some event occurring within the enclosed basin – typically an earthquake or other mass movement (e.g., subsurface landslide), which results in a sloshing of water within the enclosed basin. San Francisco Bay is partially enclosed, with outlets to San Pablo Bay as well as the Pacific Ocean via the Golden Gate, and is relatively shallow, with a mean depth of approximately 27.6 feet (calculated from USGS, 2007).⁷ Geologic-induced seiche events have not been documented in San Francisco Bay. In addition, the Project Area is located sufficiently inland to be out of any potential inundation area by a seiche wave.

Sea Level Rise

Maps published by the Bay Conservation and Development Commission (BCDC) indicate that, with a potential sea level rise of 55 inches (4.6 feet)—the anticipated rise in sea level by year 2100 due to global warming—areas of San Francisco along the Bay shoreline could be inundated.⁸ The areas of potential inundation indicated on the BCDC maps include portions of the Project Area, generally including the area noted above on the block bounded by Brannan, Townsend, Fifth, and Sixth Streets, as well as an area north and south of Harrison Street between Fifth and Sixth Streets. The Adjacent Parcels and the 350 Eighth Street project site are not within the boundaries of this potential inundation area.

Regulatory Setting

Federal

Executive Order 11988

Under Executive Order 11988, FEMA is responsible for management of floodplain areas defined as the lowland and relatively flat areas adjoining inland and coastal waters subject to a 1-percent or greater chance of flooding in any given year (the 100-year floodplain). FEMA requires that local governments covered by federal flood insurance pass and enforce a floodplain management ordinance that specifies minimum requirements for any construction within the 100-year floodplain. As discussed previously, FEMA has not prepared a final FIRM map designating 100-year floodplains in the City and County of San Francisco.

⁷ United States Geological Survey. San Francisco Bay Bathymetry 2007. Available at: <http://sfbay.wr.usgs.gov/sediment/sfbay/geostat.html>. Viewed on April 19, 2010.

⁸ Bay Conservation and Development Commission, “Shoreline Areas Vulnerable to Sea Level Rise: Central Bay.” Available on the internet at: http://www.bcdc.ca.gov/planning/climate_change/climate_change.shtml. Viewed on September 23, 2010.

Clean Water Act

The Clean Water Act (CWA) (33 USC 1251–1376) is the major federal legislation governing water quality. The objective of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” Important and applicable sections of the CWA are:

- Sections 303 and 304, which provide for water quality standards, criteria, and guidelines. The state implements these sections through the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB), as discussed in greater detail below.
- Section 401, which requires an applicant for any federal permit that proposes an activity that may result in a discharge to “waters of the United States” to obtain certification from the state that the discharge will comply with other provisions of the CWA. In California, certification is provided by the SWRCB.
- Section 402, which establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredge or fill material) into waters of the United States. In California, this permit program is administered by the Regional Water Quality Control Boards, and is discussed in detail below. Anti-backsliding requirements provided for under CWA Sections 402(o)(2) and 303(d)(4) prohibit slackening of discharge requirements and regulations under revised NPDES permits. With isolated/limited exceptions, these regulations require effluent limitations in a reissued permit to be at least as stringent as those contained in the previous permit.
- Section 404, which establishes a permit program for the discharge of dredged or fill material into waters of the United States. This permit program is administered by the U.S. Army Corps of Engineers.

Safe Drinking Water Act

The purpose of the Safe Drinking Water Act (1974) is to protect public health by regulating the nation’s public drinking water supply. The law prescribes several actions that protect drinking water and its sources, including rivers, lakes, reservoirs, springs, and groundwater wells, although the act does exclude drinking water wells that serve fewer than 25 persons. The law was amended in 1986 and 1996, and its implementation is overseen by the United States Environmental Protection Agency (U.S. EPA). As such, the U.S. EPA is authorized to set national health-based standards for drinking water to protect against natural and man-made contaminants in drinking water.⁹

Federal Antidegradation Policy

The federal antidegradation policy, established in 1968, is designed to protect existing uses and water quality and national water resources. The federal policy directs states to adopt a statewide policy that includes the following primary provisions:

- Existing instream uses and the water quality necessary to protect those uses shall be maintained and protected.

⁹ United States Environmental Protection Agency (U.S. EPA), 2006 Edition of the Drinking Water Standards and Health Advisories. EPA 822-R-06-013. August 2006.

- Where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development.
- Where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, as revised in December 2007, provides for protection of the quality of all waters of the State of California for use and enjoyment by the people of California. It further provides that all activities that may affect the quality of waters of the state shall be regulated to obtain the highest water quality that is reasonable, considering all demands being made and to be made on those waters. 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 interbasin 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 State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs) to oversee the coordination and control of water quality within California.

State Water Resources Control Board

Created by the State legislature in 1967, the SWRCB holds authority over water resources allocation and water quality protection within the state. The five-member SWRCB allocates water rights, adjudicates water right disputes, develops statewide water protection plans, establishes water quality standards, and guides the nine RWQCBs. The mission of SWRCB is to, “preserve, enhance, and restore the quality of California’s water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations.”

San Francisco Bay Regional Water Quality Control Board

The RWQCBs are responsible for oversight and implementation of water quality standards and programs, as delegated by the SWRCB. To this end, the San Francisco Bay RWQCB implements the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan).¹⁰ This document is the RWQCB’s master water quality control planning document. It designates beneficial uses and water quality objectives for “waters of the State,”¹¹ including surface waters and groundwater, and includes programs of implementation to achieve the water quality objectives. The Basin Plan has been adopted and

¹⁰ San Francisco Bay Regional Water Quality Control Board, 2006 CWA Section 303(d) List of Water Quality Limited Segments Requiring TMDLs. USEPA Approval Date: June 28, 2007 (hereinafter “RWQCB 2007”).

¹¹ “Waters of the State” includes all surface water or groundwater, including saline waters, within the boundaries of the state of California.

approved by the SWRCB, U.S. EPA, and the Office of Administrative Law. The Basin Plan identifies the following existing beneficial uses for San Francisco Bay: industrial service supply; industrial process supply; ocean, 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.

Additionally, Section 303(d) of the CWA requires that states develop a list of water bodies that do not meet water quality standards, establish priority rankings for waters on the list, and develop action plans, called Total Maximum Daily Loads (TMDL), to improve water quality. The list of impaired water bodies is revised periodically (typically every two years), and TMDL development is overseen by the RWQCB, within its area of jurisdiction. San Francisco Bay is included on the CWA Section 303(d) list for the following constituents: chlordane, DDT, dieldrin, dioxin compounds (including 2,3, 7,8-TCDD), exotic (e.g., non-native) species, furan compounds, mercury, PCBs, PCBs (dioxin-like), and selenium.¹² The RWQCB is also in the process of updating this list to include trash as a listed constituent.

NPDES General Permit for Discharges of Stormwater Associated with Construction Activities

Construction activities disturbing 1 acre or more of land are subject to the permitting requirements of the National Pollutant Discharge Elimination System (NPDES) General Construction Activity Permit for Discharges of Storm Water Runoff Associated with Construction Activity (NPDES General Construction Permit). The NPDES General Construction Permit, which became effective on July 1, 2010, replacing a previous version of this permit, requires a risk-based permitting approach, dependent upon the likely level of risk imparted by a project. The permit also contains several additional compliance items, including (1) additional mandatory Best Management Practices (BMPs) to reduce erosion and sedimentation, which may include incorporation of vegetated swales, setbacks and buffers, rooftop and impervious surface disconnection, bioretention cells, rain gardens, rain cisterns, implementation of pollution/sediment/spill control plans, training, and other structural and non-structural actions; (2) sampling and monitoring for non-visible pollutants; (3) effluent monitoring and annual compliance reports; (4) development and adherence to a Rain Event Action Plan; (5) requirements for the post-construction period; (6) numeric action levels and effluent limits for pH and turbidity; (7) monitoring of soil characteristics on the site; and (8) mandatory training under a specific curriculum.

Under the NPDES General Construction Permit, BMPs are incorporated into the compliance action and monitoring requirements for each development site. Specific permit requirements could include the following or equivalent measures:

- Preparation of a site-specific Stormwater Pollution Prevention Plan (SWPPP);
- Preparation of hazardous material spill control and countermeasure programs;
- Stormwater quality sampling, monitoring, and compliance reporting;
- Development and adherence to a Rain Event Action Plan;
- Adherence to numeric action levels and effluent limits for pH and turbidity; monitoring of soil characteristics on-site;

¹² RWQCB 2007.

- Mandatory training under a specific curriculum; and
- Mandatory implementation of BMPs, which could include, but would not be limited to, as necessary:
 - Physical barriers to prevent erosion and sedimentation including setbacks and buffers, rooftop and impervious surface disconnection, rain gardens and cisterns, and other installations;
 - Construction and maintenance of sedimentation basins;
 - Limitations on construction work during storm events;
 - Use of swales, mechanical, or chemical means of stormwater treatment during construction, including vegetated swales, bioretention cells, chemical treatments, and mechanical stormwater filters; and
 - Implementation of spill control, sediment control, and pollution control plans and training.

Under the permit, the SWPPP would be reviewed by the RWQCB. However, additional monitoring, reporting, and training requirements for management of stormwater pollutants will also be implemented, unless the new permit is challenged and set aside prior to its implementation.

Local

San Francisco Public Utilities Commission Water Pollution Prevention Program

The purpose of the San Francisco Public Utilities Commission's (SFPUC) Water Pollution Prevention Program is to avoid and minimize pollutants entering the city's sewer system and storm drains, thereby reducing pollutant loading to San Francisco Bay and the Pacific Ocean. The program includes education components for businesses, residents, and City employees. The program also includes several initiatives that are meant to reduce water pollution, including initiatives meant to reduce toxic chemicals used for landscaping, reduce dental mercury, reduce fats/oils/greases, minimize construction-related water pollution, minimize stormwater pollution, minimize pet waste-related water pollution, properly dispose of medications, and support green design and operation measures for businesses and households.

San Francisco Public Utilities Commission Stormwater Management Plan

The City and County of San Francisco has prepared and adopted a Stormwater Management Plan¹³ that describes the measures that will be taken to minimize stormwater pollution. The Stormwater Management Plan is required under the federal Clean Water Act, within NPDES Phase II regulations. The Stormwater Management Plan is applicable to those portions of San Francisco that are served by separate stormwater and sanitary wastewater systems.

The Stormwater Management Plan is comprised of six program areas meant to support water quality. These program areas are public education, public involvement/participation, illicit discharge detection and elimination, pollution prevention/good housekeeping for municipal operations, construction site

¹³ San Francisco Public Utilities Commission, Stormwater Management Plan. City and County of San Francisco. January 2004 (hereinafter "2004 Stormwater Management Plan"). Available online at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/swmp/sfpuc_swmp.pdf, accessed on April 19, 2012.

stormwater runoff, and post-construction stormwater management in new developments and redevelopment areas. The Stormwater Management Plan thereby requires implementation of a variety of stormwater pollution reduction measures, including the implementation of stormwater BMPs, including construction period BMPs and long-term, post-construction BMPs. Required BMP categories mirror the six program areas discussed above: public education and outreach on stormwater impacts, public involvement/participation, illicit discharge detection and elimination, construction site stormwater runoff control, post-construction stormwater management in new development and redevelopment, and pollution prevention/good housekeeping for municipal operations.¹⁴

San Francisco Stormwater Management Ordinance

The City and County of San Francisco has amended the San Francisco Public Works Code to add Article 4.2, Sections 147 to 147.6, requiring the development and maintenance of stormwater management controls for specified activities that disturb 5,000 square feet or more of the ground surface and are subject to building, planning and subdivision approvals. The intent of Sections 147 to 147.6 is to protect and enhance the water quality in the City and County of San Francisco's sewer system, stormwater collection system, and receiving waters pursuant to and consistent with federal and state laws, lawful standards and orders applicable to stormwater and urban runoff control, and the City's authority to manage and operate its drainage systems. Sections 147 to 147.6 protect the health, safety and general welfare of the city's residents by:

- 1) minimizing increases in pollution caused by stormwater runoff from development that would otherwise degrade local water quality;
- 2) controlling the discharge to the city's sewer and drainage systems from spills, dumping or disposal of pollutants; and
- 3) reducing stormwater runoff rates, volume, and non-point source pollution whenever possible, through stormwater management controls, and ensuring that these management controls are safe and properly maintained.

In accordance with the San Francisco Stormwater Management Ordinance, approved in April 2010, development projects that discharge stormwater to the combined sewer system—which covers the Plan area—must comply with the San Francisco Stormwater Design Guidelines developed by the SFPUC and the Port of San Francisco.¹⁵ The Guidelines offer five tools to help project developers achieve compliance with stormwater management requirements:

- A step-by-step guide describing how to manage stormwater on site;
- A set of stormwater Best Management Practices (BMP) Fact Sheets;

¹⁴ 2004 Stormwater Management Plan.

¹⁵ San Francisco Public Utilities Commission and Port of San Francisco, San Francisco Stormwater Design Guidelines, November, 2009. Adopted by the SFPUC Commission January 12, 2010. http://sfwater.org/mto_main.cfm/MC_ID/14/MSC_ID/361/MTO_ID/543. Stormwater Management Ordinance: Ordinance 83-10, approved by the Board of Supervisors April 13, 2010, and signed by the Mayor April 22, 2010: <http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances10/o0083-10.pdf>.

- A vegetation palette to assist in BMP-appropriate plant selection;
- Sizing calculators to determine the required size of each BMP; and
- Maintenance checklists explaining the types and frequencies of the maintenance activities associated with each BMP.

In accordance with the San Francisco Stormwater Design Guidelines, developers of projects that disturb more than 5,000 square feet of ground must implement BMPs to reduce the flow rate and volume of stormwater going into the combined sewer system by achieving Leadership in Energy and Environmental Design (LEED®) Sustainable Sites Credit 6.1 (Stormwater Management Rate and Quantity). Development projects must also comply with Article 4.2 of the *San Francisco Public Works Code* and must submit a stormwater control plan (including an operations and maintenance plan). The SFPUC reviews the plan and certifies compliance with the San Francisco Stormwater Design Guidelines. Examples of BMPs that may be implemented include rainwater harvesting, rain gardens, green roofs, and permeable paving. (Separate requirements exist for parts of the City that have separate storm sewer systems.)

The SFPUC inspects stormwater BMPs once they are constructed, and any issues noted by the inspection must be corrected before the Certificate of Occupancy can be issued for the building. 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 will inspect all stormwater BMPs every third year. Any issues identified by either inspection must be resolved before the SFPUC can renew the certificate of compliance.

Projects that are required to implement the San Francisco Stormwater Design Guidelines are also subject to review by the San Francisco Department of Building Inspection, and are subject to building codes that include provisions for managing drainage for new construction. Specifically, Section 306.2 of the *San Francisco Plumbing Code* and Section 1503.4 of the *San Francisco Building Code* allow roofs and other building areas to drain to locations other than the combined sewer. In 2008, the SFPUC, Department of Building Inspection, and Department of Public Health also entered into a Memorandum of Agreement concluding that applicants can safely harvest rainwater for used in non-potable applications such as toilet flushing, irrigation, and vehicle washing without treating it to potable standards.

Implementation of the low impact development measures described above helps to reduce and delay the volumes of discharge entering the combined sewer system, thereby reducing the frequency of combined sewer overflows, minimizing flooding effects, and protecting water quality. Other plans and ordinances also contribute to reducing the frequency of combined sewer overflows by addressing stormwater management. The Sewer Master Improvement Program will include collection system projects to upgrade the aging sewer system and better handle the City's sewage and stormwater flows by providing both grey and green infrastructure solutions. The Better Streets Plan identifies innovative methods for reducing stormwater runoff from streets and sidewalks to create a more attractive and sustainable public realm in San Francisco. The Green Building Ordinance expands the scope of the green building standards to apply to private developments and redevelopment projects in addition to public buildings; it fosters environmentally sensitive design and sustainability in new development projects. The stormwater management performance standards specified in the San Francisco Stormwater Design Guidelines were

developed as part of this ordinance, and the ordinance provides the regulatory authority to implement stormwater management requirements in combined sewer areas.

Construction-related stormwater discharges are subject to the requirements of Article 4.1 of the *San Francisco Public Works Code*, which incorporates and implements the City's NPDES permit and the nine minimum controls described in the federal CSO Control Policy. The minimum controls include development and implementation of a pollution prevention program. At a minimum, the City requires that the project sponsor develop and implement an erosion and sediment control plan to reduce the impact of runoff from the construction site. The erosion and sediment control plan must be reviewed and approved by the City prior to implementation, and the City conducts periodic inspections to ensure compliance with the erosion and sediment control plan.

San Francisco Industrial Waste Ordinance

Any groundwater encountered during construction of any proposed project would be subject to requirements of the City's Industrial Waste Ordinance (Ordinance Number 199-77), requiring that groundwater meet specified water quality standards before it may be discharged into the sewer system. The Bureau of Systems Planning, Environment, and Compliance of the SFPUC must be notified of projects necessitating dewatering and may require water analysis before discharge. Should dewatering be necessary, the final soils report would address the potential settlement and subsidence impacts of this dewatering. The report would contain a determination of whether or not a lateral movement and settlement survey should be done to monitor any movement or settlement of surrounding buildings and adjacent streets. If a monitoring survey is recommended, the Department of Public Works (DPW) would require that a Special Inspector (as defined in Article 3 of the Building Code) be retained by the project sponsor to perform this monitoring.

San Francisco General Plan

The *San Francisco General Plan* Environmental Protection Element includes objectives and policies that are relevant to the Proposed Project. These include measures that are meant to improve water quality in the San Francisco Bay and the Pacific Ocean, improve sewage treatment, reduce water pollution, and encourage water recycling.

The Environmental Protection Element includes the following key objectives and policies related to hydrology and water quality:

Objective 3: Maintain and improve the quality of the Bay, Ocean, and shoreline areas.

Policy 3: Implement plans to improve sewage treatment and halt pollution of the Bay and Ocean.

Objective 6: Conserve and protect the fresh water resource.

Policy 2: Encourage and promote research on the necessity and feasibility of water reclamation.

In addition, as noted above, the *San Francisco General Plan* Community Safety Element includes a map showing potential tsunami runup areas. It also contains the following objective and policy:

Objective 5: Support seismic research through appropriate actions by all public agencies, and apply new knowledge as it becomes available.

Policy 5.2: Support and monitor research being conducted about the nature of seismic hazards in the Bay Area, including research on earthquake prediction and warning systems, on the risk of tsunamis, and on the performance of structures.

Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR, the Proposed Project would result in a significant impact with respect to hydrology and water quality if it would:

- Violate any water quality standards or waste discharge requirements;
- 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 (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map;
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow.

Approach to Analysis

The evaluation of the Proposed Project's hydrology and water quality impacts considered potential development under the three project components in relation to current conditions within the Project Area and applicable regulations and guidelines.

Based on the physical setting of the Project Area, the Proposed Project (i.e., the Draft Plan, Rezoning of Adjacent Parcels, and 350 Eighth Street project) would not result in impacts related to the following criteria, and no impact discussion is provided for these topics for the following reasons:

- ***Depletion of Groundwater Supplies/Interference with Groundwater Recharge.*** The groundwater beneath the Project Area, including the Draft Plan Area, Adjacent Parcels, and 350 Eighth Street project site, is not currently used as a groundwater supply source. Implementation of the Proposed Project would likely not substantially affect the amount of groundwater recharge in the Project Area as there is very little existing pervious surface. Therefore, there would be no impact related to depletion of groundwater supplies or interference with groundwater recharge.
- ***Alteration of Drainage Patterns.*** The Proposed Project (i.e., the Draft Plan, Rezoning of Adjacent Parcels, and 350 Eighth Street project) would not alter the course of any waterway or change the topography of the Project Area, nor would the Proposed Project substantially increase the amount of impervious surface in the Project Area, since the Project Area is nearly entirely covered with impervious surfaces. Therefore, there would be no impact related to erosion, siltation, or flooding resulting from alteration of drainage patterns. (See Impact HY-3 below for discussion of other flooding potential.)
- ***Failure of a Levee or Dam.*** None of the permanent above-ground structures would be susceptible to damage from the failure of a levee or dam. In addition, according to mapping compiled by the Association of Bay Area Governments, the Project Area, including the Draft Plan Area, Adjacent Parcels, and 350 Eighth Street project site, is located outside of any dam inundation area.¹⁶ Therefore, there would be no impact related to failure of a levee or dam.
- ***Seiche, Tsunami, and Mudflows.*** The Project Area, including the Draft Plan Area, Adjacent Parcels, and 350 Eighth Street project site, is not located immediately near an enclosed body of water capable of producing seiche waves and is too far inland to be at risk for tsunami hazards. The relatively flat topography of the Project Area indicates that it is not an area susceptible to mudflows. Therefore, there would be no impact related to seiche, tsunami, or mudflow.

It is noted that transportation and street network improvements that would be implemented as part of the Draft Plan would not have any impacts on hydrology and water quality, as they would not result in any of the impacts listed under "Significance Criteria," above. For this reason, these impacts are not discussed any further in this section.

¹⁶ Association of Bay Area Governments, Dam Inundation Areas. Available online at: <http://www.abag.ca.gov/cgi-bin/pickdamx.pl>, accessed on August 5, 2010.

Impacts of Western SoMa Community Plan and Rezoning of Adjacent Parcels (Program-Level Analysis)

Impact HY-1: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would violate a water quality standard or a waste discharge requirement, or otherwise substantially degrade water quality. (Less than Significant)

Construction projects that could be encouraged by the Draft Plan or the Rezoning of Adjacent Parcels would require the use of heavy equipment, including bulldozers, graders, earth movers, trucks, backhoes, piledrivers, and other equipment could result in the disturbance of surface soils. Additionally, the use of construction equipment could result in the release of greases, oils, coolants, hydraulic fluid, fuels, cement washout, and other construction-related contaminants into the environment. As a result, stormwater could become contaminated by elevated sediment levels, or by elevated levels of other construction-related pollutants. Contaminants could infiltrate into groundwater, or become entrained in surface flows and eventually be discharged into San Francisco Bay, resulting in degraded water quality.

As stated above, as a condition of construction, projects disturbing more than 1 acre would be required to obtain coverage under the NPDES General Construction Permit administered by the RWQCB. Conditions of this permit would include adherence to requirements of the NPDES General Construction Permit in effect at the time of construction. As discussed under “Regulatory Setting” above, permit requirements would include specific reporting, monitoring, and compliance measures that would ensure the protection of site soils, minimizing the potential for off-site migration of contaminants.

Adherence to these and/or other similar BMPs would be required as a condition of the NPDES General Construction Permit and would substantially reduce or prevent waterborne pollutants from entering natural waters, per RWQCB standards. The specific set of BMPs would be determined prior to initiation of construction activities within the Draft Plan Area or on the Adjacent Parcels, and a schedule for implementation, as well as a series of monitoring and compliance measures, would be developed in coordination with the permitting agency, to meet Clean Water Act standards. Therefore, there would be no significant impact on stormwater quality, and mitigation is not required to protect water quality during construction over and above that which is required by the NPDES General Construction Permit.

All sanitary wastewater from any proposed new construction and stormwater runoff would continue to flow into the city’s combined sewer system and be treated at the Southeast Water Pollution Control Plant prior to discharge into the Bay. Treatment would be provided pursuant to the effluent discharge limitations set by the plant’s NPDES permit. During construction and operation, individual construction projects within the Draft Plan Area or on the Adjacent Parcels would comply with all local wastewater discharge requirements.

Any soil that might be exposed during site preparation would be subject to requirements to reduce erosion pursuant to Building Code Chapter 33, Excavation and Grading.

Some of the new developments that may be encouraged by the Draft Plan or Rezoning of Adjacent Parcels may require dewatering during construction. As mentioned above, however, any dewatering activities would be subject to requirements of the City’s Industrial Waste Ordinance (Ordinance Number

199-77). The requirements of this ordinance include measures that are designed to ensure that water quality standards are met with the discharge of any water from dewatering activities.

Based on the requirements that would be imposed by permitting agencies, construction activities within the *Western SoMa Community Plan* Area and on the Adjacent Parcels would not violate a water quality standard or a waste discharge requirement or otherwise substantially degrade water quality

Mitigation: None required.

Impact HY-2: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. (Less than Significant)

The Draft Plan and the Rezoning of the Adjacent Parcels would have no direct impact related to stormwater runoff volumes and would not provide additional sources of polluted runoff, since both the Draft Plan Area and the Adjacent Parcels are already largely developed and covered in imperviously surfaces. However, these project components may create incentives for future development that has the potential to alter stormwater drainage systems or increase runoff.

The quantity and rate of stormwater runoff from the Draft Plan Area and Adjacent Parcels that flows to the city's combined sewer system would likely not increase because the amount of impervious surfaces would not be materially altered. In addition, any individual project disturbances of 5,000 square feet or larger would be required to adhere to the San Francisco Stormwater Management Ordinance, as described under "Regulatory Setting" above. Because stormwater flows from the entire Project Area would be required to minimize runoff rates where possible, minimize pollution, and continue to be accommodated by the existing combined sewer system, no significant increase in stormwater flows would be expected and the individual projects would not exceed the capacity of existing or planned stormwater drainage systems. Adherence to City and County of San Francisco drainage requirements in accordance with the Stormwater Management Plan would also ensure that stormwater is managed to provide adequate capacity and minimize potential sources of pollution. The Stormwater Management Plan includes post-construction BMPs that are designed to control sources of pollution in stormwater runoff to the maximum extent practical.

Based on the above, neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would 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, and this impact would be less than significant.

Mitigation: None required.

Impact HY-3: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would expose people, housing, or structures to substantial risk of loss due to flooding through placement of housing within a 100-year flooding zone as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map. (Less than Significant)

As stated under “Environmental Setting” above, preliminary flood maps prepared by FEMA and by the City indicate that the only portion of the Project Area within a 100-year flood zone is part of the block bounded by Brannan, Townsend, Fifth, and Sixth Streets. As also stated above, maps published by BCDC indicate that, with a potential sea level rise of 55 inches (4.6 feet) by the year 2100, some portions of the Project Area could be subject to inundation, generally including the area noted above on the block bounded by Brannan, Townsend, Fifth, and Sixth Streets, as well as an area north and south of Harrison Street between Fifth and Sixth Streets. However, other estimates have indicated lower sea level rise values and, without definitively established levels that have been widely accepted by the scientific community, these factors are considered somewhat speculative. In time, when more is known regarding potential effects of rising sea levels, the science may be able to improve on the ability to predict future scenarios and provide adaptive measures to protect existing or future development.

Future development, and especially residential development, in a flood zone would be subject to project-specific review, which could include the following actions: a detailed computerized flood hazard analysis in accordance with current standards set forth by FEMA, requirements for inclusion of appropriate floodplain management measures incorporated into the location and design of new buildings that are within a flood zone, and any other appropriate flood hazard reduction measures identified by a qualified civil engineer or hydrologist. The City’s floodplain management ordinance requires that the first floor of structures in flood zones be constructed above the base flood elevation or be flood-proofed. New development constructed in these areas would be required to comply with these requirements. Accordingly, the implementation of the Draft Plan and Rezoning of Adjacent Parcels would result in a less-than-significant impact with regard to flooding, including due to placement of housing within a 100-year flooding zone or due to sea level rise.

Mitigation: None required.

Impact HY-4: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would result in substantial flooding as a result of problems caused by the elevation of structures relative to the hydraulic grade line in the sewers. (Less than Significant)

Development in the city must account for flooding potential. Areas located on fill or bay mud can subside to a point at which the sewers do not drain freely during a storm (and sometimes during dry weather), and there can be backups or flooding near these streets and sewers. As stated Under “Environmental Setting” above, much of the Project Area falls within an area in the South of Market that is prone to flooding during

storms, especially where ground stories are located below an elevation of 0.0 San Francisco City Datum¹⁷ or, more importantly, below the hydraulic grade line or water level of the sewer. The City has implemented a review process to avoid flooding problems caused by the relative elevation of the structure to the hydraulic grade line in the sewers.

Applicants for building permits for either new construction, change of use (through the San Francisco Planning Department), or change of occupancy (through the Department of Building Inspection), or for major alterations or enlargements are referred to the SFPUC at the beginning of the process for a review to determine whether the project would result in ground-level flooding during storms. The side sewer connection permits for such projects are reviewed and approved by the SFPUC at the beginning of the review process for all permit applications submitted to the San Francisco Planning Department, the Department of Building Inspection. The SFPUC and/or its delegate (DPW, Hydraulics Section) will review the permit application and comment on the proposed application and the potential for flooding during wet weather. The permit applicant must refer to SFPUC requirements for information required for the review of projects in flood-prone areas. Requirements may include provision of a pump station for the sewage flow, raised elevation of entryways, and/or special sidewalk construction and the provision of deep gutters.

As required, the project sponsor of subsequent individual development projects would coordinate a review with the SFPUC in order to determine if the project would result in ground-level flooding during storms and would incorporate any required design measures, as applicable. Therefore, the project would result in a less-than-significant flooding impact.

Mitigation: None required.

Impacts of 350 Eighth Street Project (Project-Level Analysis)

Impact HY-5: The proposed 350 Eighth Street project would not violate a water quality standard or a waste discharge requirement, or otherwise substantially degrade water quality. (Less than Significant)

During construction, the use of heavy equipment for demolition and foundation preparation could result in the disturbance of surface soils. Additionally, the use of construction equipment could result in the release of greases, oils, coolants, hydraulic fluid, fuels, cement washout, and other construction-related contaminants into the environment. As a result, stormwater could become contaminated by elevated sediment levels, or by elevated levels of other construction-related pollutants. Contaminants could infiltrate into groundwater, or become entrained in surface flows and eventually be discharged into San Francisco Bay, resulting in degraded water quality.

¹⁷ San Francisco City Datum 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.

The proposed 350 Eighth Street project would disturb more than 1 acre and therefore would be required to obtain coverage under the NPDES General Construction Permit administered by the RWQCB. Conditions of this permit would include adherence to requirements of the NPDES General Construction Permit, which include implementation of industry standard BMPs to control sources of pollution in stormwater runoff during construction.

In general, the 350 Eighth Street project would be subject to similar regulatory requirements as those discussed above in Impact HY-1. Based on these requirements that would be imposed by permitting agencies, construction activities would not violate any water quality standard or substantially degrade water quality, and this impact would be less than significant.

Mitigation: None required.

Impact HY-6: The proposed 350 Eighth Street project would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff. (Less than Significant)

The quantity and rate of stormwater runoff from the 350 Eighth Street project site that flows to the city's combined sewer system would likely not increase because the amount of impervious surfaces would not be materially altered. In fact, with addition of the proposed park area, the amount of impervious surfaces would decrease. Because stormwater flows from the project site would continue to be accommodated by the existing combined sewer system, and because there would not be an expected increase in stormwater flows, the proposed 350 Eighth Street project would not exceed the capacity of existing or planned stormwater drainage systems. Adherence to City and County of San Francisco drainage requirements in accordance with the Stormwater Management Plan would also ensure that stormwater is managed to provide adequate capacity and minimize potential sources of pollution. The Stormwater Management Plan includes post-construction BMPs that are designed to control sources of pollution in stormwater runoff to the maximum extent practical.

Mitigation: None required.

Impact HY-7: The proposed 350 Eighth Street project would not expose people, housing, or structures to substantial risk of loss due to flooding through placement of housing within a 100-year flooding zone as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map. (Less than Significant)

As shown in Figure 4.N-1, p. 4.N-4, the 350 Eighth Street project site is in an area identified by the SFPUC as subject to flooding due to the relative elevation of sewer lines relative to street grade. However, the finished grade of the basement would be above an elevation of 0.0 SF City Datum. In addition, the project sponsor would be required to comply with all review and approval procedures developed by the SFPUC

for the purposes of avoiding flooding impacts during storms, as described above under Impact HY-3. As required, the project sponsor would coordinate a review with the SFPUC in order to determine if the project would result in ground-level flooding during storms and would incorporate any required design measures, as applicable. Therefore, no significant impact would be anticipated.

The 350 Eighth Street project site is not within the area identified as a potential flood zone in the preliminary FEMA maps or the City's flood zone mapping, nor is it within an area subject to flooding due to sea level rise.

For the reasons described above, the 350 Eighth Street project would not be expected to expose people, housing, or structures to substantial risk of loss due to flooding, and this impact would be less than significant.

Mitigation: None required.

Impact HY-8: The proposed 350 Eighth Street project would not result in substantial flooding as a result of problems caused by the elevation of structures relative to the hydraulic grade line in the sewers. (Less than Significant)

As discussed above under "Environmental Setting" and Impact HY-4, much of the South of Market is prone to flooding during storms, especially where ground stories are located below an elevation of 0.0 San Francisco City Datum or, more importantly, below the hydraulic grade line or water level of the sewer. Such flooding risk also applies to the 350 Eighth Street project site.

The City has implemented a review process (discussed under Impact HY-4) to avoid flooding problems caused by the relative elevation of the structure to the hydraulic grade line in the sewers. This process would apply to the 350 Eighth Street project and would ensure that any impacts related to flooding would not be significant. Therefore, through required coordination with the SFPUC, the project would result in a less-than-significant flooding impact.

Mitigation: None required.

Cumulative Impacts

Impact C-HY: The implementation of the Proposed Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute considerably to a significant cumulative impact related to hydrology and water quality. (Less than Significant)

Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. Impacts of these other projects, including the *Central Corridor Plan*, the 5M Project, Moscone East, and 801 Brannan Street/One Henry Adams Street Project, could combine with the less-than-

significant incremental impacts of the Proposed Project to compound or increase any existing hydrology- or water quality-related problems. Such cumulative impacts could include, for example, cumulative reductions in the water quality of San Francisco Bay, or degradation of urban stormwater quality.

As discussed above, the construction that could occur with implementation of the Draft Plan and Rezoning of Adjacent Parcels, and as a direct result of the proposed 350 Eighth Street project, would include design measures and regulatory requirements that would reduce direct hydrology and water quality impacts to less-than-significant levels. The Proposed Project would not ultimately result in significant changes to existing drainage patterns, and potential changes related to stormwater quality, stormwater flows, impervious surfaces, and flooding would be minimized via the implementation of stormwater control measures, stormwater retention measures, stormwater quality control measures, and structural updates to minimize impacts. The Proposed Project's impacts would be less than significant, the impacts of other projects in the Project Area vicinity would also be less than significant because those projects would have to comply with similar stormwater measures; therefore, cumulative impacts would be less than significant.

Mitigation: None required.

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4.O. Hazards and Hazardous Materials

This section discusses the hazards and hazardous materials issues associated with the Proposed Project. Such issues include past chemical use and potential presence of associated toxic substances in soil and groundwater; past on-site and off-site storage and release of petroleum products, including the presence and former presence of underground storage tanks; potential hazardous waste issues during any construction; and the potential for associated activities to generate hazardous materials and/or hazardous wastes. This section identifies potential impacts and, as appropriate, mitigation measures to avoid or reduce impacts determined to be significant.

Environmental Setting

General Background

Under federal and state laws described below, “discarded materials” and other “wastes” may be considered “hazardous waste” if they are specifically listed by statute as such or if they are poisonous (toxic), can be ignited by open flame (ignitable), corrode other materials (corrosive), or react violently, explode, or generate vapors when mixed with water (reactive). The term “hazardous material” is defined in state law as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment.¹ A hazardous material can include a hazardous substance, hazardous waste, or any other materials where a potential risk to human health or the environment has been identified.

In general, past industrial or commercial activities on a site could have resulted in spills or leaks of hazardous materials to the ground, causing soil and/or groundwater contamination. The presence of certain hazardous materials also can lead to the buildup of methane gas, which can become an explosive hazard if trapped under or within structures.

Federal and state laws require that hazardous materials be specially managed and that excavated soils having concentrations of contaminants such as lead, gasoline, or industrial solvents that are higher than certain acceptable levels be specially managed, treated, transported, and/or disposed of as a hazardous waste. Title 22 of the California Code of Regulations §66261.20–24 contains technical descriptions of characteristics that would cause a soil, once excavated and discarded, to be designated a hazardous waste. California regulations are compliant with federal regulations and, in most cases, are more stringent.

Overview of Hazardous Building Materials

The Project Area has had various periods of development over its history, and many of the existing structures were built decades ago. Like many older buildings, these structures may contain building materials that can be hazardous to people and the environment once disturbed. Typical hazardous materials in buildings of this age include lead-based paint, asbestos, and polychlorinated biphenyls (PCBs).

¹ State of California, Health and Safety Code, Chapter 6.95, Section 25501(o). Available online at: <http://www.leginfo.ca.gov/cgi-bin/displaycode?section=hsc&group=25001-26000&file=25500-25520>, accessed on April 19, 2012.

Lead-Based Paint

Prior to the United States Environmental Protection Agency (U.S. EPA) ban in 1978, lead-based paint was commonly used on interior and exterior building surfaces. Through such disturbances as sanding and scraping activities, renovation work, or gradual wear and tear, old peeling paint or paint dust particulates have been found to contaminate surface soils or cause lead dust to migrate and affect long-term indoor air quality. Exposure to lead can cause severe adverse health effects, especially in children.

Asbestos

Asbestos is a naturally occurring fibrous material that was extensively used as a fireproofing and insulating agent in building construction materials before such uses were banned by the U.S. EPA in the 1970s. Asbestos commonly was used for insulation of heating ducts as well as ceiling and floor tiles, to name a few typical types of materials. While contained within building materials, asbestos fibers present no significant health risk, but once these tiny fibers (that cannot be seen with the naked eye) are disturbed, they can become airborne. Once inhaled, they can become lodged in the lungs, potentially causing increased incidence of lung disease or other pulmonary complications.

Polychlorinated Biphenyls (PCBs)

PCBs are petroleum-based oils that formerly were used primarily as insulators in many types of electrical equipment, including transformers and capacitors. After PCBs were determined to be carcinogenic in the mid to late 1970s, the U.S. EPA banned PCB use in most new equipment and began a program to phase out certain existing PCB-containing equipment. Fluorescent lighting ballasts manufactured after January 1, 1978, do not contain PCBs and are required to have a label clearly stating that PCBs are not present in the unit. Additional information about these materials is provided under “Regulatory Setting” below.

Underground Storage Tanks

Older structures in San Francisco commonly had underground storage tanks (USTs) that were used for various purposes including the storage of heating oil or for refueling of combustion engine vehicles and equipment. Many USTs have been decommissioned and removed over the last several decades but some remain. USTs have the potential to leak hazardous materials into the groundwater and soil over time.

Results of Hazardous Materials Database Searches

The Project Area has a long history of light and heavy industrial uses as well as warehousing. During initial development, some lowland or wetland areas within the Project Area were infilled for the purpose of creating a building pad. Past or present industrial, light industrial, or commercial sites commonly have hazardous materials released to the subsurface soil and/or groundwater.

Sites where historic or ongoing activities have resulted in the known or suspected release of hazardous materials to soil and groundwater have been identified in the Project Area through a search of the San Francisco Bay Regional Water Quality Control Board (RWQCB) Geotracker environmental database and the California Department of Toxic Substances Control (DTSC) EnviroStor environmental database. The DTSC EnviroStor database includes sites identified in various programs administered by DTSC,

including Federal Superfund (also referred to as National Priority List, or NPL), State Response (State Superfund and Military facilities), Voluntary Cleanup Sites, and School Cleanup sites.² The Geotracker database includes both Leaking Underground Fuel Tank (LUFT) sites and non-fuel sites known as Spills, Leaks, Incidents, and Cleanup (SLIC) sites. There are three voluntary cleanup sites overseen by DTSC and dozens of LUFT sites that are either actively being investigated or cleaned up or are currently closed within the Project Area; no SLIC sites were identified within the Project Area.

Two of the voluntary cleanup sites (241 Sixth Street and 455 Eighth Street, both located within the Draft Plan Area) have land use restrictions that limit future land uses and contain notification requirements whenever ground disturbances are proposed.³ This contamination may be the result of UST releases, spills, accidental releases, or other activities involving the use of hazardous materials such as the use of contaminated soils as fill material.

The 350 Eighth Street project site is listed on the Geotracker database as a LUFT site where a release of gasoline was reported associated with the former Grosvenor Bus Lines.⁴ The case was closed in 2003, indicating no further potential impact on human health or the environment was determined. See below for more a detailed account of this site. Two other closed cases near this site, 333 and 385 Eighth Street, also had reported former releases, and both of these cases also have been closed.⁵

350 Eighth Street Project Site Phase I Report

A Phase I environmental assessment was performed for the 350 Eighth Street project site to determine the potential for past uses of the site to have resulted in the release of hazardous materials and the potential for hazardous building materials to be present at the site.⁶ Historical information indicates that the site was occupied by a vacant sugar refining factory, residences, and vacant tenements in 1889. The site was developed with a recreation park in the 1890s. In the early 1900s, the site was developed with the Union Transfer Company automobile and truck garage, a mattress factory, and several out-buildings. These buildings were removed and the site was developed again with a small building and gasoline fueling station prior to 1949. Small buildings, including a restaurant, were added to the site in the 1950s.

The three existing one-story structures on the site were constructed in the early 1950s. A tire storage area, tire recap building, and steam cleaning building were identified in the northwestern portion of the site in 1970. Numerous truck repair buildings and automobile parking areas were present in the southern and eastern portions of the site between the 1970s and early 1990s. The small restaurant building was removed

² Department of Toxic Substances Control, *EnviroStor Database*. Available online at: http://www.envirostor.dtsc.ca.gov/public/map.asp?global_id=&x=-119.1357421875&y=37.82280243352756&z1=5&ms=640,480&mt=m&findaddress=True&city=SAN%20FRANCISCO&zip=&county=&federal_superfund=true&state_response=true&voluntary_cleanup=true&school_cleanup=true&corrective_action=true&permit_site=true&permit_and_ca_site=true, accessed on August 9, 2010.

³ *Ibid.*

⁴ State Water Resources Control Board, Geotracker Database for 350 8th Street. Available online at: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607500601&assigned_name=MAINSITE, accessed on August 10, 2010.

⁵ State Water Resources Control Board, Geotracker Database for 333 and 385 8th Street. Available online at: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607513908&assigned_name=MAINSITE, and http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607500925&assigned_name=MAINSITE, accessed on August 10, 2010.

⁶ Blackstone Consulting, Phase I Environmental Site Assessment, 8th & Harrison Streets Redevelopment, San Francisco, California, June 11, 2007.

from the site in the late 1980s. To support auto, truck, and bus repair operations at the site and vehicle fueling, several USTs were installed at the site.

UST abandonment, site assessment, and remediation of petroleum-contaminated soil and groundwater from UST releases at the site were performed between the late 1980s and 2003. Remediation activities have included the excavation and off-site disposal of contaminated soil and groundwater and the installation of soil vapor and groundwater extraction and treatment systems. Contaminants of concern include total petroleum hydrocarbons-gasoline (TPH-g), TPH-diesel (TPH-d) and BTEX (benzene, toluene, ethylbenzene, and total xylenes) related to gasoline releases.

In January 2003, the local oversight agency, the San Francisco Department of Environmental Health, issued a Remedial Action Completion Certification for the UST investigations at the 350 Eighth Street project site. The certification indicates that no further action related to the releases was required.

Separate environmental investigations that evaluated the presence of volatile organic compounds (VOCs) began in early 2007. Low concentrations of petroleum-related hydrocarbons, VOCs, and lead were found to be present in soil and groundwater beneath the site at levels below those found during previous investigations.

The Phase I report concluded that based on the removal of former site USTs, the remediation of site soil and groundwater, the issuance of case closure from the local oversight agency, and the findings of recent site assessments of other site features, there were no identified recognized environmental conditions.⁷

Regulatory Setting

Federal

The Comprehensive Environmental Response Compensation and Liability Act (CERCLA), commonly known as Superfund, is the legal framework for the identification and restoration of contaminated property. In addition, CERCLA:

- Established prohibitions and requirements concerning closed and abandoned hazardous waste sites;
- Provided for liability of persons or entities responsible for releases of hazardous waste at these sites; and
- established a trust fund to provide for cleanup when no responsible party could be identified.

⁷ A recognized environmental condition (REC) is a standardized term used in Phase I investigations to assess the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. Typically identified RECs at a site warrant further soil and groundwater investigations to either confirm the presence (or lack of) contaminants.

Generally, CERCLA authorizes two kinds of response actions:

- Short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response; and
- Long-term remedial response actions that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life-threatening.

The Superfund Amendments and Reauthorization Act (SARA) (Public Law 99-499), amended CERCLA in 1986, and added certain specific provisions applicable to the cleanup of contaminated sites at federal facilities. Section 120 of those amendments addressed the cleanup of federal facilities. Under Section 120(a)(1), CERCLA specifies that federal departments, agencies, and instrumentalities must comply with CERCLA in the same manner and to the same extent as non-governmental entities.

No CERCLA sites have been identified within the Project Area.

State

State Agencies

Department of Toxic Substances Control

Under the California Hazardous Waste Control Act, California Health and Safety Code, Division 20, Chapter 6.5, Sections 25100, *et seq.*, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) regulates the generation, transportation, treatment, storage, and disposal of hazardous waste in California. The federal Resource Conservation and Recovery Act of 1976 (RCRA) established a “cradle-to-grave” regulatory program for governing the generation, transportation, treatment, storage and disposal of hazardous waste. Under RCRA, individual states may implement their own hazardous waste programs in lieu of RCRA, as long as the U.S. EPA has determined that the state program is at least as stringent as Federal RCRA requirements. California’s hazardous waste program has been federally approved. Thus, in California, DTSC enforces hazardous waste regulatory requirements. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; dictate the management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills.

DTSC is also the administering agency for the California Hazardous Substance Account Act, California Health and Safety Code, Division 20, Chapter 6.8, Sections 25300 *et seq.*, also known as the State Superfund law, providing for the investigation and remediation of hazardous substances pursuant to state law.

California Department of Transportation and California Highway Patrol (Hazardous Materials Transportation)

Within California, the state agencies with primary responsibility for enforcing federal and state regulations and for responding to transportation emergencies are the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans). Together, federal and state agencies

determine driver training requirements, load labeling procedures, and container specifications. Although special requirements apply to transporting hazardous materials, requirements for transporting hazardous waste are more stringent, and hazardous waste haulers must be licensed to transport hazardous waste on public roads.

California Division of Occupational Safety and Health (Worker Safety)

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Division of Occupational Safety and Health (Cal OSHA) and the federal Occupational Safety and Health Administration are the agencies responsible for assuring worker safety in the workplace.

Cal OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices. At sites known to be contaminated, a Site Safety Plan must be prepared to protect workers. The Site Safety Plan establishes policies and procedures to protect workers and the public from exposure to potential hazards at the contaminated site.

California Office of Emergency Services (Emergency Response, Business Plans, and Oversight of California's Accidental Release Prevention Program)

California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local governments and private agencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services (OES), which coordinates the responses of other agencies, including The California Environmental Protection Agency (Cal EPA), CHP, the Department of Fish and Game, the RWQCB, and the local fire department. The San Francisco Fire Department provides first-response capabilities, if needed, for hazardous materials emergencies within the Project Area.

OES is also the state administering agency for the California Accidental Release Prevention Program (CalARP) and California's Hazardous Materials Release, Response and Inventory Law (California's Business Plan Law). State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and in the event that such materials are accidentally released, to prevent or to mitigate injury to human health or the environment. These laws require hazardous materials users to prepare written plans, such as Hazard Communication Plans and Hazardous Materials Management Plans. Laws and regulations require hazardous materials users to store these materials appropriately and to train employees to manage them safely. Primary responsibility for enforcement of these laws has generally been delegated to local agencies, which for the Project Area is the San Francisco Department of Public Health, Environmental Health Section.⁸

⁸ DTSC has no regulations regarding handling procedures during construction. These would be addressed through the water quality requirements of a Stormwater Pollution Prevention Plan (SWPPP).

State Regulations for Structure and Building Components

Asbestos

Section 19827.5 of the California Health and Safety Code, adopted January 1, 1991, requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. The Bay Area Air Quality Management District (BAAQMD) is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified 10 days in advance of any proposed demolition or abatement work.

Notification includes the names and addresses of operations and persons responsible; description and location of the structure to be demolished/alterd including size, age, and prior use, and the approximate amount of friable asbestos; scheduled starting and completion dates of demolition or abatement; nature of planned work and methods to be employed; procedures to be employed to meet BAAQMD requirements; and the name and location of the waste disposal site to be used. The BAAQMD randomly inspects asbestos removal operations. In addition, the BAAQMD will inspect any removal operation that receives a complaint.

Further, the local office of Cal OSHA must be notified before asbestos abatement is carried out. Asbestos abatement contractors must follow state regulations contained in California Code of Regulations, Title 8 Section 1529 and Sections 341.6 through 341.14, where there is asbestos-related work involving 100 square feet or more of asbestos-containing material (ACM). Asbestos removal contractors must be certified as such by the Contractors Licensing Board of the State of California.

The owner of the property where abatement is to occur must have a Hazardous Waste Generator Number assigned by and registered with DTSC in Sacramento. The contractor and hauler of the ACM are required to prepare a Hazardous Waste Manifest, which details the hauling of the ACM from the site to its disposal location. Pursuant to California law, the San Francisco Department of Building Inspection (DBI) would not issue the required permit until the applicant has complied with the notice requirements described above.

Polychlorinated Biphenyls (PCBs)

In 1979, the U.S. EPA banned the use of PCBs in most new electrical equipment and began a program to phase out certain existing PCB-containing equipment. The use and management of PCBs in electrical equipment is regulated pursuant to the Toxic Substances Control Act, 15 U.S.C. § 2601 *et seq.* (TSCA). TSCA and its implementing regulations generally require labeling and periodic inspection of certain types of PCB equipment and set forth detailed safeguards to be followed in the disposal of such items. TSCA also requires the remediation of certain types of PCB spills to specified cleanup levels.

Lead and Lead-Based Paint

Pursuant to California Code of Regulations, Title 22 Section 66261.24, waste soil containing lead is classified as hazardous if the lead exceeds a total concentration of 1,000 parts per million (ppm) and a soluble concentration of 5 ppm. More discussion of local lead-based paint regulations is provided below.

Underground Storage Tanks

State laws governing USTs specify requirements for permitting, monitoring, closure, and cleanup. Regulations set forth construction and monitoring standards for existing tanks, release reporting requirements, and closure requirements. The Environmental Health Section of the San Francisco Department of Public Health is the local agency designated to permit and inspect USTs and to implement applicable regulations for investigation, closure, and remediation. The San Francisco Environmental Health Section Local Oversight Program and the San Francisco Fire Department have regulatory authority for removal of USTs. A closure plan for each UST to be removed must be prepared and submitted to the Fire Department prior to tank removal. The San Francisco Fire Department oversees the removal of USTs, the subsequent collection of subsurface soil samples beneath a removed UST, and any necessary remediation.

Local

San Francisco General Plan

The *San Francisco General Plan* includes goals and policies that address public safety, including hazardous materials and fire safety. In general, the goals and policies provide support for the laws and regulations that are described above and below. The Community Safety Element and the Environmental Protection Element of the *San Francisco General Plan* contain the following objective and policies relating to hazardous materials:

Community Safety Element

Policy 2.12: Enforce state and local codes that regulate the use, storage and transportation of hazardous materials in order to prevent, contain and effectively respond to accidental releases.

Environmental Protection Element

Objective 21: Control Illegal Disposal and Eliminate Land Disposal of Untreated Waste

Policy 21-1: Prevent illegal disposal.

Policy 21-2: Strengthen enforcement efforts.

Maher Ordinance, San Francisco Public Works Code, Chapter 10, Article 20

Chapter 10, Article 20 of the San Francisco Public Works Code is known as the “Maher Ordinance.” The Maher Ordinance is legislation that requires an investigation of hazardous wastes in soil at construction sites as a prerequisite for certain building requirements. The Maher Ordinance protects the safety of the city’s workers, residents, and occupants from hazardous waste contamination.

The Maher Ordinance imposes three major requirements on proposed developments:

- A site history report to describe past site uses;
- A soil analysis report that evaluates results of chemical tests; and

- A site mitigation report if the soil is contaminated.

The reports are submitted to the Department of Public Works (DPW) and Department of Public Health (DPH). Article 20 regulations take effect at the time of the building permit application for projects located on filled land requiring excavation. The Article 20 investigation is required if:

- More than 50 cubic yards of soil are to be disturbed; and
- The project site is bayward of the historic high tide line (i.e., in an area of Bay fill), as designated on an official city map; or
- The site is at any other location in the city designated for investigation by the Director of the DPW.

Parcels qualifying under the third condition are places where the Director has reason to believe hazardous wastes are present, such as sites listed by a public agency, or sites known to have leaking underground storage tanks.

San Francisco Municipal Code Article 22 (Hazardous Waste Management)

The Board of Supervisors adopted Article 22, Hazardous Waste Management, in the San Francisco Municipal Code to authorize the Director of the DPH, as the certified unified program agency approved pursuant to Chapter 6.11 of the Health and Safety Code, to implement and enforce the requirements of the California Hazardous Waste Control Act. The act is applicable to generators of hazardous waste and persons operating pursuant to a permit-by-rule, conditional authorization or conditional exemption set forth in Health and Safety Code Section 25404(c)(1).

The Director has the authority to certify unified program agencies by Health and Safety Code Section 25404(c)(1) to implement and enforce the provisions of the Hazardous Waste Control Act as set forth in California Health and Safety Code, Division 20, Chapter 6.5, and the minimum standards of management of hazardous waste as specified in Title 22 of the California Code of Regulations, Chapter 30, Division 4.

Throughout the City and County of San Francisco, a Hazardous Materials Management Plan must be prepared and submitted to DPH by businesses that use or store certain quantities of hazardous materials. In addition, the San Francisco Environmental Health Section is the Unified Program Agency for the City and County of San Francisco providing oversight of the following activities or substances conducted or handled by businesses within the County: hazardous waste generators, hazardous waste treatment, USTs, aboveground storage tanks (ASTs), chlorofluorocarbon recycling, and medical waste.

Lead-Based Paint Regulations

Work that could result in disturbance of lead paint must comply with Section 3423 of the San Francisco Building Code, Work Practices for Lead-Based Paint on Pre-1979 Buildings and Steel Structures. Section 3407 applies to the exterior of all buildings or steel structures on which original construction was completed prior to 1979 (which are assumed to have lead-based paint on their surfaces, unless demonstrated otherwise through laboratory analysis), and to the interior of residential buildings, hotels, and childcare centers. Section 3423 contains performance standards, including establishment of containment barriers to protect human health and the environment as effectively as those required by the

Housing and Urban Development (HUD) Guidelines (the most recent Guidelines for Evaluation and Control of Lead-Based Paint Hazards). Section 3423 also identifies practices that may not be used in disturbance or removal of lead-based paint. Any person performing work subject to Section 3407 shall, to the maximum extent possible, protect the ground from contamination during exterior work; protect floors and other horizontal surfaces from work debris during interior work; and make all reasonable efforts to prevent migration of lead paint contaminants beyond containment barriers during the course of the work. Cleanup standards require the removal of visible work debris, including the use of a High Efficiency Particulate Air Filter vacuum following interior work.

The ordinance also includes notification requirements and requirements for signs. Prior to the commencement of work, the responsible party must provide written notice to DBI that includes:

- The address and location of the project;
- The scope of work, including specific location;
- Methods and tools to be used;
- The approximate age of the structure;
- Anticipated job start and completion dates for the work;
- Whether the building is residential or non-residential, and whether it is owner-occupied or rental property;
- The dates by which the responsible party has or will fulfill any tenant or adjacent property notification requirements; and
- The name, address, telephone number, and pager number of the party who will perform the work.

Further notice requirements include posting a sign when containment is required; posting a notice to occupants, including availability of a pamphlet related to protection from lead in the home; and providing notice of early commencement of work (if requested by occupant). Section 3423 contains provisions regarding inspection and sampling for compliance by DBI, and describes penalties for non-compliance with the requirements of the ordinance.

Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR, the Proposed Project would result in a significant impact with respect to hazards and hazardous materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;

- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- Be 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, and would result in a safety hazard for people residing or working in the Project Area;
- Be located in the vicinity of a private airstrip, and would result in a safety hazard for people residing or working in the Project Area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to a significant risk of loss, injury or death involving fires.

Approach to Analysis

The evaluation of the Proposed Project's hazards and hazardous materials impacts considers the potential development of each of the three components of the Proposed Project in relation to the environmental setting and regulatory setting described above.

For the reasons discussed below, the Proposed Project would not result in impacts related to the following significance criteria:

- ***Airport or Airstrip Hazards.*** The Project Area is not within an airport land use plan area, nor is it in the vicinity of a private airstrip. Therefore, these criteria are not applicable and not analyzed below.
- ***Emissions near Schools.*** One school is located in the Draft Plan Area: the Presidio Knolls School, located at 250 10th Street. However, implementation of the Proposed Project would not result in development of any industrial or other uses that would include significant hazardous emissions or handle hazardous or acutely hazardous materials, substances, or wastes that would adversely affect the Presidio Knolls School. No other school is located within 0.25 mile of the Project Area. Therefore, the Proposed Project would cause no impact relative to this criterion.
- ***Fire Hazards.*** The Project Area is not located in an area that is at a particular risk of fires as compared to other areas within the city. Building Code requirements applicable to all development that could result from the Proposed Project include minimum fire safety measures to minimize the potential for fires to cause significant loss, injury, or death. Consequently, the Proposed Project would not expose people or structures to a significant risk of loss, injury or death involving fires, and so no impact would result with respect to this criterion.

It is noted that transportation and street network improvements that would be implemented as part of the Draft Plan would not have any impacts with respect to hazards and hazardous materials, as they would not result in any of the impacts listed under "Significance Criteria," above. For this reason, these impacts are not discussed any further in this section.

Impacts of the Western SoMa Community Plan and the Rezoning of Adjacent Parcels (Program-Level Analysis)

Impact HZ-1: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would expose the public to hazardous building materials through the routine transport, use, or disposal of such materials during construction. (Less than Significant)

The implementation of the Draft Plan or the Rezoning of Adjacent Parcels would not directly involve any disturbances to existing structures and, therefore, would have no direct impact related to potential hazardous building materials. However, these components of the Proposed Project indirectly could cause impacts by creating incentives for development that may include demolition activities. Impacts that could result from human exposure to hazardous materials associated with potential demolition activities are discussed below.

Lead-Based Paint

Based on the age of many of the structures within the Draft Plan Area and on the Adjacent Parcels, lead-based paint may be found. As noted above, building demolition must comply with Chapter 34, Section 3423 of the San Francisco Building Code, Work Practices for Lead-Based Paint on Pre-1979 Buildings and Steel Structures. Where there is any work that may disturb or remove lead paint on the exterior of any building built prior to December 31, 1978, Chapter 34 requires specific notification and work standards and identifies prohibited work methods and penalties.

Chapter 34 applies to buildings or steel structures on which original construction was completed prior to 1979 (which are assumed to have lead-based paint on their surfaces), where more than 10 total square feet of lead-based paint would be disturbed or removed. Section 3423 contains performance standards, including establishment of containment barriers, at least as effective at protecting human health and the environment as those in the Housing and Urban Development (HUD) Guidelines (the most recent guidelines for evaluation and control of lead-based paint hazards) and identifies prohibited practices that may not be used in disturbance or removal of lead-based paint. Any person performing work subject to the Section 3423 must make all reasonable efforts to prevent migration of lead paint contaminants beyond containment barriers during the course of the work, and any person performing regulated work must make all reasonable efforts to remove all visible lead paint contaminants from all regulated areas of the property prior to completion of the work.

Section 3423 also includes notification requirements, contents of notice, and requirements for signs. Notification includes notifying bidders for the work of any paint-inspection reports verifying the presence or absence of lead-based paint in the regulated area of a specific proposed project. Prior to commencement of work, the responsible party must provide written notice to the Director of the DBI regarding the location of the project; the nature and approximate square footage of the painted surface being disturbed and/or removed; anticipated job start and completion dates for the work; whether the responsible party has reason to know or presume that lead-based paint is present; whether the building is residential or non-residential, owner-occupied or rental property; the approximate number of dwelling units, if any; the dates by which the responsible party has or will fulfill any tenant or adjacent property notification requirements; and the name, address, telephone number, and pager number of the party who

will perform the work.⁹ The ordinance contains provisions regarding inspection and sampling for compliance by DBI, and enforcement, and describes penalties for non-compliance with the requirements of the ordinance.

These regulations and procedures, which are already required by the San Francisco Building Code, would ensure that significant impacts related to lead-based paint during building demolition would be avoided.

Building Asbestos

ACM may be found within an existing structure proposed for demolition or renovation that is located within the Draft Plan Area or on one or more of the Adjacent Parcels. Section 19827.5 of the California Health and Safety Code, adopted January 1, 1991, requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. The BAAQMD is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified 10 days in advance of any proposed demolition or abatement work.

Notification includes the names and addresses of operations and persons responsible; description and location of the structure to be demolished/alterd including size, age, and prior use, and the approximate amount of friable asbestos; scheduled starting and completion dates of demolition or abatement; nature of planned work and methods to be employed; procedures to be employed to meet BAAQMD requirements; and the name and location of the waste disposal site to be used. The BAAQMD randomly inspects asbestos removal operations. In addition, the BAAQMD will inspect any removal operation concerning which a complaint has been received.

The local office of the Cal OSHA must be notified of asbestos abatement to be carried out. Asbestos abatement contractors must follow state regulations contained in the California Code of Regulations, Title 8 Section 1529 and Sections 341.6 through 341.14, where there is asbestos-related work involving 100 square feet or more of ACM. Asbestos removal contractors must be certified as such by the Contractors Licensing Board of the State of California. The owner of the property where abatement is to occur must have a Hazardous Waste Generator Number assigned by and registered with the Office of the California Department of Health Services in Sacramento. The contractor and hauler of the material is required to file a Hazardous Waste Manifest that details the hauling of the material from the site and the disposal of it. Pursuant to California law, DBI would not issue the required permit until the applicant has complied with the notice requirements described above.

These regulations and procedures, already established as a part of the permit review process, would ensure that any impacts of demolition due to ACM would be less than significant.

⁹ Further notice requirements include Sign When Containment is Required, Notice by Landlord, Required Notice to Tenants, Availability of Pamphlet related to protection from lead in the home, Notice by Contractor, Early Commencement of Work [by Owner, Requested by Tenant], and Notice of Lead Contaminated Dust or Soil, if applicable.

Conclusion

Because all of the demolition activities within the Draft Plan Area or on the Adjacent Parcels would be required to adhere to an established and rigorous regulatory framework regarding hazardous building materials, any indirect effects through the routine transport, use, or disposal of hazardous materials would represent a less-than-significant impact.

Mitigation: None required.

Impact HZ-2: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would result in a reasonably foreseeable or accidental release of mercury or polychlorinated biphenyls (PCBs) in a way that would create a significant hazard to the public or environment. (Less than Significant with Mitigation)

While abatement programs similar to those described for asbestos and lead-based paint have not been adopted for PCB and mercury testing and cleanup, items containing PCBs and mercury that are intended for disposal must be managed as hazardous waste and must be handled in accordance with applicable federal, state, and local laws. Implementation of **Mitigation Measure M-HZ-2**, below, would reduce the indirect impact associated with potential PCB and mercury exposure that could occur with implementation of the Draft Plan or Rezoning of Adjacent Parcels to a less-than-significant level.

Mitigation Measure

M-HZ-2: Hazardous Building Materials Abatement. The City shall condition future development approvals to require that the subsequent project sponsors ensure that any equipment containing polychlorinated biphenyls (PCBs) or mercury, such as fluorescent light ballasts, are removed and properly disposed of according to applicable federal, state, and local laws prior to the start of renovation, and that any fluorescent light tube fixtures, which could contain mercury, are similarly removed intact and properly disposed of. Any other hazardous materials identified, either before or during work, shall be abated according to applicable federal, state, and local laws.

Significance after Mitigation: Less than Significant.

Impact HZ-3: Construction related to future development within the Draft Plan Area and on the Adjacent Parcels would not expose the public or the environment to unacceptable levels of known or newly discovered hazardous materials as a result of a site being located on a hazardous materials list site. (Government Code Section 65962.5). (Less than Significant with Mitigation)

As described under “Environmental Setting,” above, the Project Area, including the Draft Plan Area and Adjacent Parcels, has a long history of hazardous materials use associated with past industrial and light industrial land uses. Releases, leaks, or disposal of chemical compounds, such as petroleum

hydrocarbons, on or below the ground surface can lead to contamination of underlying soil and groundwater. Depending on the conditions and intensity of the release, groundwater contamination can migrate beyond the property boundary of the original release site. Disturbance of a previously contaminated area through grading or excavation operations could expose workers or other members of the public to health hazards from physical contact with contaminated materials or hazardous vapors. Improper handling or storage of contaminated soil and groundwater can cause further exposure to these hazards, or potentially spread contamination through surface water runoff or airborne dust. In addition, contaminated groundwater can spread down-gradient, potentially contaminating subsurface areas of surrounding properties.

Many of these sites are associated with releases from underground fuel storage tanks and some have been fully characterized and remediated to the satisfaction of the overseeing agency. However, there are others where the contamination has not been fully characterized or cannot be reached beneath building foundations.

Any earthwork activities associated with potential future development encouraged by the Draft Plan or Rezoning of Adjacent Parcels could expose contamination from one of these release sites. In addition, there is always a potential to encounter previously unidentified contamination. If significant levels of hazardous materials in site soils or groundwater are discovered, health and safety risks to construction workers and the public at large could occur. Exposure to hazardous materials could cause various short-term and/or long-term health effects. Possible health effects could be acute (immediate, or of short-term severity), chronic (long-term, recurring, or resulting from repeated exposure), or both. Acute effects, often resulting from a single exposure, could result in a range of effects from minor to major, such as nausea, vomiting, headache, dizziness, or burns. Chronic exposure could result in systemic damage or damage to organs, such as the lungs, liver, or kidneys. Health effects would be specific to each hazardous material. In addition, contaminated soils and groundwater can present adverse effects to the environment, including damage to the environment that could cause a significant impact. However, with implementation of **Mitigation Measure M-HZ-3**, below, the impacts associated with encountering subsurface contamination through potential future development encouraged by the Draft Plan or Rezoning of Adjacent Parcels would be reduced to less-than-significant levels.

Mitigation Measure

M-HZ-3: Site Assessment and Corrective Action. For any project that is not located bayward of the historic high tide line, the project sponsor shall ensure that a site-specific Phase I environmental site assessment is prepared prior to development. The site assessment shall include visual inspection of the property; review of historical documents; and review of environmental databases to assess the potential for contamination from sources such as underground storage tanks, current and historical site operations, and migration from off-site sources. The project sponsor shall ensure that the Phase I assessment and any related documentation is provided to the Planning Department's Environmental Planning (EP) division and, if required by EP, to Department of Public Health (DPH) for review and consideration of potential corrective action.

Where the Phase I site assessment indicates evidence of site contamination, additional data shall be gathered during a Phase II investigation, including sampling and laboratory analysis of the soil and groundwater for the suspected chemicals to identify the nature and extent of contamination. If the level(s) of chemical(s) would create an unacceptable risk to human health or the environment, appropriate cleanup levels for each chemical, based on current and planned land use, shall be determined in accordance with accepted procedures adopted by the lead regulatory agency providing oversight (e.g., the Department of Toxic Substances Control [DTSC], the Regional Water Quality Control Board [RWQCB], or DPH). At sites where there are ecological receptors such as sensitive plant or animal species that could be exposed, cleanup levels shall be determined according to the accepted ecological risk assessment methodology of the lead agency, and shall be protective of ecological receptors known to be present at the site.

If agreed-upon cleanup levels were exceeded, a remedial action plan or similar plan for remediation shall be prepared and submitted review and approval by the appropriate regulatory agency. The plan shall include proposed methods to remove or treat identified chemicals to the approved cleanup levels or containment measures to prevent exposure to chemicals left in place at concentrations greater than cleanup levels.

Upon determination that a site remediation has been successfully completed, the regulatory agency shall issue a closure letter to the responsible party. For sites that are cleaned to levels that do not allow unrestricted land use, or where containment measures were used to prevent exposure to hazardous materials, the DTSC may require a limitation on the future use of the property. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners. A risk management plan, health and safety plan, and possibly a cap maintenance plan could be required. These plans would specify procedures for preventing unsafe exposure to hazardous materials left in place and safe procedures for handling hazardous materials should site disturbance be required. The requirements of these plans and the land use restriction shall transfer to the new property owners in the event that the property is sold.

Significance after Mitigation: Less than Significant.

Impact HZ-4: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would impair implementation of or physically interfere with an adopted emergency response or evacuation plan. (Less than Significant)

The City and County of San Francisco ensures fire safety primarily through provisions of the Building Code and the Fire Code. Existing buildings are required to meet standards contained in these codes. In addition, the final building plans for any new residential project greater than two units are reviewed by the San Francisco Fire Department (as well as DBI), in order to ensure conformance with these provisions.

Any proposed development that would occur within the Draft Plan Area or on the Adjacent Parcels would conform to these standards, including development of an emergency procedure manual and an exit drill plan. In this way, potential fire hazards (including those associated with hydrant water pressure and emergency access) would be mitigated during the permit review process.

No interference with emergency response plans or emergency excavation plans would be expected. Any future development projects would be reviewed by DBI and potentially coordinated with OES before the final building permits are issued. Therefore, neither the Draft Plan nor the Rezoning of Adjacent Parcels would impair implementation of or physically interfere with an adopted emergency response or evacuation plan.

Mitigation: None required.

Impact HZ-5: Operations of facilities within the Draft Plan Area and on the Adjacent Parcels would not result in a significant impact involving the handling of general commercial/retail and household hazardous waste through the routine transport, use, or disposal of hazardous materials. (Less than Significant)

Implementation of the Draft Plan could ultimately result in residential, commercial, and light industrial development (among other types). Commercial/retail, building support, and light industrial activities would likely use hazardous chemicals commonly used in such establishments. These chemicals would include familiar materials such as toners, paints, lubricants, kitchen and restroom cleaners, pesticides and other maintenance materials. These common consumer products would be used for the same purposes as in any commercial, light industrial, or other similar uses. Small quantities of hazardous materials, including cleaning products, fuels, oils, pesticides, and lubricants, are also associated with residential land uses. Activities such as automobile or building maintenance, as well as landscaping, can become sources of releases of hazardous materials.

Because general commercial/retail and household hazardous materials are typically handled and transported in small quantities, and because the health effects associated with them are generally not as serious as industrial uses, operation of the new uses in the Draft Plan Area would not cause an adverse effect on the environment with respect to the use, storage, or disposal of general office and household hazardous materials generated. For commercial/retail uses, the regulatory framework requires appropriate training of employees in the use, storage, and disposal of any hazardous materials and wastes. Therefore, with adherence to the existing regulatory requirements, the impact related to routine transport, use, or disposal of hazardous materials would be less than significant.

The Rezoning of Adjacent Parcels would change the existing zoning of the affected parcels from Heavy Commercial (CM) and Service/Light Industrial/ Residential (SLR) to downtown General Commercial (C-3-G) along the south side of Mission Street between 10th Street and the west side of Ninth Street, and to Eastern Neighborhoods Mixed Use Office (MUO) along the south side of Mission Street between Ninth Street and the west side of Seventh Street. Routine use of hazardous materials would likely be relatively similar to existing uses, or could be reduced due to a reduction in light industrial uses. Overall, there

would not be any substantial change to the handling of hazardous materials or waste, and the resulting impact would be less than significant.

Based on the above proposed land uses and associated uses of hazardous materials and wastes in the Draft Plan Area and on the Adjacent Parcels, the existing regulatory requirements would ensure that the adverse effects would be less than significant.

Mitigation: None required.

350 Eighth Street Project (Project-Level Analysis)

Impact HZ-6: The proposed 350 Eighth Street project would not expose the public to hazardous building materials through the routine transport, use, or disposal of such materials during construction. (Less than Significant)

Lead-Based Paint

The existing structure at the 350 Eighth Street project site is more than 45 years old, and so could contain lead-based paint. Demolition must comply with Chapter 34, Section 3423 of the San Francisco Building Code, Work Practices for Lead-Based Paint on Pre-1979 Buildings and Steel Structures, as discussed above in Impact HZ-1. As such, for any work that could disturb or remove lead paint on the exterior of any building built prior to December 31, 1978, Chapter 34 requires specific notification and work standards and identifies prohibited work methods and penalties. These regulations and procedures, which include notification requirements in accordance with the San Francisco Building Code, would ensure that impacts related to lead-based paint during demolition would not be significant.

Building Asbestos

The Phase I environmental assessment for the 350 Eighth Street project site included a limited survey for the presence of ACMs at the site.¹⁰ A total of 20 bulk samples of suspect materials, including spray-applied ceiling texture, drywall systems, and vinyl flooring (mastic and linoleum), were collected from the site. Based on the results of this limited asbestos survey, no regulated ACMs were identified in samples submitted for analysis. However, due to the limited nature of the survey, which is not considered comprehensive, ACMs could still potentially be present. ACMs that may be found within the existing sheds proposed for demolition would nonetheless be subject to Section 19827.5 of the California Health and Safety Code, which requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. As discussed above in Impact HZ-1, compliance with these regulations and procedures, already established as a part of the permit review process, would ensure that any potential direct impacts related to asbestos due to demolishing existing structures on the 350 Eighth Street project site would be less than significant.

¹⁰ Blackstone Consulting, Phase I Environmental Site Assessment, 8th & Harrison Streets Redevelopment, San Francisco, California, June 11, 2007.

Mitigation: None required.

Impact HZ-7: Demolition associated with the proposed 350 Eighth Street project would not be expected to result in a reasonably foreseeable or accidental release of mercury or PCBs in a way that would create a significant hazard to the public or environment. (Less than Significant with Mitigation)

While abatement programs similar to those described for asbestos and lead-based paint have not been adopted for PCB and mercury testing and cleanup, items containing PCBs and mercury that are intended for disposal must be managed as hazardous waste and must be handled in accordance with applicable federal, state, and local laws prior to the start of demolition. Implementation of Mitigation Measure M-HZ-2, above, would reduce direct impacts of potential hazardous building materials to less-than-significant levels.

Mitigation Measure: Implement **Mitigation Measure M-HZ-2, Hazardous Building Materials Abatement**, discussed on page 4.O-14.

Significance after Mitigation: Less than Significant.

Impact HZ-8: Construction related to the proposed 350 Eighth Street project would not expose construction workers, the public, or the environment to unacceptable levels of known or newly discovered hazardous materials as a result of a site being located on a hazardous materials list site (Government Code Section 65962.5). (Less than Significant with Mitigation)

The 350 Eighth Street project site is listed as a hazardous materials release site, although the case is closed.¹¹ The findings of the Phase I environmental assessment concluded that no recognized environmental conditions were present at this site. However, the 350 Eighth Street project site has had a long history of various uses which handled hazardous materials. Ground-disturbing activities, particularly in areas that may have previously been inaccessible due to existing building foundations, could still encounter previously unidentified contamination and potentially expose workers or the public at large to adverse health effects. As discussed above, if significant levels of hazardous materials in site soils or groundwater are discovered, health and safety risks to workers and the public could occur. Exposure to hazardous materials could cause various short-term and/or long-term health effects. Possible health effects could be acute (immediate, or of short-term severity), chronic (long-term, recurring, or resulting from repeated exposure), or both. Acute effects, often resulting from a single exposure, could result in a range of effects from minor to major, such as nausea, vomiting, headache, dizziness, or burns. Chronic exposure could result in systemic damage or damage to organs, such as the lungs, liver, or kidneys. Health effects would be specific to each hazardous material. In addition, contaminated soils and groundwater can present adverse effects to the environment including damage to the environment.

¹¹ *Ibid.*

Without implementation of proper precautions, construction workers or the local community could be exposed to hazardous materials during excavation, grading, and dewatering, or during related site investigation and remediation. Vapors, if present, could also accumulate in structures constructed as a result of the construction of the 350 Eighth Street project, causing nuisance vapors, adverse health effects, or flammable or explosive conditions. Therefore, impacts associated with construction within contaminated soil and groundwater are significant.

Implementation of **Mitigation Measure M-HZ-8** would reduce this impact to a less-than-significant-level by requiring appropriate assessment of the potential for contaminated soil or groundwater and requiring implementation of site investigation and remediation activities should the potential for contamination be identified.

Mitigation Measure:

M-HZ-8: Site Assessment and Corrective Action. If potential exposure to vapors is suspected through determinations from the Phase I or Phase II work required by Mitigation Measure M-HZ-3, Site Assessment and Corrective Action, a screening evaluation shall be conducted in accordance with guidance developed by the Department of Toxic Substances Control (DTSC) in its *Final Guidance for Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* (October 2011) to estimate worst-case risks to building occupants from vapor intrusion using site-specific data and conservative assumptions specified in the guidance. If an unacceptable risk were indicated by this conservative analysis, then additional site data shall be collected and a site-specific vapor intrusion evaluation, including fate and transport modeling, shall be required to more accurately evaluate site risks. Should the site-specific evaluation identify substantial risks, then additional measures shall be required to reduce risks to acceptable levels. These measures could include remediation of site soil and/or groundwater to remove vapor sources, or, should this be infeasible, use of engineering controls such as a passive or active vent system and a membrane system to control vapor intrusion. Where engineering controls are used, a deed restriction shall be required, and shall include a description of the potential cause of vapors, a prohibition against construction without removal or treatment of contamination to approved risk-based levels, monitoring of the engineering controls to prevent vapor intrusion until risk-based cleanup levels have been met, and notification requirements to utility workers or contractors who may have contact with contaminated soil and groundwater while installing utilities or undertaking construction activities.

The screening level and site-specific evaluations shall be conducted under the oversight of the San Francisco Department of Public Health (DPH), and methods for compliance shall be specified in the site mitigation plan prepared in accordance with this measure, and would be subject to review and approval by the DPH. The deed restriction, if required, shall be recorded at the San Francisco Office of the Assessor-Recorder after approval by the DPH and DTSC.

Level of Significance after Mitigation: Less than Significant.

Impact HZ-9: The proposed 350 Eighth Street project would not impair implementation of or physically interfere with an adopted emergency response or evacuation plan. (Less than Significant)

As discussed under Impact HZ-4 above, the City and County of San Francisco ensures fire safety primarily through provisions of the Building Code and the Fire Code. Existing buildings are required to meet standards contained in these codes. In addition, the final building plans for any new residential project greater than two units are reviewed by the San Francisco Fire Department (as well as DBI), in order to ensure conformance with these provisions.

The proposed development at 350 Eighth Street would be required to conform to these standards, including the preparation of an emergency procedure manual and an exit drill plan. In this way, potential fire hazards (including those associated with hydrant water pressure and emergency access) would be mitigated during the permit review process. Therefore, the implementation of the 350 Eighth Street project would not impair implementation of or physically interfere with an adopted emergency response or evacuation plan.

Mitigation: None required.

Impact HZ-10: Operation of the 350 Eighth Street project would not result in a significant impact involving the handling of general commercial/retail and household hazardous waste through the routine transport, use, or disposal of hazardous materials. (Less than Significant)

Implementation of the 350 Eighth Street project could ultimately reduce the amount of hazardous materials handled at the project site. Currently the 350 Eighth Street project site is used as a maintenance yard, which includes the storage and handling of petroleum products and wastes. The uses proposed on this site, including residential, commercial, arts-related, and community-serving uses, could also include small quantities of routine hazardous materials, including cleaning products, fuels, oils, pesticides and lubricants. However, because general household hazardous materials are typically handled and transported in small quantities, and because the health effects associated with them are generally not as serious as light industrial uses, operation of the proposed uses at the 350 Eighth Street project site would not cause an adverse effect on the environment with respect to the use, storage, or disposal of the anticipated hazardous materials. Therefore, the 350 Eighth Street project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and this impact would be less than significant.

Mitigation: None required.

Cumulative Impacts

Impact C-HZ: The implementation of the Proposed Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute considerably to a significant cumulative impact with respect to hazardous materials. (Less than Significant)

As discussed above, the Proposed Project could result in significant impacts with respect to hazards and hazardous materials. However, implementation of the identified mitigation measures would reduce those impacts to less than significant levels. Hazardous material impacts typically occur in a local or site-specific context rather than in a cumulative context. The implementation of the Proposed Project, with incorporation of the identified mitigation measures, would have a less-than-significant hazardous materials impact on the public and the environment in the vicinity of the Project Area.

Any other development in the region, including the *Central Corridor Plan*, the 5M Project, Moscone East, and 801 Brannan Street/One Henry Adams Street Project, would be required to comply with the same or similar regulatory framework as the Proposed Project. This includes federal and state regulatory requirements for transporting hazardous materials or cargo (including fuel and other materials used in all motor vehicles) on public roads (Cal EPA and Caltrans); disposing hazardous materials (Cal EPA, DTSC, San Francisco Department of Public Health); and preparing hazardous materials business plans for businesses handling hazardous materials. Adherence to these regulations would minimize exposure and ultimately result in removing hazardous materials from the region. Therefore, the Proposed Project would not contribute considerably to any potential cumulative impacts with respect to hazards and hazardous materials and this impact would be less than significant.

Mitigation: None required.

P. Mineral and Energy Resources

Environmental Setting

All land in San Francisco, including the Project Area, is designated Mineral Resource Zone 4 (MRZ-4) by the California Geological Survey (formerly known as the Department of Conservation, Division of Mines and Geology) (CDMG) under the Surface Mining and Reclamation Act of 1975 (SMARA) (Pub. Res. Code §2710, et seq.).¹ This designation indicates that there is not adequate information available for assignment to any other Mineral Resource Zone, and that the Project Area is not a designated area of significant mineral deposits.

Regulatory Setting

Mineral Resources

SMARA was enacted to ensure safe and sustainable use of California's mineral resources. The two primary objectives are to ensure access to valuable mineral resources over time and to promote reclamation of surface mining operations and restoration of surface mines to safe conditions. Implementation of SMARA occurs cooperatively between the state and local governments. CDMG prepares technical reports identifying mineral land classification based solely on geology and economics without regard to existing land use or land ownership. The State Mining and Geology Board then uses the technical reports to designate deposits that are economically important to the region, state, or nation. As noted above, all of San Francisco, including the Project Area, is designated MRZ-4. Local county and municipal governments then create land use policies and regulations through which SMARA is implemented. The City has not delineated any portion of the Project Area as a locally important mineral resource recovery site on any land use plan.

Energy Resources

The federal Energy Policy Act of 2005 seeks to reduce reliance on non-renewable energy resources and provide incentives to reduce current demand on these resources. For example, pursuant to the Act, consumers and businesses can attain federal tax credits for purchasing fuel-efficient appliances and products, buying hybrid vehicles, building energy-efficient buildings, and improving the energy efficiency of commercial buildings. Additionally, tax credits are available for the installation of qualified fuel cells, stationary microturbine power plants, and solar power equipment.

State Senate Bill 1389, passed in 2002, requires the California Energy Commission to biannually develop an integrated energy plan for electricity, natural gas, and transportation fuels, for the California Energy Report. The draft California Energy Report calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies several

¹ CDMG, Open File Report 96-03 and Special Report 146 Parts I and II.

strategies, including encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

California's Building Energy Efficiency Standards, which are set forth in Title 24, Part 6, of the California Code of Regulations, govern all aspects of building construction. Included in Part 6 of the Code are standards mandating energy efficiency measures in new construction. Since its establishment in 1977, the building efficiency standards (along with standards for energy efficiency in appliances) have contributed to a reduction in electricity and natural gas usage and costs in California. The standards are updated every three years to incorporate new energy efficiency technologies. The latest update to the Title 24 standards became effective on August 1, 2009, and reflect the California Building Standards Commission approved 2008 Building Energy Efficiency Standards. The standards regulate energy consumed in buildings for heating, cooling, ventilation, water heating, and lighting. Title 24 is implemented through the local planning and permit process.

San Francisco adopted a Green Building Code in 2008 and, in 2010, adopted the State of California's *Green Building Standards Code* ("CALGreen"), with modifications. The City's Green Building Code is codified in Chapter 13C of the *San Francisco Building Code*. Chapter 13C requires new buildings to use a minimum of 15 percent less energy (25 percent less for most commercial buildings larger than 25,000 square feet) than is required under the state's standards contained in Title 24 (2008 version). As of January 2012, the City also requires these larger commercial buildings to generate renewable energy on site or purchase renewable energy credits. Chapter 13C, along with Chapter 13A and with Chapter 12A of the *San Francisco Housing Code*, also requires projects to meet minimum standards for water conservation (in accordance with the City's Commercial and Residential Water Conservation Ordinances). For commercial buildings in excess of 25,000 square feet, new projects must reduce potable water use for landscaping by 50 percent and potable water use within the building by 30 percent, compared to conventional construction as set forth in the federal Energy Policy Act of 1992.

Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR, the Proposed Project would result in a significant impact with respect to mineral and energy resources if it would:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state;
- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan; or
- Encourage activities which result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner.

Approach to Analysis

The evaluation of the Proposed Project's impacts on mineral and energy resources considers potential development of each of the three components of the Proposed Project in relation to the environmental and regulatory setting described above.

For the reasons described below, the Proposed Project would not result in any impact related to either of the mineral resources-related significance criteria.

- ***Loss of Availability of a Known Mineral Resource.*** No known mineral deposits exist in the vicinity of the Project Area. Thus, none of the components of the Proposed Project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. Furthermore, since the Project Area is already developed, future evaluation or designation of these areas by CDMG would not affect or be affected by the Proposed Project. There are no operational mineral resource recovery sites in the vicinity of the Project Area whose operations or accessibility would be affected by the implementation of the Proposed Project. Therefore, the implementation of the Proposed Project would have no impact on the availability of a known mineral resource.
- ***Loss of Availability of a Locally Important Mineral Resource Recovery Site.*** See discussion of "Loss of Availability of a Known Mineral Resource" above. There are no locally important mineral resource recovery sites delineated in the Project Area, and so the Proposed Project would have no impact on such sites.

It is noted that transportation and street network improvements that would be implemented as part of the Draft Plan would not have any impacts on mineral and energy resources, as they would not result in any of the impacts listed under "Significance Criteria," above. For this reason, these impacts are not discussed any further in this section.

Impacts of the Western SoMa Community Plan and the Rezoning of Adjacent Parcels (Program-Level Analysis)

Impact MN-1: Neither the implementation of the Draft Plan nor the Rezoning of Adjacent Parcels would result in wasteful consumption of fuel, water, or energy. (Less than Significant)

Approval of the Draft Plan and the Rezoning of Adjacent Parcels would not result in wasteful consumption of fuel, water, or energy because these planning decisions would have no direct effect on the environment. These approvals could, however, cause an indirect effect relating to the consumption of fuel, water, or energy because any future development that would occur consistent with them would cause demands on these resources. However, any such future project would be infill development located near existing modes of public transportation, and existing water supply and energy infrastructure. Further, future development projects in the Project Area would be subject to the most current energy and water efficiency standards in effect at the time the project is proposed. Therefore, the implementation of the Draft Plan and the Rezoning of Adjacent Parcels would not result in wasteful consumption of fuel, water, or energy, and this impact would be less than significant.

Mitigation: None required.

Impacts of 350 Eighth Street Project (Project-Level Analysis)

Impact MN-2: The proposed 350 Eighth Street project would not result in wasteful consumption of fuel, water, or energy. (Less than Significant)

Serving the demand for fuel, water, and energy generated by the 350 Eighth Street project would not result in wasteful consumption, since the 350 Eighth Street project would comply with all of the latest building codes and energy and water efficiency standards. However, it is possible that some fuel, water, or energy could be used inefficiently by future occupants of the project. Therefore, although the 350 Eighth Street project could result in some wasteful consumption of fuel, water and energy, this potential would cause a less-than-significant impact.

Mitigation: None required.

Cumulative Impacts

Impact C-MN: The implementation of the Proposed Project in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute considerably to a significant cumulative impact related to fuel, water, or energy resources. (Less than Significant)

All development that would occur under the Proposed Project would be required to comply, independent of the CEQA process for the Proposed Project, with all state and local requirements concerning energy and water efficiency. Other projects proposed in the area, including *Central Corridor Plan*, the 5M project, the Moscone East project, and the 801 Brannan Street/One Henry Adams Street project, likewise would be subject to the same or similar requirements. Because these efficiency requirements are set with cumulative conditions in mind, the Proposed Project, combined with past, present, and reasonably foreseeable future projects in the vicinity, would not result in wasteful consumption of fuel, water, or energy, and the cumulative impact would be less than significant.

Mitigation: None required.

4.Q. Agricultural and Forest Resources

Environmental Setting

The Project Area is located within an urban area of the city that is used for the mix of residential, commercial, and other uses described in Section IV.A, Land Use. None of the land in the Project Area is designated for agricultural or forest-related uses.

Regulatory Setting

California Important Farmland Inventory System and Farmland Mapping and Monitoring Program

The California Department of Conservation, under the Division of Land Resource Protection, has established the FMMP. The FMMP monitors the conversion of the state's farmland to and from agricultural use. The map series identifies eight classifications, including five agricultural land classifications¹ and three non-agricultural land classifications, including Urban and Built-Up Lands.² The FMMP identifies the Project Area as Urban and Built-Up Land, which is defined as "land [that] is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes." No portion of the Project Area is classified as any of the agricultural land classifications.

California Land Conservation Act of 1965 – "Williamson Act"

The California Land Conservation Act of 1965 (Williamson Act) authorizes local governments to enter into contracts with private landowners to restrict specific parcels of land to agricultural or related open space use for a rolling 10-year period (Government Code Provisions Section 51200 et seq.).³ In return, landowners' property taxes are assessed at a much lower than normal rate because they are based upon farming and open space uses as opposed to full market value. No portion of the Project Area is subject to a Williamson Act contract.

¹ The five agricultural land classifications ("Farmland") include Prime Farmland, which consists of the land best able to sustain long-term crop production; Farmland of Statewide Importance, which are lands with similar land use, irrigation system and physical characteristics as prime farmland but with minor shortcomings such as steeper soils; Unique Farmland, which consists of lands with lesser quality soils but that are used to produce California's leading agricultural cash crops; Farmland of Local Importance, which are designated by individual counties; and Grazing Land, which consists of lands most suited for livestock grazing.

² The remaining two non-agricultural classifications include: Water, including perennial water bodies greater than 40 acres; and Other Land, which captures all lands that are not included in one of the other mapping categories.

³ Government Code Provisions: Provisions Relating to the California Land Conservation Act of 1965 (The Williamson Act). Chapter 7, Article 1, Section 51200 et seq., September 17, 1965. Available online at: <http://www.boe.ca.gov/lawguides/property/current/ptlg/gov/51200.html>, accessed on April 19, 2012.

California Public Resource Code

The California Public Resources Code governs forestry, forests, and forest resources, as well as range and forage lands, within the state. "Forest land" is defined by Public Resources Code Section 12220(g) as "land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits." Similarly, "timberland" is defined by Public Resources Code Section 4526 as, "land, other than land owned by the federal government..., which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees." No forest land or timberland is located in the Project Area.

California Government Code

Chapter 6.7 of the California Government Code (Sections 51100-51155) regulates timberlands within the state. "Timberland production zone" is defined in Section 51104(g) as an area that has been zoned pursuant to Government Code Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses. No timberland production zones have been designated in the Project Area.

Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR, the Proposed Project would result in a significant impact with respect to agricultural and forest resources if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract;
- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)) or timberland (as defined by Public Resources Code Section 4526);
- Result in the loss of forest land or conversion of forest land to non-forest use; or
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or forest land to non-forest use.

Approach to Analysis

The evaluation of the Proposed Project's impacts on agricultural and forest resources considers potential development of the three components of the Proposed Project relative to the environmental and regulatory setting described above.

For the reasons described below, the Proposed Project would not result in any impact related to any of the significance criteria:

- ***Conversion of Farmland to Non-Agricultural Use.*** The FMMP identifies the Project Area as *Urban and Built-Up Land*, and not as any of the “Farmland” classifications identified in footnote 1. Therefore, none of the individual components of the Proposed Project or the Proposed Project as a whole would convert Farmland to non-agricultural use. Implementation of the Proposed Project would have no impact in relation to this significance criterion.
- ***Conflict with Agricultural Zoning or Williamson Act Contract.*** The Project Area is not zoned for agricultural use and is not subject to a Williamson Act contract. Therefore, the Proposed Project would not conflict with any such zoning or contracts. Implementation of the Proposed Project would have no impact in relation to this significance criterion.
- ***Conflict with Existing Forest Zoning.*** The Project Area is not zoned for forest or timberland use. Therefore, the Proposed Project would not conflict with existing zoning for, or cause rezoning of, forest land or timberland. Implementation of the Proposed Project would have no impact in relation to this significance criterion.
- ***Loss or Conversion of Forest Land.*** The Project Area does not contain any forest land, and so the Proposed Project would not result in the loss of forest land or conversion of forest land to non-forest use. Implementation of the Proposed Project would have no impact in relation to this significance criterion.
- ***Other Changes Resulting in Conversion of Farmland or Forest Land.*** The Project Area does not contain any farmland or forest land, and so the Proposed Project would not 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.

It is noted that transportation and street network improvements that would be implemented as part of the Draft Plan would not have any impacts on agricultural and forest resources, as they would not result in any of the impacts listed under “Significance Criteria,” above. For this reason, these impacts are not discussed any further in this section.

Impacts of the Western SoMa Community Plan and the Rezoning of Adjacent Parcels (Program-Level Analysis)

As discussed under Approach to Analysis, above, the Draft Plan and the Rezoning of Adjacent Parcels would have no impact on agricultural or forest resources.

Impacts of 350 Eighth Street Project (Project-Level Analysis)

As discussed under Approach to Analysis, above, the 350 Eighth Street project would have no impact on agricultural or forest resources.

Cumulative Impacts

As discussed under Approach to Analysis, above, none of the components of the Proposed Project would have any impact on agricultural or forest resources. Therefore, the Proposed Project would not cause or contribute to any cumulative impact on such resources.